SUPPLEMENT

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Relationship between internet addiction and alexithymia among university students

Abstract

Purpose: Epidemiological studies concerning internet addiction found that 50% of internet addicts also have other kinds of psychiatric disorders. This study aims to examine the relationship between alexithymia and internet addiction levels among Turgut Özal University students in Ankara, Turkey.

Method: University students (1,107 students; 452 students from 12 associate degree programs and 655 students from 10 undergraduate programs) participated in the study. The researchers used the personal information form, the Toronto Alexithymia Scale and the Internet Addiction Scale. The approval for the current study was received from the Turgut Özal University Medical Faculty Clinical Studies Ethics Committee.

Results: The number of the alexithymic students was 12.5% whereas the number of the students who were internet addicts was 13.5%. The internet addiction scores were higher among alexithymic individuals than the non-alexithymic ($p < 0.001$). There was a significant difference in internet addiction average scores between male and female students ($p = 0.001$). 'Difficulty identifying feeling' scores were higher among females whereas "externally oriented thinking" scores were higher among males.

Conclusion: The study findings suggest that the internet addiction scores were significantly higher among alexithymic individuals than those who are non-alexithymic. The most obvious reason for this relationship may that alexithymic individuals try to regulate their emotional moods through addictive behavior. There is a need for more comprehensive studies on this subject in the literature.

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Internet addiction means excessive and uncontrollable use of internet that leads to various detrimental results, including bad academic and professional performance, relationship problems, insomnia [1- 3] and even psychotic symptoms [4]. Internet addiction is an increasingly widespread problem. Epidemiological studies concerning internet addiction found that 50% of internet addicts also have other kinds of psychiatric disorders [5]. Mental disorders occurring with internet addiction include substance abuse (38%), mood disorders (33%), depression or dysthymia (25%), psychotic disorders (14%) and anxiety disorders (10%) [6]. More and more research shows that individuals suffering from internet disorders need professional care and treatment [7].

Alexithymia is characterized as a subclinical deficiency in defining and expressing emotions. In community-based studies, alexithymia prevalence ranges from 8% to 15% [8]. Also, it has been observed that alexithymia is related to addiction disorders. This rate is 67% among alcoholics [9] and 50% among other substance addicts [10]. Among individuals with substance abuse disorders, alexithymia is found to be closely related to anxiety and depression [11]. There are also other studies showing that alexithymia contributes to various psychiatric disorders [12].

This study aims to examine the relationship between alexithymia and internet addiction levels among Turgut Özal University students in Ankara, Turkey.

Methods

The approval for the current study was received from the Turgut Özal University Medical Faculty Clinical Studies Ethics Committee. The sample of the study consists of 1,107 college students (including 452 students from 12 associate degree programs and 655 students from 10 undergraduate programs) studying at Turgut Özal University between

December, 2013 and February, 2014. The participants were students who were in their classrooms during implementation and who volunteered to participate.

The study employed a descriptive research method and a relational research model. The researchers used the personal information form, the Toronto Alexithymia Scale (Bagby *et al.*) and the Internet Addiction Scale (Nichols & Nicki). The Mann-Whitney U and Kruskal Wallis tests were used to compare the averages obtained from the scales. The Chi Square test was used to assess the relationship between the variables and Spearman correlation analysis was performed to evaluate the correlation between the variables. For statistical analysis, SPSS-20 was used. In terms of statistical discrepancy and correlation, when $p\text{-value} < 0.05$, it was accepted as statistically significant.

Results

A total of 1,107 students participated in the study; 816 were female (73.7%) and 291 were male (26.3%). The number of students from the associate degree program was 452 (40.8%) and the number of undergraduate students was 655 (59.2%). The number of alexithymic students who scored 61, the cutoff score for the Alexithymia Scale, or higher was 138 (12.5%) whereas the number of the students who were internet addicts and scored 90, cutoff score in Internet Addiction Scale, or higher was 150 (13.5%).

The internet addiction scores were higher among alexithymic individuals than the non-alexithymic. This difference was statistically significant ($p < 0.001$, Table 1). There are also statistically significant differences among internet addiction scores and scores in the “difficulty identifying feeling” (DIF), “externally oriented thinking” (EOT) and “difficulty expressing feelings” (DEF) subscales ($p < 0.001$, Table 2). A scatter plot was used to assess relationships among internet

TABLE 1. Comparison of internet addiction frequency based on the condition of students being alexithymic

		Internet addiction		Total	p*
		Yes	No		
Alexithymia	Yes	38	100	138	<0.001
		27.5%	72.5%	100.0%	
	No	112	857	969	
		11.6%	88.4%	100.0%	
Total		150	957	1107	
		13.6%	86.4%	100.0%	

TABLE 2. Comparison of alexithymia total and subscale scores based on the condition of students being alexithymic

	Internet addiction	N	Median (25-75%)	P*
DIF	Yes	150	17.00 (13.00-21.00)	<0.001
	No	957	13.00 (11.00-17.00)	
DEF	Yes	150	14.00 (11.00-16.00)	<0.001
	No	957	12.00 (9.00-14.00)	
EOT	Yes	150	23.00 (20.00-25.00)	<0.003
	No	957	22.00 (19.00-24.00)	
Total Score of TAS	Yes	150	54.00 (49.00-61.00)	<0.001
	No	957	48.00 (42.50-54.00)	

*Mann Whitney U Test

TABLE 3. Comparison of internet addiction frequency of students based on the gender

		Internet Addiction		Total	p*
		Yes	No		
Gender	Male	56	235	291	0.001
		19.2%	80.8%	100.0%	
	Female	94	722	816	
		11.5%	88.5%	100.0%	
Total		150	957	1107	
		13.6%	86.4%	100.0%	

* Chi-square Test

addiction scores, TAS total scores and subscale scores. No relationships were found for either group.

There was no significant difference in terms of alexithymia frequency between male and female students ($p=0.722$); however, there was found a significant difference in internet addiction average scores between male and female students ($p=0.001$, Table 3). Between the scores from DIF and EOT subscales, and the gender variable, a significant difference

($p<0.001$, $p=0.030$) was discovered. In other words, DIF scores were higher among females whereas EOT scores were higher among males. Conversely, for the DEF subscale, no statistically meaningful difference was found between genders ($p>0.05$).

Although the alexithymia frequency was higher in students from the medical faculty (12%) than students from the non-medical departments (10.3%), this difference was not statistically significant ($p=0.389$). Similarly, the alexithymia scores among associate degree students were higher than the scores of undergraduate students, but again this was not statistically significant ($p=0.389$). Again, there was no difference between the medical faculty students and non-medical department students in terms of internet addiction scores ($p=0.955$).

Discussion

When examining the alexithymia scores of the 1,107 students participating in the study, it was found that 12.5% of the participating students were alexithymic. This rate is consistent with other studies found in the literature [13, 14]. It should also be noted that the alexithymia prevalence in recent research is higher than that in past studies [1, 8, 15, 16].

The study findings suggest that the internet addiction scores were higher among alexithymic individuals than those who are not alexithymic, which was also found to be statistically significant. The study results are in line with the literature. Recent research shows that there is a relationship between alexithymia and internet addiction [1, 17-20]. The most obvious reason for this relationship is that alexithymic individuals try to regulate their emotional moods through addictive behavior. The opportunity to control time while writing messages or logging in to an account and the chance to rewrite and organize verbal communication enables alexithymic individuals to improve their moods, to manage their emotions during social interactions and to establish more adaptive communication [1]. According to the Social Network Theory, the internet is primarily beneficial for extroverted individuals. The theory claims that personal characteristics are the most crucial factors in determining motivation and behavior, especially in social interactions. According to the theory, extroverted individuals are in need of communication more than introverted individuals, thus they use internet mainly for communication [21]. On the other hand, the Social Compensation Hypothesis asserts that the internet is primarily beneficial for introverted individuals. If behaviors of alexithymic individuals, such as the inability to recognize and express feelings, are accepted to be introverted in nature, then

this hypothesis would be more useful in explaining the relationship between alexithymia and internet addiction. Research concerning this topic shows that the reason for an individual to hide his or her identity or to search the net anonymously is to alleviate the anxiety stemming from fear of rejection or being mocked. By hiding themselves, such individuals are thought to feel more comfortable in online environments or to show more self-disclosing behavior [22].

In our study, alexithymia subscale scores were compared with scores of internet addiction. All subscale scores were higher those with internet addiction than those without and this difference was found statistically significant. These results we had obtained are consistent with the literature; however, a significant relationship between difficulty identifying feeling (DIF) subscale and internet addiction has been reported in the literature [1, 17, 18]. Also, in a recent study of college students in Turkey, a significant relationship between both subclass of DIF and DEF and internet addiction was found [17].

In prevalence studies in Turkey as well as worldwide, alexithymia scores have been found to be higher in male than female. According to our study, there was no significant difference between male and female students in terms of frequency of alexithymia. This result is consistent with some studies in the literature [1, 8]. The studies examining alexithymia in terms of familial transmission and heritability, a significant difference was not found between genders [25,26]; however, in other studies, alexithymia scores of male were observed to be higher than male [8, 13, 15, 16].

While subscale DIF scores were higher in female students, EOT scores were higher in males. This difference was statistically significant; however, there was no significance found between genders in terms of DEF. Our results in terms of DIF, EOT, and DEF are consistent with the literature. In a study DIF and EOT scores were found to be higher for girls than boys and it was found a significant difference between genders in terms of these two sub-scales [1]. Except university students in broad-based community work, DIF scores of female participants was observed to be higher than male and this difference was found statistically significant. On the other hand, results of same study also indicated that alexithymia scores of male were statistically significantly higher than women until today, in the studies on alexithymia, the differences between both the prevalence of alexithymia and gender in subscale scores and the total scores of the scale can be caused by familial and cultural differences.

According to researchers, internet addiction can be seen in both genders and at any age and it may begin at an earlier age than other addiction [25]. According to the results obtained in

our study on internet addiction, the scales administrated [26, 27] showed that 13.5 percent of the students were internet addicted. In a study conducted in Taiwan with 910 university students, the prevalence of Internet addiction was found to be 5.9% [28]. Another study conducted in Spain with 2,780 university students and investigating the problematic Internet use among the students found the prevalence of Internet addiction was 6.08% [29]. In a study conducted in 319 university students in Ankara, examining the relationship between various parameters of Internet addiction, internet addiction rate was measured at 12.2% [17]. When studies take samplings from locations such as university, it makes it difficult to make a comparison when considering the geographical and methodological differences [29].

When internet addiction was evaluated according to gender, 11.5% of male and 19.2% of female students who participated in this study were found to be internet addicts, and the gender difference was statistically significant. These results are consistent with many studies in the literature [17, 28]; however, there are also studies that found no gender difference [1, 25, 29]. There is, therefore, a need for more comprehensive studies on this subject.

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