Original Article

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The Relationship of Internet Addiction with Quality of Life and Alexithymia in Students in Iran

Psychiatry/Mental Health Section

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ABSTRACT

Introduction: Internet Addiction (IA) is one of the psychological disorders that have increased with the spread of technology, and its prevalence has also increased and leads to many complications on human health.

Aim: This study was performed to investigate the relationship of IA with Quality Of Life (QOL) and alexithymia in students.

Materials and Methods: In this cross-sectional study, 381 students of Islamic Azad University of Shahrekord, southwest of Iran, were randomly selected by multi-stage cluster sampling.

Data were collected by the Internet Addiction Test (IAT), a Quality Of Life (QOL) questionnaire (WHOQOL-BREF), and the Toronto Alexithymia Scale.

Data analysis was performed by SPSS v19 using Pearson's correlation coefficient and regression analysis.

Results: A significant, inverse correlation was observed between QOL and IA (p=0.04, r=-0.167), and the correlation was positive and significant with respect to alexithymia. Between IA and QOL, a significant, inverse correlation was observed (p=0.03, r=0.212).

Regarding the dimensions of QOL and alexithymia, IA was found to predict the QOL dimensions, including the psychological, social relationships, and external environment dimensions as well as, in alexithymia, the difficulties describing emotions and externally oriented thinking subscales (p<0.05).

Conclusion: IA was associated with QOL and alexithymia. With the increase in IA, QOL declined, and as IA increased, alexithymia also increased.

Keywords: Internet addiction, Quality of life, Student, Social relationships

INTRODUCTION

Addiction is one of the issues that have been investigated in recent years for its psychological aspects and establishing interventions based on it [1,2]. Internet Addiction (IA) is one of the psychological disorders whose prevalence has increased with the spread of technology, and that causes neurological, psychological, and social complications [3,4] and affects the health aspects of affected people adversely [4]. This type of addiction is one of the problems that mainly affect young people in the community and may create problems throughout the education of pupils and students [5]. Despite the increased prevalence of IA, the definition and precise diagnostic criteria for it have not yet been proposed and more studies on the ambiguous dimensions of the disease are needed [3,6]. In recent years, a broader concept of health has been addressed, which focuses on the improvement of QOL [7], which includes a broad concept of sense of well-being and life satisfaction and is the result of personal evaluation [8]. Since addiction influences the various aspects of health, the assessment of QOL, which is a mental concept of health, is necessary; alexithymia is one of the concepts that are related to mental health and other diseases, such as fibromyalgia [9], skin diseases [10], and depression [11]. This construct is composed of the components Difficulties Recognizing Emotions (DRE), Difficulties Describing Emotions (DDE), Externally Oriented Thinking (EOT), and represents impairments in cognitive processing and emotional regulation [12,13]. Alexithymia is a multifactorial disease that may overlap with other psychiatric disorders [14]. Alexithymia in some cases of addiction may be linked with neurobiological relationships related to reward/loss [15].

Therefore, considering that students are in a period of lifetime when reduced QOL and mental disorders in them can have adverse effects on their future and, consequently, on the health of the community, we were encouraged to investigate the relationship of IA with QOL and alexithymia in students.

MATERIALS AND METHODS

In this descriptive-analytical study, the statistical population consisted of the students of Islamic Azad University of Shahrekord, southwest of Iran, who were studying in the academic year 2016. The study protocol followed the Helsinki Protocol, and was approved by the Ethics Committee of the Research Branch, Islamic Azad University. Also, verbal consent was obtained from the students. The sampling in this study was multistage, random cluster. The sample size was calculated to be 381 by using Cochran's sample size formula.

Lack of providing consent to participate in the study and attaining a score of less than 49 on the Kimberly Young Internet Addiction Test (IAT) were considered as the exclusion criteria.

Three questionnaires used to collect information were the IAT [16], World Health Organisation QOL (WHOQOL)-BREF [17], and the Toronto Alexithymia Scale (TAS-20) [18]. The questionnaires were filled out by the respondents themselves. In the IAT, the higher the score the more severe the IA. The scores ranged from one to five. In the end, the total score is obtained by summing the 20 items. The TAS-20 is one of the questionnaires that have been used in most studies. The scale's reliability was confirmed in the study of Panayides P et al., with Cronbach's alpha coefficient of 0.86 [18]; and in Iran, its reliability was confirmed with a coefficient of 0.7 [19].

The TAS-20 has 20 items that respondents should answer using a 6-point Likert scale ranging from *None* (1) to *Always* (6) [18].

The range of scores on this scale is from zero to 100, with higher scores indicating more severe dependence on the Internet, so that a score of less than 20 indicates lack of dependence, the

scores 20-49 indicate a normal user, the scores 50-79 indicate mild addiction (users at risk), and the scores 80-100 indicate severe IA [20].

Another questionnaire administered was the WHOQOL that is used to measure QOL in the last two weeks [17].

The questionnaire consists of 24 items divided into four subscales, and the first two questions do not belong to any of the dimensions, and generally assess the health status and QOL, so the questionnaire has a total of 26 items that address the bodily (physical) health, psychological, social relationships, and environment subscales.

The Cronbach's alpha coefficient of the WHOQOL-BREF has been reported between 0.74-0.820 for the four subscales and the total scale [21]. In Iran, intracluster correlation and Cronbach's alpha coefficients in all dimensions were higher than 0.7 [22]. The TAS-20 includes three subscales: DRE measured by seven items, DDE measured by five items, and EOT measured by eight items. The items are rated on a 5-point Likert scale ranging from 1 (*Absolutely disagree*) to 5 (*Absolutely agree*). The reliability of this questionnaire was obtained 0.88 in the study of Leising D et al., [23]. In Iran, Cronbach's alpha coefficients for the TAS-20, and the three subscales DRE, DDE, and EOT were calculated to be 0.85, 0.82, 0.75, and 0.72, respectively [24].

Data analysis was performed using SPSS Version 19.0. Armonk, NY: IBM Corp. Pearson's correlation coefficient and regression analysis were used to investigate the relationship and predict variables.

RESULTS

In this study, the majority of samples were bachelor's students 29 (54.9%) and the most frequent participants were single 288 (75.5%), 169 (44.4%) were female and 212 (55.6%) were male. Most of the students were studying in gardening, representing 62 (16.27%) of all studied samples.

Regarding descriptive statistics of dimensions of QOL, the mean scores of the physical health, psychological, social relationships, and living environment were 20.38±6.40, 17.00±6.62, 9.16±2.81, and 25.65±7.00, respectively.

For descriptive statistics of alexithymia, the mean scores of DRE, DDE, and EOT were 20.40±6.36, 13.89±5.75, and 26.68±6.90, respectively.

The mean scores of IA, QOL, and Alexithymia are listed in [Table/Fig-1].

Variables	Sample size	Minimum	Maximum	Mean	Standard deviation
Internet addiction	381	20	90	25.4042	16.073
Quality of life	381	36	99	72.2126	12.203
Alexithymia	381	33	89	60.9948	11.453

[Table/Fig-1]: Descriptive data on internet addiction, quality of life, and alexithymia.

Regarding the relationship of the QOL dimensions, a significant relationship between IA and all dimensions of QOL except for physical activity (p>0.05) was observed. Regarding the relationship of alexithymia dimensions, a significant relationship between IA and all dimensions of alexithymia except for DRE (p>0.05) was also noted [Table/Fig-2].

Variables	Dimensions	Number	Correlation coefficient	Significance level
Quality of life	Internet addiction and physical health	381	0.049-	0.342
	Internet addiction and social relationships	381	0.326	0.016
	Internet addiction and psychological domain	381	0.215	0.035
	Internet addiction and living environment	381	0.117	0.022
Alexithymia	Internet addiction and difficulties recognising emotions	381	0.030	0.560
	Internet addiction and difficulties describing emotions	381	0.227	0.000
	Internet addiction and externally oriented thinking	381	0.141-	0.005

[Table/Fig-2]: Correlation coefficients of internet addiction with quality of life and alexithymia.

The results showed that there was a significant relationship between IA, QOL, and alexithymia (p<0.05). Given that the correlation obtained between IA and QOL was negative, this relationship is inverse, that is, the higher the IA, the lower the QOL [Table/Fig-3].

Variables	Number	Correlation coefficient	Significance level
Internet addiction and quality of life	381	0.167-	0.040
Internet addiction and alexithymia	381	0.212	0.031
Quality of life and alexithymia	381	0.306	0.000

[Table/Fig-3]: Correlation coefficients between studied variables.

There was no significant difference in IA between girls and boys (p>0.05) [Table/Fig-4].

As shown in [Table/Fig-5], with regards to the QOL dimensions, the significant level obtained for physical health was 0.36.

Variable	Group	Total square	df	Mean square	F	Significance level
Internet addiction	Inter-group	237.91	91.353	1	0.353	0.553
	Intra-group	7581.564	98078.390	379		
	Total	7854.929	98169.753	380		

[Table/Fig-4]: The results of univariate analysis of variance of Internet addiction in girls and boys.

Coefficients						
Model		Unstandardised coefficients		Standardised coefficients	t	Significance level
		B	Standard error	B		
Quality of life	Constant	63.638	5.260	-	12.099	0.018
	Physical health	0.071	0.131	0.028	0.544	0.36
	Psychological domain	0.90	0.125	0.037	0.718	0.022
	Social relationships	0.193	0.294	0.024	0.473	0.024
	External environment	0.257	0.119	0.112	2.148	0.023
Alexithymia	Constant	29.154	4.353	-	13.590	0.000
	Difficulties recognising emotions	0.072-	0.126	0.029-	0.572-	0.568
	Difficulties describing emotions	0.622	0.139	0.223	4.470	0.000
	Externally oriented thinking	0.297-	0.116	0.128-	2.548-	0.011

[Table/Fig-5]: Estimation of coefficient of model and the significance of coefficients.

Therefore, IA does not predict this variable, but for the psychological, social relationships, and the external environment dimensions, the levels of significance are less than the 0.05 error level. Therefore, the hypothesis of the prediction by the variables is verified.

With regards to alexithymia, the significant level obtained for the DRE subscale is 0.568, which is higher than 0.05. Therefore, Internet addiction does not predict this variable, but for the DDE and EOT dimensions, the levels of significance are less than the 0.05 error level. Therefore, the hypothesis of prediction by the variables is verified [Table/Fig-5].

DISCUSSION

The results of the current study showed that IA did not predict the QOL dimensions, but predicted the psychological, social relationships, and living environment dimensions. On the other hand, a significant relationship between IA and QOL was observed. The results also showed a significant relationship between IA and the social relationships, psychological, and living environment dimensions.

In line with these results, in a study that examined the effect of IA on the QOL in medical students, a significant, negative correlation between IA and the social relationships, psychological, and physical health dimensions was noted [25]. These results are consistent with the findings of Eliacik K et al., because IA significantly reduced the QOL in adolescents [26]. This has been proven in various parts of the world. In another study that was conducted on IA and QOL in seven regions of the world (31 countries), an inverse correlation between the prevalence of IA and QOL was observed [27]. Such results were also confirmed in a study conducted in Vietnam on 566 adolescents [28]. IA generally changes the normal lifestyle of a person by changing his/her behavior, self-esteem, nutrition, work, and social relationships, and these changes lead to a decline in QOL [29,30]. The results of this study showed that a significant, positive correlation between IA, QOL, and alexithymia was observed. The IA also predicts the two dimensions of DDE and EOT. In this regard, Baysan-Arslan S et al., reported that the IA score was higher in alexithymic students [31]. In the studies of Mahapatra A et al., and Craparo G et al., this relationship was also influenced [32,33]. Another study showed that IA was related to alexithymic characteristics in adolescent girls [34]. In a study conducted in Italian adolescents, the pathological complications of alexithymia increased with an increase in IA [35]. In general, alexithymia is a risk factor for IA, and the two variables are mutually related [36]. It should be noted that several factors affect IA, some of which may have affected the results of studies as confounders [32]. IA is a psychological disorder characterised by tolerance, withdrawal symptoms, emotional disturbance, and the breakdown of relationships [37]. One of the complications of IA may be the lack of some psychological skills; or occurrence of some psychological problems, including lack of understanding one's own and others' emotions, the inability to control emotions, or lack of social skills and not being optimist, may predispose a person to IA; or it is likely that lack of these skills and abilities is due to IA and Internet dependence, as well as separation from others and the community. However, the exploration of the causal relationship between this disorder and other psychological and social problems should be taken into account in future studies.

The capacity of people with IA to sympathise with emotional states of others is limited, which is in accordance with emotional negligence.

The limitation and inability of a person to empathize with others influence interpersonal relationships. IA also leads to difficulty in emotional self-regulation and inability of cognitive processing of emotional information and regulation of emotions.

LIMITATION

The lack of accurate study of the confounding variables and the determination of the role of personal characteristics on the main variables of the study are the limitations of this study, which is suggested to be investigated in future studies.

CONCLUSION

IA was associated with QOL and alexithymia. With the increase in IA, QOL decreased, and as IA increased, alexithymia also increased. It is suggested that in universities, certain measures be taken to allow students to use the Internet as less as possible, and if such problems occur, psychological interventions be performed on the students to resolve this problem.

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