

Internet addiction and its relationship with some of the social-demographic determinants

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ABSTRACT

The purpose of this study was to evaluate the prevalence of internet addiction and trends. It also aimed at investigating whether there is a meaningful relationship between internet addiction and also some socio-demographic determinants. The statistical population of the study included 160 employees of Shiraz university of medical sciences working at a central building, who had been selected using a stratified sampling method. Measurement tools included Young's Internet-Addiction Test and some questions about socio-demographic determinants. Data analysis was performed using regression analysis and correlation tests. Findings suggested that although the level of internet addiction among the employees of Shiraz university of medical sciences has decreased over two years, there are still some mild and moderate levels of internet addiction among them. Furthermore, internet addiction had a significant relationship with marital status and the mother's education level. It is recommended that by using educational workshops and announcements in the workplace, the reduction of undesirable use of the Internet should be cultured.

Keywords: Internet addiction, New media, Mother's education level, Marital status

Introduction

In recent years, the use of the internet as a world network has had significant growth. In the world, the percentage of internet users has increased from 23% in 2008 to 51% in 2018 [1]. In Iran, also, the percentage of internet users has increased from 35% in 2008 to 70% in 2017 [2]. The ever-increasing growth and development of information and communication technology along with the public move towards using communication technologies has opened a wide window toward the Internet, as a world network, and its various uses. In addition to the

undeniable advantages of this world network, users have also faced some damages, of which, internet addiction is one of them. Firstly, it was in the mid 1990s that some reports have been published; based on some internet users addicted to it similar to those who are addicted to drugs, alcohol, and gambling [3, 4]. Previously, there had been some similar disorders such as excessive use of TV, dependence on the computer, and obsession with video games, but, the concept of internet addiction had not entered experimental research [5]. The increase in studies and research regarding internet addiction has led to the presentation of various definitions. The most common definition of them is that overall, internet addiction includes tendencies, motivations, and extremist and uncontrolled behaviors regarding the use of a computer or having access to the internet, which leads to disorders or distress [6]. In terms of the etiology of this intricacy, despite the existence of wide studies regarding medical, psychological, moral, sociological, law, and computer fields, there are still some ambiguities [7]. In some of the studies, also, like other psychological diseases especially addictive behaviors

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[8], the mutual effects of neurobiology and psycho-social factors have been identified as the main factor of internet addiction [9]. The remarkable increase of internet users in Iran, especially among adolescence and youth have attracted the attention of Iranian researchers toward finding factors related to internet addiction. These studies which are most beneficial and notable, have been conducted since 2001 with an emphasis on school and university students in three fields; individual, family, and socio-educational. According to the studies, among students, those individual factors related to internet addiction include some characteristic factors [10, 11], identity and sensation-seeking factors [12], emotional intelligence criteria [13], brain-behavioral systems [14], sleep disorder [15] and mental health [16] factors. Family factors related to internet addiction also include the performance of the family [16], the function and process of the family [17], and social support of the family [18] and socio-educational factors also include academic procrastination [19], academic compatibility [20], academic motivation [21], academic achievement [11, 22], social support of friends and the tension resulting from academic expectations [18]. Moreover, according to the studies, life quality [23] and training ego consciousness [24] are effective in reducing the internet addiction of students. In university students, also, according to the conducted studies, individual factors related to internet addiction include anxiety [25], mental health [26, 27], public health [28], loneliness [28, 29], characteristic features [13], personal characteristics [30], emotional self-regulation [31] and identity evaluation [32]. Family factors related to internet addiction in university students include attachment styles [33, 34] and comprehending the performance of the family [31]. Moreover, socio-educational factors related to internet addiction include academic stress [30], academic procrastination [35], academic burnout [36], the number of educational studies [37], educational engagement [38], academic achievement [39], social intelligence and prosocial personality [40], sensitivity to rejection [31], fear of negative evaluation [33], perceived social support, and feeling social-emotional loneliness [41]. In addition to the aforementioned factors, the thinking styles of individuals aged 16 to 30 years have also been reported to be related to their internet addiction [42].

Research purposes and questions

The current study aimed at investigating the prevalence of internet addiction and the relationship between internet addiction and some demographic determinants. Accordingly, research questions have been presented as the following:

- What is the prevalence of internet addiction and its procedure among employees?
- Are there any significant relationships between internet addiction prevalence and demographic factors?

Materials and Methods

This research was basic in terms of purpose and it was quantitative in terms of data nature. The data collection method

was also descriptive and it had been conducted through correlation studies. The statistical population of the current study included all employees of Shiraz medical Science University located in the central building. According to the Cochran Formula, 160 individuals were selected using convenient random sampling.

Measurement tool

To collect data, Young's internet addiction test questionnaire as well as some questions regarding social-demographic determinants were utilized.

- *Internet Addiction Test (IAT) questionnaire*: This is a questionnaire for diagnosing internet addiction designed for those mature people that have experienced the use of the internet. This questionnaire has 20 items measuring features and behaviors resulting from the overuse of the internet (including being out of control, escaping from the reality, and dependency) as well as investigating issues in individual, occupational and social fields that are dependent on the addiction to the internet. Items have been presented in five different types and responding to them is based on five points Likert Scale [43]. Young's internet addiction test questionnaire is standard and its psychometric features in Iranian society have been reported as appropriate [44].
- Socio-demographic determinants had been presented in a written form including gender, educational level, father's educational level, mother's educational level, marriage status, educational level of a spouse, monthly income of the family, and class distinction feeling.

Administration method and data analysis

After collecting data, it was analyzed and categorized based on socio-demographic determinants. **Table 1** shows various investigated groups. All of the data analysis phases have been done using SPSS statistical software.

Table 1. Categorizing the data based on the year and socio-demographic determinant variables

Variable name		Categorization	
Gender	Female	Marriage status	Single
	Male		Married
Educational level	Level 1: Diploma and less	The educational level of the spouse	Others
	Level 2: Associate		Level 1: Diploma and less
	Level 3: B.A.		Level 2: Associate
	Level 4: M.A.		Level 3: B.A.
	Level 5: Ph.D.		Level 4: M.A.
Father's educational level	Level 1: Diploma and less	Family income	Level 5: Ph.D.
	Level 2: Associate		Level 1: Less than 2 million Tomans
	Level 3: B.A.		Level 2: Between 2 to 4 million Tomans
	Level 3: B.A.		Level 3: More than 4 million Tomans
			Level 1: High

Mother's educational level	Level 4: M.A. and Ph.D.	Class distinction feeling	Level 2: moderate to high
	Level 1: Diploma and less		Level 3: moderate
	Level 2: Associate		Level 4: moderate to low
	Level 3: B.A. and higher		Level 5: low

Results and Discussion

Descriptive indexes of the score of addiction to the internet (including the mean as the central index and standard deviation as the dispersion index) in various groups have been presented in **Table 2**.

Table 2. Descriptive indexes (mean and standard deviation) of the score of internet addiction in various groups

Variable name	Group	Mean	Standard deviation	Name of the variable	Categorization	Mean	Standard deviation
Gender	Male	26.1875	15.6893	Marriage status	Single	28.6750	15.3446
	Female	23.1238	14.4087		Married	22.0556	14.3942
Educational level	Level 1	17.9091	13.2925		Others	30.0000	13.5154
	Level 2	28.2500	18.6553	Level 1	24.7750	14.9022	
	Level 3	21.8000	15.3157	Family income	Level 2	23.9103	15.6156
	Level 4	25.537	13.318	Level 3	24.1071	12.9166	
	Level 5	29.3750	0.42	Level 1	34.6667	15.5670	
Father's educational level	Level 1	22.8864	0.32	Class distinction feeling	Level 2	24.7105	14.4258
	Level 2	23.2500	0.80		Level 3	23.7791	15.0242
	Level 3	29.3750	0.6		Level 4	24.6500	16.1058
Mother's educational level	Level 4	34.000	0.257		Level 5	22.000	12.000
	Level 1	23.2857	0.94				
	Level 2	20.7143	0.860				
Spouse's educational level	Level 3	47.000	13.1605				
	Level 1	24.3000	17.2507				
	Level 2	20.8333	22.0406				
	Level 3	20.6061	12.3616				
	Level 4	20.9412	10.5739				
	Level 5	33.8000	16.3615				

To appropriately select hypothesis tests and the correlation, the Kolmogorov-Smirnov fitness test was used. The results of this test have been presented in **Table 3**.

Table 3. Kolmogorov-Smirnov test for checking the normality of distribution regarding addiction to the internet

Variable	Mean	Standard deviation	Kolmogorov-Smirnov-Z	P-value
The score of internet addiction	24.0584	14.79412	0.089**	0.005

According to the above table, the results of the KS test were significant for the score of internet addiction (P=0.005). Therefore, this variable didn't have a normal distribution and it was utilized for analyzing hypothesis tests and the correlation of non-parametric analyses.

Question 1. What is the prevalence of internet addiction and its procedure among employees?

Diagram 1 shows the frequency percentage of various grades of internet addiction. As it is observed in this diagram, in 2017, 33.6% of employees had an internet addiction in a weak grade

and 8.1% of employees, also had an internet addiction in a moderate grade; almost 58% of employees did not have an internet addiction. In 2018, 26.8% of employees had internet addiction in a weak grade and 5.7% had internet addiction in a moderate grade and almost 67% did not have an internet addiction. None of the employees had severe internet addiction during these two years.

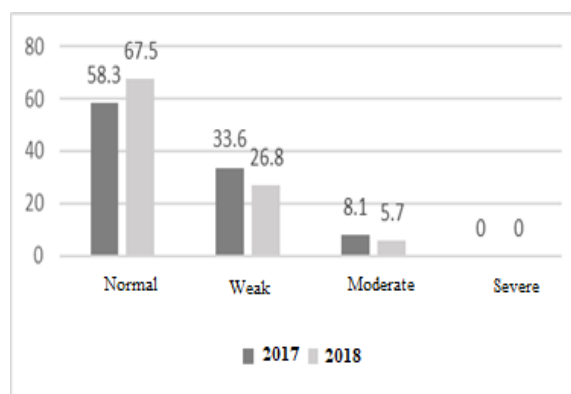


Figure 1. The frequency percentage of various grades of internet addiction

To investigate the significance of change processes of the mean of internet addiction score, the non-parametric test of Mann-Whitney (U) was utilized to explore the significance of the mean difference during these two years. According to the result of this

test ($P=0.001$), the observed difference in the prevalence of internet addiction was significant.

Question 2. Are there any significant relationships between the prevalence of

internet addiction and socio-demographic determinants?

To investigate the significance of the score difference of internet addiction in the gender variable, the non-parametric test of KS was used and non-parametric tests of Kruskal-Wallis (KW) were utilized for other variables. **Table 4** shows the results of these tests in various socio-demographic variables.

Table 4. The results of non-parametric tests to investigate the significance of the difference in internet addiction scores in various groups of socio-demographic variables

Variable	Kind of test	Z (KS)	H (KW)	P	Variable	Kind of test	Z (KS)	H (KW)	P
gender	KS	0.854	-	0.459	Marriage status	KW	-	6.609**	0.037
Educational level	KW	-	5.391	0.249	The educational level of the spouse	KW	-	4.511	0.341
Father's educational level	KW	-	4.068	0.254	Family income	KW	-	0.384	0.825
Mother's educational level	KW	-	10.463**	0.005	Class distinction feeling	KW	-	1.641	0.801

As it has been shown in the above table, based on this test, among investigated socio-demographic factors, the difference in the internet addiction score in various groups of the variables of marriage status ($p=0.037$) and mothers educational level ($p=0.005$) was significant having the possibility of respectively, 95% and 99%. Diagram 2 shows the internet addiction score's mean in various groups of this variable. As it is observed in this diagram, employees whose mothers have B.A. and higher educational levels, had more internet addiction prevalence. Then, internet addiction was more prevalent in employees whose mother's educational level was a diploma, and less, and finally, employees whose mothers had associate educational levels had less internet addiction prevalence than others. Moreover, the prevalence of internet addiction among previously married employees was the highest. Then, internet addiction was more prevalent among single individuals and it was the least among married individuals compared to others.

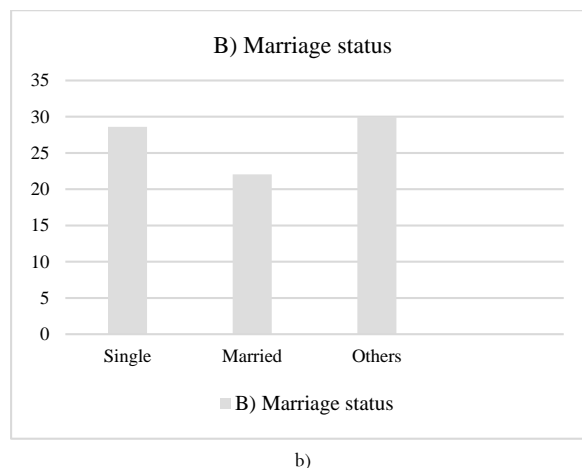
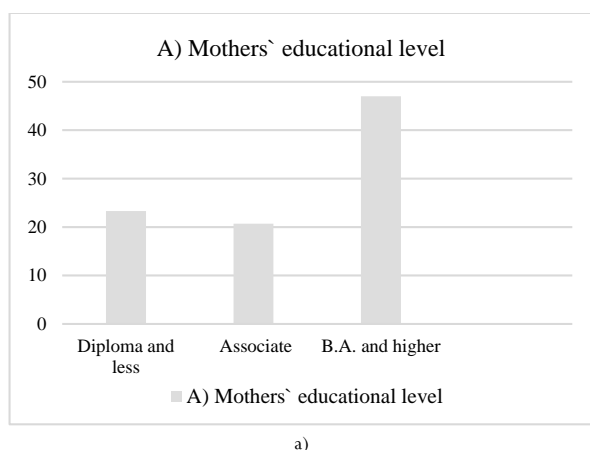


Figure 2. The mean of internet addiction score in various groups of variables including a) mother's educational level, b) marriage status



The difference in internet addiction score was not significant in other variables ($p>0.05$). This meant that internet addiction was not dependent on gender, educational level, father's educational level, spouse's educational level, family income, and Class distinction feeling.

In recent years, the incredible growth of using the internet as the world network, especially among Iranians has revealed the importance of paying attention to the damages resulting from internet use and the efforts of its prevention. Internet addiction as one of these damages is critical to the extent that according to the latest world reports of diagnosing mental disorders in terms of psychology, DSM5, the importance of investigating its introduction as one the mental disorders has been emphasized since it can lead to anxiety and stress in the individuals [45]. The purpose of this study was to investigate the prevalence of internet addiction, and its expression and explore its relationship with some of the socio-demographic determinants, which was conducted in three phases considering the employees of Shiraz Medical Science University, as the statistical population.

Firstly, the prevalence of internet addiction over two years was measured and the status of internet addiction and its change procedures were investigated. The results indicated that in 2018, 26.8% of employees had internet addiction in a weak grade and 5.7% of them had internet addiction in a moderate grade. Statistical tests showed that having a confidence coefficient of 99%, these values had reduced compared to the similar results of previous years.

In the second step, the relationship between internet addiction and some of the socio-demographic determinants was measured among employees and the statistical results of the tests were as the following:

- In the marriage status variable, it could be claimed with a 95% confidence coefficient that the prevalence of internet addiction was the least among married individuals, then single people and others had a higher mean score of internet addiction. Marriage, as the sub-structure of the existence of a healthy family, gives meaning to the life of individuals and organizes it, according to which, it prevents the wasting and uselessness of human resources and helps human beings to have individual health. Unmarried people are more inclined toward wasting and destroying their existential capital due to having fewer responsibilities and on the other hand, due to mental pressures resulting from not appropriately adjusting the authorities, they may seek to compensate them with methods that can impose irreparable damages to their individual lives and the society; according to the results of this study, internet addiction can be considered as one of these damages.
- Regarding the mother's educational level variable, the results indicated with a 99% confidence coefficient, the prevalence of internet addiction was more among employees having mothers with B.A. and higher educational levels. Then, internet addiction was more prevalent among employees whose mothers had a diploma and less educational levels. Employees whose mothers had associate educational levels had the least amount of internet addiction. The importance and necessity of women's education are known to everyone. Considering the significance of the role of motherhood in growing human beings and educating children, as well as inspiring peace in the family, the necessity of paying more attention to the family and children is essential for educated mothers.
- In other variables including gender, father's educational level, spouse's educational level, family income, and class distinction feeling, no significant differences were observed in the prevalence of internet addiction among employees.

Conclusion

Internet is a new technology that seems very necessary to use in today's society. This necessity is not only in some parts of today's society, such as technology and employment, but has become an integral part. Other areas of life, including daily life, have also become closely connected with the Internet. The present study

showed that one of the forms of internet presence in daily life has appeared as addiction and disease. It seems that policymakers and decision-makers should look for ways to embed the correct practices of the Internet and raise awareness of its destructive consequences.

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Ethics statement: Informed consent was obtained from all participants to participate in the study. The ethical approval was obtained from Shiraz medical university.

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