

**RESEARCH ARTICLE**

**Evaluation of Internet addiction  
status and its relation with  
general health in medical  
student at the Ahvaz  
Jundishapur University medical  
sciences in 2015**

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**Keywords**

Internet Addiction, Medical  
Student, Southwest of Iran,  
Psychiatry

**Received**

22 December 2016

**Reviewed**

10 February 2017

**Accepted**

20 March 2017

**ABSTRACT**

Dependence on the internet has been referred to as the modern addiction. In this work, the internet addiction status and the general health in the medical students is investigated. Also, the relation between the internet addiction and the general health is evaluated. Moreover, the relation of the prevalence of the internet addiction with the demographic factors is investigated. This study is done on the medical students in Ahvaz Jundishapur University of medical science in 2015. This is a cross-sectional descriptive analytic study was carried out on the 275 students of externship and internship Ahvaz Jundishapur University of Medical Sciences in 2015. In order to gather the information, the demographic questionnaire is used. By using the internet addiction test (IAT), the students were divided into three groups: ordinary users, slight addicted users and serve addicted users of internet. The general health questionnaire (GHQ) is used to compare these three groups. The SPSS software and t test is used to analyze the data and  $P < 0.01$  is significant. In this study, 220 individuals (80%) did not have internet addiction, 54 individuals (19.63%) had a slight internet addiction, and 1 individuals (0.36%) severe internet addiction was observed in the participants. there was seen a significant relationship between dependence on the internet and gender ( $P=0.006$ ), marital status ( $P=0.001$ ) and the age range ( $P=0.001$ ). There actual level of the prevalence of internet addiction in Iran is unknown but based on our study was 20% in southwest of Iran. It seems that the level of internet addiction in Iran is higher than the global average. Studying in this area requires larger population samples.

## INTRODUCTION

The history of the Internet begins with the development of electronic computers in the 1950s. Initial concepts of packet networking originated in several computer science laboratories in the United States, United Kingdom, and France. The US Department of Defense awarded contracts as early as the 1960s for packet network systems, including the development of the ARPANET. The first message was sent over the ARPANET from computer science Professor Leonard Kleinrock's laboratory at University of California, Los Angeles (UCLA) to the second network node at Stanford Research Institute (SRI). Today the Internet continues to grow, driven by ever greater amounts of online information, commerce, entertainment, and social networking. Statistics show that more time is spent on the internet than on television or satellite [1]. Examining psychological, social, cultural, and familial effects and consequences of new communication technologies such as internet is nowadays remarkably considered by psychiatrists and psychologists. Based on the latest researches done in Iran, the sixty percent of the population of Iran use the internet [2]. Statistics shows that the average time spent on the internet is 52 minutes a week. Furthermore; the 35% of the internet

users use chat rooms, 28% use online games, 30% check their emails and 25% search in the global network [3]. Moreover, another research shows that the students use the internet to do researches, read news, play game and do their homework [4]. The internet has many advantages in the life of the people and that is an opportunity to communicate people and sharing data but there have been worries related the usages and the problems that may arise [5]. Dependence on the internet has been referred to as the modern addiction. In fact, dependence on the internet is the same kind of addiction as the other common ones with the same social problems except for the lack of physical dependence observed in the chemical kinds of dependence [6]. Dependence on the internet is called by several names like “behavioral dependence on the internet”, “misuse of internet”, “problematic use of the internet”, “excessive use of the internet”, “abusing the internet” and “addiction to the internet” [7]. Young was the first people that used the words internet addiction for the dependence on the internet. In spite of the vast number of studies, there has been no consensus on the definition and measurement of this disorder. Also, there is no comprehensive theory describing how to relate this disorder to

one's mental or social health [8]. Internet addiction is in the domain of impulsive disorders which means using the internet in a way it can cause psychological, social, educational and professional in people's lives. Its most common definition is that it causes a kind of behavioral dependence on the internet [9]. The newcomers in universities studying in cities far from their families are of the first victims of internet addiction. Therefore, their mental health is an issue of substantial importance playing an important role in their learning and increasing their level of scientific knowledge [10]. Also considering the role of students in the progress and excellence of societies, it is natural to pay special attention to meet their mental needs and provide physical and psychological health for them when examining the factors influential on development [11]. Researches show that the prevalence of internet addiction can be influenced by demographic characteristics like age, sex, and educational level. A study done in Norway revealed that there is a relationship between being a male, being young and having a high educational level and the problematic use of the internet [12]. In spite of that, a study carried out on American students showed no difference between men and women [13]. The statistics

show that teenagers and youngsters are subject to the damages by the statistics more than any other group and, as Iran is one of the youngest countries from a demographic point of view, internet addiction requires special attention. Based on the statistics, there are 800,000 to 1,800,000 drug addicts in Iran while, according to the global statistics, one can infer that the number of internet addicts is likely to be much higher in Iran. Therefore, one may claim internet, due to its multiple and widespread damages, is no less important than drug addiction and within the next few years will at least be regarded as one of the important social damages [14]. So, the purpose of this study is to investigate the prevalence of internet addiction in the students of medicine in Jundishapur Medical University in Ahvaz and its relationship with demographic factors and general health in 2015.

## **MATERIALS AND METHODLOGY**

This is a cross-sectional descriptive analytic study that, after gaining the permission of University's Moral Committee, was carried out on the students of externship Ahvaz Jundishapur University of Medical Sciences in 2015. In order to gather the information, the questionnaire of demographic information, Young questionnaire and general health questionnaire (GHQ) were

used. They were completed by the students in a self-reporting way and finally the data were analyzed statistically. Young internet addiction questionnaire was developed in 1998 by Kimberly Young with 20 items which is analyzed using Likert five-point scale (1=rarely, 2=sometimes, 3=usually, 4=often, 5=always). The lowest score gained in this scale is 20 and the highest score is 100. According to the scores gained by the individuals, they are categorized into three groups; the score 20-49 normal use, 50-79 slight addiction, 80-100 severe addiction. The content and discriminate validity and the reliability of the Persian version of the questionnaire are verified. This is a standard questionnaire and its validity and reliability is reported in the previous studies with Cronbach's Alpha. The Persian version of this questionnaire is also used in Iran and its reliability was verified by Nasti with the Cronbach's Alpha of 0.81 and by Qasemzadeh with the Cronbach's Alpha of 0.88 [15].

General Health Questionnaire was developed in the 1970s; the General Health Questionnaire is a method to quantify the risk of developing psychiatric disorders. This instrument targets two areas – the inability to carry out normal functions and the appearance of distress – to assess well-

being in a person. The format of the full GHQ is 60-item test with a four-point scale for each response. The test exists in several alternate forms: GHQ-30 (30 items), GHQ-28 (28-items), GHQ-12 (12 items). the GHQ-28 is a 28-item measure of emotional distress in medical settings. Through factor analysis, the GHQ-28 has been divided into four subscales. These are: somatic symptoms (items 1–7); anxiety/insomnia (items 8–14); social dysfunction (items 15–21), and severe depression (items 22–28) [16]. There are different methods to score the GHQ-28. It can be scored from 0 to 3 (0=Better than usual, 1=same as usual, 2=worse than usual and 3=much worse than usual) for each response with a total possible score on the ranging from 0 to 84. So in each of the 4 groups of symptoms asked, the scores were added. In each group of questions, patient score was calculated and the range was between 0 and 21 (the minimum number of each question is 0 and the maximum is 3). Then in each group of symptoms, the scores of all 275 participants were summed up and the average was given and compared to standard scored (0-7 means low intensity, 7-14 intermediate intensity and 14-21 show high intensity). The data were analyzed by SPSS 22 software using descriptive exams. The reported Cronbach

alpha coefficient for the GHQ is a range of 0.82 to 0.86. The instrument is considered as reliable and has been translated into 38 different languages. When correlated with the global quality of life scale, the GHQ showed negative correlation. This demonstrates the inverse relationship with an increase in distress leading to a decrease in quality of life.

The questionnaire of demographic information and educational status is a self-made information form containing questions about the age, sex and marital status.

Calculation of sample size and sampling method:

The sample size is calculated by using the NCSS software and by considering the error and power 0.05 and 0.88, respectively. To this end, the sample size is obtained 275. Thus; the questionnaires are completed by 275 of the externships and internships.

Statistical methods of analyzing the results:

In order to describe the data in the qualitative variables, frequency and percentage were used and for the quantitative data, mean and standard deviation were used. In order to analyze the data, regression and correlation analysis were used. Also, independent t-test and Chi-Square were used when needed. It should be

pointed out that the analyses were all done using SPSS v. 22.

## RESULTS

As Show in Figure 1, in this study, 220 individuals (80%) did not have internet addiction, 54 individuals (19.64%) had a slight internet addiction, and 1 individual (0.36%) severe internet addiction was observed in the participants. In this study, 93 of the normal individuals (33.82%) and 32 of the individuals (11.64%) with slight internet addiction were male, and 127 of the normal individuals (46.18%) and 22 of the individuals (8%) with slight internet addiction and 1 of individuals (0.36%) with serve internet addiction were female. However, there was observed a significant relationship between sex and internet addiction ( $p$  value:  $0.001 < 0.05$ ). These results are shown in the Figure 2. In this study, the age range of the participants is divided into three parts (The age between 20-25 years, the age between 25-30 years and the age between 30-35 years). 138 of individuals are in the range 20-25 years, 136 of individuals are in the range 25-30 years and 1 of individuals is in the range 30-35 years. These three groups were compared using the t-test that, considering the  $p$  value of 0.001, there was observed a significant relationship between dependence on the internet and the age range of the participants. These results are shown in the Figure 3. The marital status is considered in this study. To this end, it is found that 79 of the individuals (28.73%) are married, 195 of individuals (70.91%) are single and 1 of the individuals (0.36%) is divorced. This study shows that the divorced person is located in the serve internet addiction case. Also, 67 of the individuals (24.36%) of the married participants are in the normal internet addiction and 12 of the married participants (4.36%) are in the slight internet addiction. Moreover, 153 of the single

participants (55.63%) are in the normal case of internet addiction and 42 of the single participants (15.27%) are in the slight internet addiction case. These three groups were compared using Chi 2 test that, considering the p value of 0.006, there was seen a significant relationship between marital status and dependence on the internet. Figure 4 are shown these results.

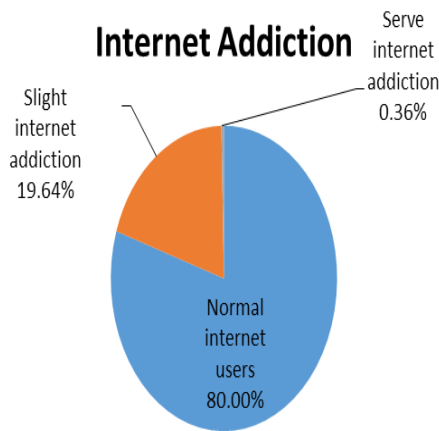


Figure 1. Prevalence of Internet addiction

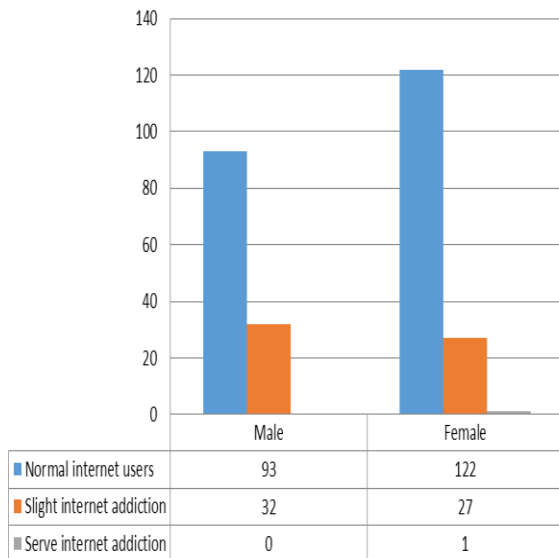


Figure 2. Gender difference sort by Normal internet users, slight and serve internet addiction

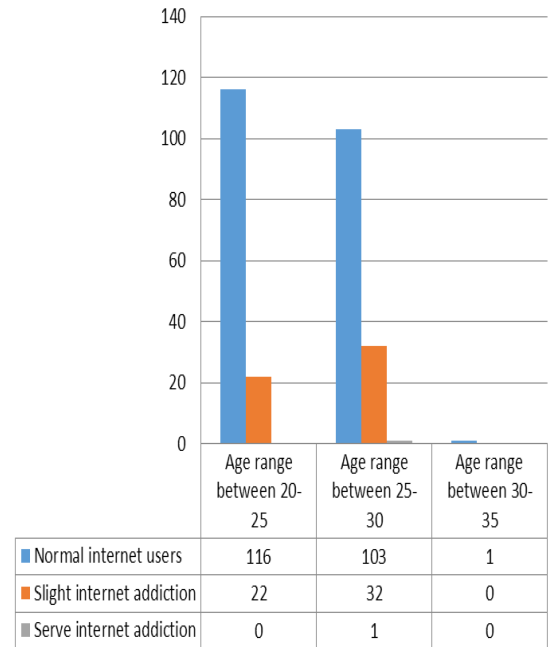


Figure 3. Age range sort by Normal internet users, slight and serve internet addiction

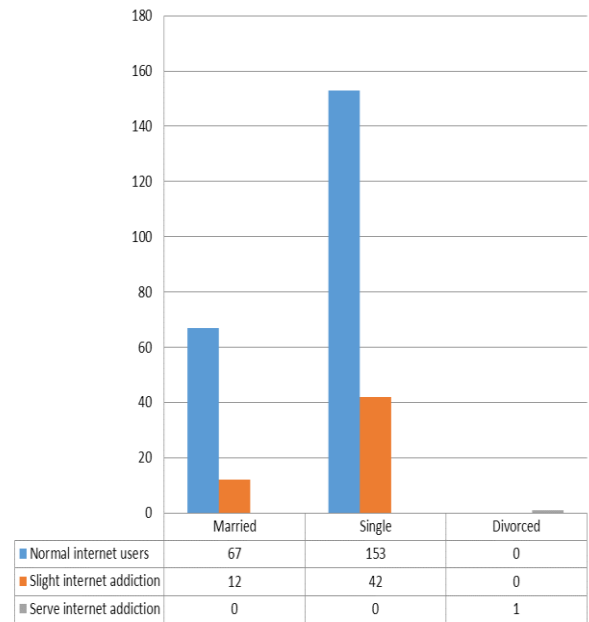


Figure 4. Marital status sort by Normal internet users, slight and serve internet addiction

The results of a general health questionnaire showed that 14 of the individuals (5.09%) had intermediate intensity and high intensity depression, 13 of the individuals (4.72%) had

intermediate intensity and high intensity social dysfunction and anxiety/insomnia and 15 of the participants (5.45%) had intermediate intensity and high intensity somatic symptoms. The average of participants score was 5.80 in somatic symptoms, 5.60 in anxiety and sleep disturbance, 6.76 in social dysfunction symptoms and 3.265 in depression symptoms. As mentioned above, 220 of the participants were normal and did not have internet addiction. According to general health analysis, the intermediate intensity somatic symptoms, anxiety/insomnia, social dysfunction and depression were observed in 8, 8, 9 and 12 of the individuals, respectively. These four groups were compared using Chi 2 test that the p value was calculated 0.61, 0.004, 0.024 and 0.012, respectively. To this end, there was a significant relation between the anxiety/insomnia, social dysfunction and depression with the no internet addiction case and there was no relation between the somatic symptoms with the slight internet addiction. The related results are shown in the Table 1.

Table1: Results of GHQ for the normal internet users

Intensity	Subscales			
	Somatic symptoms	Anxiety/insomnia	Social dysfunction	Depression
Low	212	212	211	205
Intermediate	8	8	9	12
High	0	0	0	3
Total	220			

According to this study, 54 of the participants were in the slight dependence on the internet case. The general health analysis shows that the intermediate intensity somatic symptoms, anxiety/insomnia, social dysfunction and depression were observed in 6, 4, 2 and 1 of the individuals, respectively. These four groups were compared using Chi 2 test that the p value was calculated 0.42, 0.03, 0.005 and 0.001, respectively. To this end, there was a significant relation between the anxiety/insomnia, social dysfunction and depression with the slight internet addiction case and there was no relation between the somatic symptoms with the slight internet addiction. The related results are shown in the Table 2.

Table 2: Results of GHQ for the slight dependence users on the internet

Intensity	Subscales			
	Somatic symptoms	Anxiety/insomnia	Social dysfunction	Depression
Low	48	50	52	53
Intermediate	6	4	2	1
High	0	0	0	0
Total	54			

The high intensity somatic symptoms, anxiety/insomnia, social dysfunction and depression were observed in 1 of participants. The relationship between the high intensity somatic symptoms, anxiety/insomnia, social dysfunction and depression with the serve dependence internet case was obtained by Chi 2

test. This test showed that the p value were 0.042, 0.002, 0.001 and 0.025 for the serve somatic symptoms, anxiety/insomnia, social dysfunction and depression, respectively. The related results are shown in the Table 3.

Table 3: Results of GHQ for the serve dependence users on the internet

Intensity	Subscales			
	Somatic symptoms	Anxiety/insomnia	Social dysfunction	Depression
Low	0	0	0	0
Intermediate	0	0	0	0
High	1	1	1	1
Total	1			

## DISCUSSION AND CONCLUSION

As shown in the Results section, the results obtained through data analysis carried out on 275 PhD students in Ahvaz Jundishapur University of Medical Sciences in 2015 showed that 54 (19.64%) of the students had a slight dependence on the internet and 220 (80%) were not dependent on the internet and 1 (0.36%) had serve dependence on the internet. The results of this study are different from that of Hassanzadeh (2010) done on 261 students in Sari Azad University showing 0.4% of the students were healthy, 82% had a slight dependence, 17.2% had a moderate dependence, .04% had a severe dependence on the internet [18]. The different can be attributed to the population of the case and also the year the study was done and one

may conclude that it may be due to the increase in the level of individuals' knowledge on the disadvantages of excessive internet use that the level of using the internet in a controlled way has increased. Also the results of the studies done by Danai Moghadam et al (2011) on 152 Librarianship MA students revealed that 35.5% were healthy, 35.5% had a slight dependence, 25% had a moderate dependence and 3.9% had a severe dependence on the internet. These results differ from that of ours [19]. The different can be attributed to the demographic properties of the case like age, educational level and majors. Our findings conform with that of Kiani et al (2013), Alireza Jafari et al (2011), Sadat Ahmadi et al (2012) and Solhi et al (2011). In all of the four studies the level of dependence on the internet is 10 to 20% and the level of severe dependence on the internet is  $\leq 1$ [20-23]. In our study, there was seen significant relationship between dependence on the internet and age. Our findings are different from the reported results by Kiani et al. [20] and Ghahramani et al. [21]. The lack of significant relationship between dependence on the internet and age in all the above studies is due to the low age dispersion in the population under study. In fact, in the Kiani report and Ghahramani report, all of the participants are in the age range 22 to 26 but in this study the age range of the participants is different.

In our study, there was seen a significant relationship between dependence on the internet and sex. In the study done by Sadat Ahmadi et al. [22] the dependence on the internet is much more prevalent in girls than boys. In that study, the individuals being moderately dependent on the internet are regarded as the ones at danger, and the individuals with a strong addiction to the internet are regarded as internet addicts (0.9%). Therefore we can say that the reported results by Sadat Ahmadi et al. [22] are the same as our study. The results are same as the reported



results by Ghahramani et al. [21], Ramezani et al. [23] and Dargahi [24] in which there was seen a significant relationship between dependence on the internet and sex.

According to the findings of this study, one may conclude that there exists dependence on the internet in Medicine students and, in order to prevent its damages, special attention must be paid to health and treatment considerations. For the future studies, it is recommended that bigger statistical samples be used to gather and analyze the data on dependence on the internet among students. Generally, there actual level of the prevalence of internet addiction in Iran is unknown but based on our study and most of the other ones done on the students the number is 10% to 20%. There have been provided different numbers for different societies but on average the number of internet addicts is 2.5 million people for every 50 million normal users – in other words, 5 to 10% of the internet users are internet addicts. It seems that the level of internet addiction in Iran is higher than the global average. Studying in this area requires larger population samples. It seems that the authorities should take measures in order to increase the level of individuals' knowledge and to control this issue which is very important in mental health. This can make the studies more effective.

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