

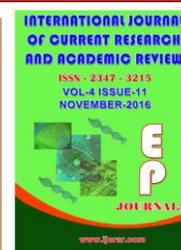


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### Investigating the Prevalence of Internet Addiction in the Medical Students in Ahvaz Jundishapur University of Medical Sciences in 2015

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#### KEYWORDS

Internet Addiction,  
Medical Student,  
Southwest of Iran,  
psychiatry.

#### A B S T R A C T

Dependence on the internet has been referred to as the modern addiction. The purpose of this study is to investigate the prevalence of internet addiction in the students of medicine in Ahvaz Jundishapur University of Medical Sciences and its relationship with demographic factors and students' educational status in 2015. This is a cross-sectional descriptive analytic study was carried out on the 138 students of externship Ahvaz Jundishapur University of Medical Sciences in 2015. In order to gather the information, two questionnaires of demographic information and educational status and Young questionnaire were used. They were completed by the students in a self-reporting way and finally the data were analyzed statistically. The analyses were all done using SPSS v. 22. In this study, 114 individuals (82.6%) did not have internet addiction, 24 individuals (17.4%) had a slight internet addiction, and severe internet addiction was not observed in any one of the participants. There was seen a significant relationship between dependence on the internet and scientific use of the internet ( $P=0.01$ ), Length of using personal weblog ( $P=0.01$ ) and length of surfing the internet ( $P=0.001$ ). There actual level of the prevalence of internet addiction in Iran is unknown but based on our study was 17.4% 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

It has been four decades since the time internet was invented and started to be used by public. It has experienced a considerable growth in such a short period of time so that

in 2010 the internet websites outnumbered the individuals all around the world. Statistics show that more time is spent on the internet than on television or satellite

(Brockman, 2011). According to the current statistics, the number of internet users in Iran has increased 25 times (Arshlo, 2006). Based on the latest researches done in Iran, most of the internet users are youngsters 35% of whom use chat rooms, 28% use online games, 30% check their emails and 25% search in the global network. The average time spent on the internet is 52 minutes a week (Alavi, 2010). Additionally, another research shows that 75.1% of students use the internet to do researches, 56.2% to read newspapers and magazines, 56.8% to play games, 65.7% to do their homework, 56.8% to chat, 53.8% to see movies, and 51.5% to gather information (Terali, 2011). Although the internet has provided a global place for the users around the world to communicate, there have been worries related the usages and the problems that may arise (Wang *et al.*, 2088). 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 (Shayegh, 2008). This disorder is referred to with different 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” (Omidvar *et al.*, 2010).

Internet addiction was a term first recommended by Young. 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 (Man, 2006). 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 (Sadock *et al.*, 2006). 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 (Dadkhah *et al.*, 2006). 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 (Mirzaian *et al.*, 2011). 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.

In spite of that, a study carried out on American students showed no difference between men and women. 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 (Hosseini *et al.*, 2012). So, the purpose of this study is to investigate the prevalence of internet addiction in the students of medicine in Jondi Medical University in Ahvaz and its relationship with demographic factors and students' educational status in 2015.

### **Methodology**

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, two questionnaires of demographic information and educational status and Young questionnaire 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.

The questionnaire of demographic information and educational status is a self-made information form containing questions about the year of entry, age, sex, marital status, place of birth, place of living, psychological problems record, internet access type, having a personal computer, reason of using the internet, the kind of websites, using social networks, downloading music and movies, surfing the net, online games, the length of using the internet during a week, the age starting to use the internet, total average, having averages lower than allowed, fail records in the academic courses, any other kind of educational failure (falling behind the classmates in courses, etc).

### **Calculation of sample size and sampling method**

Using Cochran's sample size formula and considering the fact that the number of the students of externship in Jondi Medical University in Ahvaz in 2015 is about 350 individuals with the error of  $d=0.05$  and with reference to Reference No. 17 in which the level of dependence on the internet is reported to be 0.18, the sample size is considered to be 138.

### **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 table 1 and Figure 1-3, In this study, 114 individuals (82.6%) did not have internet addiction, 24 individuals (17.4%) had a slight internet addiction, and severe internet addiction was not observed in any one of the participants. In this study, 38 of the normal individuals (33.3%) and 12 of the individuals (50%) with slight internet addiction were male, and 76 of the normal individuals (66.7%) and 12 of the individuals (50%) with slight internet addiction were female. However, there was seen no relationship between sex and internet addiction (0.123). In this study, the age starting to use the internet is  $15.38 \pm 3.2$  for normal individuals and  $16.12 \pm 3.5$  for individuals with slight internet addiction. These two groups were compared using the t-test that, considering the p value of 0.487, there was seen no relationship between dependence on the internet and the age of starting to use the internet. The marital status is shown that These two groups were compared using Chi 2 test that, considering the p value of 0.943, there was seen no relationship between marital status and dependence on the internet. In this study, 17 individuals (12.3%) of the participants accessed the internet through university facilities, 101 individuals (73.2%) through cellphones, 20 individuals (14.5%) from home or other servers. 2 individuals (8.3%) of the ones accessing the internet through university facilities and 16 (66.7%) of the ones accessing the internet through their cellphones and 6 (25%) from home or other servers showed a slight internet addiction that considering the p value of 1.0 there was seen no significant relationship between dependence on the internet and the way of accessing the internet. In this study, the length of using the internet in a week was  $20.5 \pm 11.6$  for normal individuals and  $26.16 \pm 17.3$  for the individuals dependent on

the internet. There was seen no relationship between dependence on the internet and the length of using the internet in a week ( $p=0.095$ ). The background of having psychological illnesses is shown that participants were compared using Chi 2 test that considering the p value of 0.281 there was seen no relationship between dependence on the internet and psychological illnesses. In this study, 102 (89.5%) of the normal individuals and 21 (87.5%) of the individuals with a slight internet addiction had personal computers and there was seen no relationship between dependence on the internet and personal computer. 95 (83.3%) of the normal individuals and 14 (58.3%) of the individuals with a slight internet addiction used scientific websites. These two groups were compared using Chi 2 test and considering the p value of 0.01 there was seen a significant relationship between dependence on the internet and scientific use of the internet. 97 (85.1%) of the normal individuals and 18 (75%) of the individuals with internet addiction downloaded music and there was seen no relationship between dependence on the internet and downloading music ( $p=0.248$ ). 26 (22.8%) of the normal individuals and 8 (33.3%) of the individuals dependent on the internet played online games. These two groups were compared using Chi 2 test that considering the p value (0.277) there was seen no relationship between dependence on the internet and playing online games. The length of using the personal weblog is 114 for normal individuals and 24 for the individuals dependent on the internet. These two groups were compared using the t-test that considering the p value of 0.01 there was seen a significant relationship between dependence on the internet and the length of using the personal weblog. 4 (3.5%) of the normal individuals and 2 (8.3%) of the individuals with a slight dependence on the

internet have a background of falling behind their classmates. These two groups were compared using Chi 2 test that considering the p value of 0.333 there was seen no relationship between dependence on the internet and having a background of falling behind the classmates. 3 (2.6%) of the normal people and 2 (8.3%) of the individuals with a slight dependence on the internet had averages below the allowed level. These two groups were compared using Chi 2 test that with the p value (0.224) there was seen no relationship between dependence on the internet and averages below the allowed level. In this study, 38 (33.3%) of the normal individuals and 8 (33.3%) of the individuals with a slight dependence on the internet had failed courses. These two groups were compared using Chi 2 test and with the p value of 1 there was seen no relationship between dependence on the internet and failed courses. In this study, 56 (49.1%) of the normal individuals and 11 (45.8%) of the individuals with a slight dependence on the internet lived in a dormitory. These two groups were compared using Chi 2 test and with the p value of 0.810 there was seen no relationship between dependence on the internet and living in a dormitory. In this study, 109 (95.6%) of the normal individuals and 22 (91.7%) of the individuals with a slight dependence on the internet used social networks. These two groups were compared using Chi 2 test and with the p value of 0.452 there was seen no relationship between dependence on the internet and using social networks. In this study, 15 (13.2%) of the normal individuals and 7 (29.2%) of the individuals with a slight dependence on the internet had weblogs. These two groups were compared using Chi 2 test and with the p value of 0.068 there was seen a relationship between dependence on the internet and personal weblogs. In this study, 53 (46.5%) of the normal individuals

and 16 (66.7%) of the individuals with a slight dependence on the internet surfed the internet. These two groups were compared using Chi 2 test and with the p value of 0.072 there was seen a relationship between dependence on the internet and personal weblog. In this study, the average length of surfing the internet was 1/07 for normal individuals and 2/70 for the individuals with a slight dependence on the internet. These two groups were compared using the t-test and with the p value of 0.001 there was seen a significant relationship between dependence on the internet and surfing the internet.

### **Discussion and conclusion**

As shown in the Results section, the results obtained through data analysis carried out on 138 PhD students in Ahvaz Jundishapur University of Medical Sciences in 2015 showed that 24 (17.42%) of the students had a slight dependence on the internet and 114 (82.6%) were not dependent 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. 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 no significant relationship between dependence on the internet and age. Our findings conform with that of Kiani *et al.*, and Ghahramani *et al.*, 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, all the participants in our study aged 22 to 26.

In our study, there was seen no significant relationship between dependence on the internet and sex. In the study done by Sadat Ahmadi *et al.*, the dependence on the internet is much more prevalent in girls than boys but there was seen no difference in the percentage of users at danger. 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 results of that study are the same those of ours.

The results are different from that of Kiani *et al.*, Hosseini, Yaghmayi *et al.*, Ghahramani *et al.*, in which there was seen a significant relationship between dependence on the internet and sex. Also, on the length of using the internet to download music, play online games and use social networks,

our results conform to that of Jackson *et al.*, but not with that of Kiani *et al.*, and Ghahramani *et al.*, The reason can be that the population in our study was composed of Medicine students who due to their courses have less time to download music, play online games and use social networks. Also, most of them had personal computers and they cannot be compared to the one with no personal computers, which accounted a small part of our population.

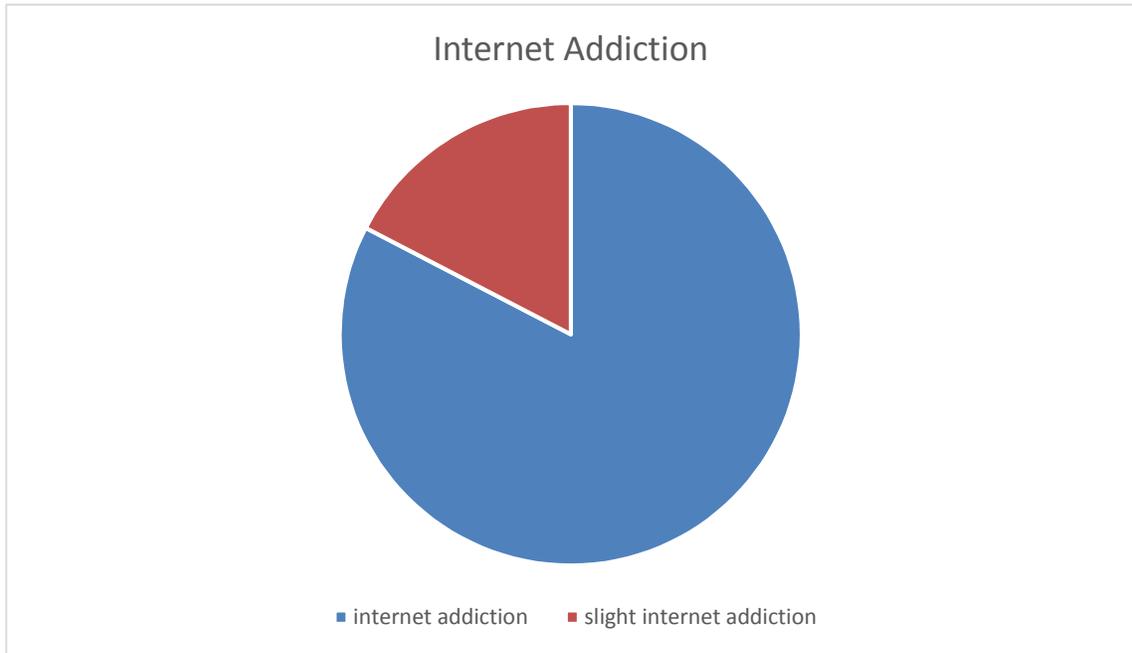
On the average number of hours spent on the internet, there was seen no significant relationship between dependence on the internet and the average number of hours spent on the internet in the study done by Sadat Ahmadi *et al.*, conforming to our study. In the study done by Kiani *et al.*, there was seen a significant relationship between dependence on the internet and the average number of hours spent on the internet which is not the same as our results and can be due to the fact that in our study the age of starting to use the internet is  $15.3 \pm 3.2$  for the normal individuals and  $16.1 \pm 3.5$  for individuals with a slight dependence on the internet that considering the p value of 0.4 there was seen no significant relationship between dependence on the internet and the age of starting to use the internet.

In the study done by Ghahramani *et al.*, there was seen no significant relationship between dependence on the internet and the age of starting to use the internet. The lack of statistical relationship between the age of starting to use the internet and dependence on the internet in our study can be because the average age of starting to use the internet in the two groups of normal individuals and the individuals with a slight dependence on the internet is so close to each other and all of them have started using the internet in nearly the same age.

**Table.1**

Table 1. Patients characterizations and analysis				
Variable	Sub-Variable	Internet Addiction		P-Value
		Without internet addiction	slight internet addiction	
Gender	Male	38	12	0/123
	Female	76	12	
Age	Age	15/38±3/2	16/12±3/5	0/487
Marital Status	Single	105	9	0/943
	Married	22	2	
Access to Internet	university	15	2	0/132
	Cellphones	85	16	
	home or other servers	14	6	
length of using the internet	In a week	20.5±11.6	26.16±17.3	0.095
Psychological History	Psychological History	3	0	0.281
personal computers used scientific websites	Have	102 (89.5%)	21 (87.5%)	0/781
	used scientific websites	95 (83.3%)	14 (58.3%)	
downloaded music	downloaded music	97 (85.1%)	18 (75%)	0.248
online games	played	26 (22.8%)	8 (33.3%)	0.277
personal weblog	Length of using	0/246	1/083	<b>0.01</b>
falling behind their classmates	falling	4 (3.5%)	2 (8.3%)	0.333
Averages	below the allowed level	3 (2.6%)	2 (8.3%)	(0.224)
failed courses	failed courses	38 (33.3%)	8 (33.3%)	1
lived in a dormitory	dormitory	56 (49.1%)	11 (45.8%)	0.810
social networks Weblogs surfed the internet	Used	109 (95.6%)	22 (91.7%)	0.452
	Have	15 (13.2%)	7 (29.2%)	
	surfing the internet	surfing	53 (46.5%)	
surfing the internet	Length	1/07	2/70	<b>0.001</b>

**Fig.1** Prevalence of Internet addiction



**Fig.2** Gender difference sort by without and slight internet addiction

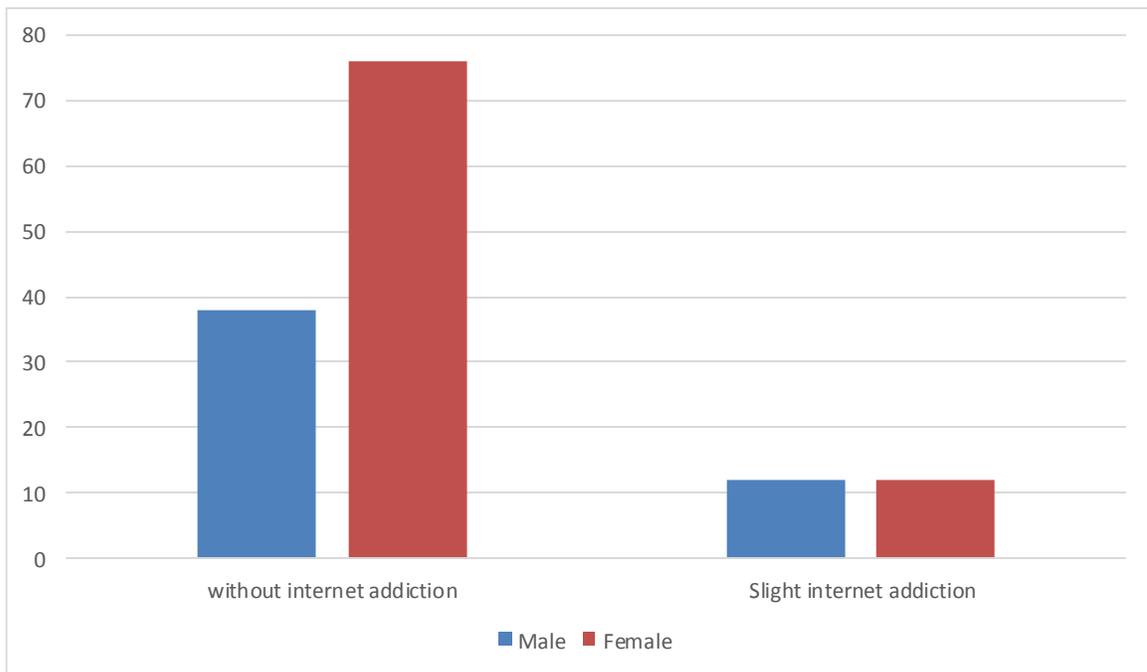
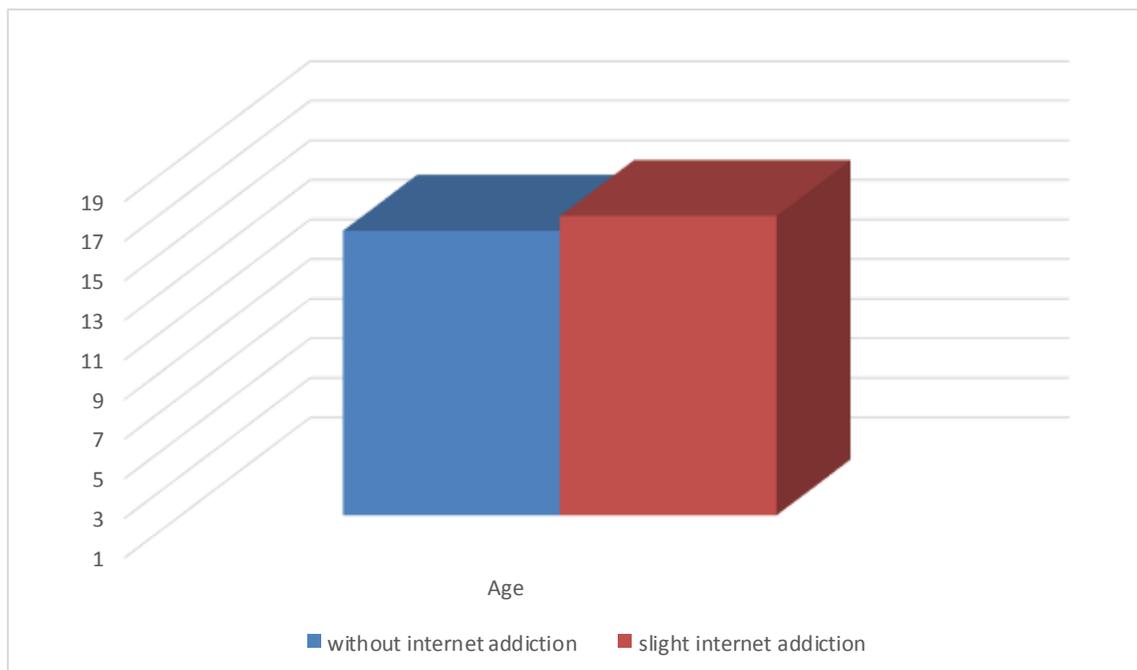


Fig.3 Age difference sort by without and slight internet addiction



On using the scientific websites, in the study done by Kiani *et al.*, Dargahi *et al.*, there was seen a significant relationship between dependence on the internet and using the scientific websites, conforming to our findings.

In the study done by Ghahramani *et al.*, there was seen no significant relationship between dependence on the internet and research activities and scientific websites, not conforming to our findings. In our study, there was seen no significant relationship between dependence on the internet and having a personal weblog and website. But there was seen a significant relationship between dependence on the internet and the number of hours using the personal weblog or website in a week. Also, there was seen a significant relationship between dependence on the internet and the number of hours spent on the internet. The studies done by Kiani *et al.*, Jackson, Ervin, Gardner and Smidt, conform to our findings. 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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