

## Studying the Prevalence of the Internet Addiction in Iranian Students: A Review Study

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**Abstract:** Despite the benefits of the internet, its excessive and misplaced use can bring about the risk of addiction. Several studies have examined its prevalence and factors associated with it in Iranian students in Iran and have obtained different results. So far, no review or meta-analysis studies are conducted in this regard in Iran. This review study was conducted to investigate the studies related to the prevalence of the internet addiction in Iranian students. By searching studies via Google with the Persian keywords internet addiction, students, Iran and relevant English keywords, about 85 studies were found among which 48 articles lacked the inclusion criteria and four articles were repetitive, thus eventually, 33 articles with inclusion criteria were examined. No time limit was imposed in the search for studies. The results showed that the overall prevalence of the internet addiction in Iranian students is in range of 5.7-67.1%. Moreover, the results showed that the prevalence of internet addiction in boys compared to girls is higher. The results also showed that internet addiction has comorbidity with mental disorders and an inverse relationship was observed between the internet addiction with mental health and self-esteem. All studies were cross-sectional and no longitudinal studies have been done in this field in Iran. The prevalence of the internet addiction among Iranian students in studies conducted in different regions of Iran has a lot of diversity and disparity. It seems that several factors such as methodological variety, determined Yang Internet Addiction Test (YIAT) cut-off score, cultural factors and the population studied are involved and a variety of variables such as demographic and psychosocial variables associate with it. However, it is not yet clear whether internet addiction leads to psychosocial problems or otherwise addiction to the internet is caused by them or a third factor explains the relationship between them. Larger studies, especially longitudinal studies to determine the exact nature of internet addiction and its relationship with other variables seem necessary.

**Key words:** Internet, addiction, students, Iran, study

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### INTRODUCTION

In the last decade, internet usage has become a growing phenomenon. Great fame, access and its frequency of use have led to many reports on its negative consequences in case of excessive use.

In their systematic review on the relationship between internet addiction and comorbid psychopathology, Carli *et al.* (2012) found that in the majority of studies there is a relationship between internet addiction and depression, anxiety, attention-deficit hyperactivity disorder and obsessive compulsive symptoms of hostility-aggression. However, depression and attention deficit hyperactivity disorder had the most significant and stable relationship with internet

addiction. Internet addiction is characterized by preoccupation, urges, excessive or uncontrolled behaviors involving the use of computers and internet access that lead to the injury or disturbance. Several studies in the United States of America and Europe indicate the prevalence of 1.5-8.2%, although, the evaluation questionnaires used to diagnose internet addiction are different in different countries. In their systematic review, Cass concluded that first, there is no gold standard to classify internet addiction as 21 different assessment tools have been determined and all of them have adapted formal criteria from substance use disorders or pathological gambling. None of them is associated with addiction diagnosis, time spent online or its problems and only few of them are related to these cases. Second, due

to the use of different assessment tools and cut-off scores, the prevalence reported is in the range from 0.8% in Italy to 22.7% in Hong Kong. Third, addiction to the internet is associated with a number of socio-demographic factors, the use of the internet and psychosocial factors and symptoms and comorbid disorders in adolescents.

Many studies on the prevalence of the internet addiction have been conducted in different populations in Iran and different results are obtained. Nevertheless, despite this, no review studies have been carried out in this case. Thus, this study was designed with the aim of evaluating the prevalence of the internet addiction and its related factors in Iranian students.

## MATERIALS AND METHODS

Studies carried out in Iran in the field of internet addiction among students and published in domestic or foreign magazines either in Persian or in English, regardless of the time limit were searched with the keywords of the internet addiction, university students and Iran both in English and Persian using google search engine.

**Inclusion and exclusion criteria:** In this review study, the inclusion of articles was done based on inclusion and exclusion criteria.

Inclusion criteria included study should be on students studying in universities in Iran, reporting the prevalence of internet addiction data in the study and using YIAT to gauge internet addiction. Exclusion criteria were the impossibility of access to full text or lack of providing necessary information in the abstract if the article full text is not available, failure to provide data on the prevalence of internet addiction, studies' not being related to the subject and research population and the country where the research is conducted. By reviewing the studies via google with the mentioned keywords, about 85 studies were found among which 48 articles lacked the inclusion criteria and four articles were repetitive, thus eventually 33 articles with inclusion criteria were examined. No time limit was imposed in the search for studies.

## RESULTS AND DISCUSSION

The studies were conducted between 2008 and 2015. Among 33 eligible articles, 10 articles were in English and 23 were Persian. The total sample size in 33 studies reviewed was 11847 people. The lowest sample size was 87 subjects in the study by Vahidifar *et al.* (2013) and the highest was 1,500 related to the study by Hosseini Beheshtian. All studies were cross-sectional. The

results showed that the overall prevalence of the internet addiction in Iranian students is in the range of 5.7 and 67.1%. The prevalence of moderate to high addiction to the internet (scores 50-100 in YIAT) was from 5.7% in students of Guilan University of Medical Sciences to 67.1% among students at the University of Zabol (Miri and Jenaabadi, 2015). The prevalence of severe internet addiction (scores 80-100 in YIAT) was from zero percent among students of Guilan University of Medical Sciences (Asiri *et al.*, 2013) and Azad University of Shahrkord (Karimzadeh, 2015) to 30% among students of University of Isfahan. The results also showed that the prevalence of internet addiction in boys is higher than in girls. The results also showed that the internet addiction has comorbidity with mental disorders and an inverse relationship was observed between internet addiction with mental health and self-esteem. All studies were cross-sectional and no longitudinal study has been done in this field in Iran (Table 1 and 2).

Overall, 33 eligible studies with a sample size of 11847 had been conducted from 2008-2015. The total prevalence of internet addiction (mild and higher dependence on the internet with scores of 50-100 in YIAT) in Iranian students was in the range 5.7-67.1% showing large variety. While searching with Google search engine it was found that no systematic and meta-analytical reviews have been done in this field in Iran to compare with the present study. It should be noted that while searching, systematic reviews were found on this topic abroad. In their systematic review of studies conducted in the United States of America and Europe, Weinstein and Lejoyeux (2010) reported that the prevalence of the internet addiction has been in the range 1.5-8.8. They see these differences in the prevalence due to different diagnostic criteria and tools used for measuring internet addiction. Moreover in his review of the relatively offline studies on adolescents in Asian countries of China, South Korea, Greece, Norway and Iran, Aboujaoude (2010) reported the prevalence rates of between 2 and 11%. He sees these differences in the prevalence due to different diagnostic criteria and tools used for measuring internet addiction. In their study using YIAT tool to measure the prevalence of the internet addiction in six Asian countries, Mak *et al.* (2014) found that among these six Asian countries studied, the Philippines (51%) and Japan (48%) have the highest prevalence rates. The prevalence of problematic use of the internet and internet addiction in China are 17 and 2% in Hong Kong 32 and 3% and in Korea 14% (minimum score of 70 in IAT), respectively. They concluded that the prevalence of internet addiction in Asian countries is higher than in European countries. Although, the estimated prevalence in the present review study (minimum 5.7 and maximum 67.1% among students of

Table 1: The specification of the studies included in the study

First author	Location University	Sample size	The prevalence of internet addiction, according to the cut-off score IAT
Pirzadeh	Isfahan Medical Sciences	123	Normal user (under 50) = 81.2, addicted user (50-100) = 18.2
Shahbazirad	Kermanshah Medical Sciences	200	Medium (39-20) = 68, high = (40-69) = 17.5, very high (70-100) = 5
Maher <i>et al.</i> (2013)	Tehran University of Medical Sciences	80	Normal user (0-49) = 73.8, addicted user (50-100) = 26.2
Bahreiniyan	Azad University of Birjand	408	Normal (20-49) = 59.3, at risk (50-70) = 38.5, addicted (80-100) = 2.2
Mirzaiyan	Mazandaran University	100	Low = 48, moderate = 25, high = 27
Miri and Jenaabadi (2015)	Zabul Medical Sciences	252	Normal user (0-49) = 32.9, addicted user (50-100) = 67.1
Ansari <i>et al.</i> (2016)	Zahedan Medical Sciences	380	Normal user (0-49) = 74.7, addicted user (50-100) = 25.3
Hasanzadeh <i>et al.</i> (2014)	Azad University of Sari	261	Normal (19-0) = 0.4, mild (20-49) = 82, severe (50-79) = 17.2, very severe (80-100) = 0.4
Sepehriyan	Universities of Urmia	330	Non-user (0-20) = 27.3, normal users (20-49) = 33.9, at risk (50-79) = 20.9, severe (80-100) = 17.27
Jalilnejad	University of Esfahan	330	Non-user (0-20) = 27.9, normal users (20-49) = 33.9, at risk (50-79) = 20.9, severe (80-100) = 17.27
Rastgar <i>et al.</i> (2015)	Kharazmi University	156	Normal (20-39) = 39.74, mild (40-60) = 31.41, severe = (70-100) = 28.74
Hadad Ranjbar	Valiasr Rafsanjan	250	Normal user (0-40) = 60.8, addicted user (>40) = 39.2
Hosseini Beheshtian	State universities in Tehran	1500	At risk = 10.8, addicted = 8.9
Mazloomny <i>et al.</i> (2015)	Shahid Sadoughi Medical Sciences and PNU of Yazd	483	Normal user = 85, addicted user = 15
Asiri <i>et al.</i> (2013)	Medical Sciences of Guilan	583	At risk (20-49) = 44, mild (50-79) = 5.7, severe (80-100) = 0
Seghati <i>et al.</i> (2015)	Rasht Azad University	150 girls	Mild (50-79) = 38.5, addicted (80-100) = 2.2
Kamran	Lorestan Medical Sciences	368	Mild = 63.3, severe = 7.3
Alavi <i>et al.</i> (2012)	Isfahan Universities	250	The overall prevalence = 15
Mohseni Tabrizi	University of Esfahan	337	Low = 19, mean = 51, high = 30
Nasiri <i>et al.</i> (2011)	Universities of Shahroud and Damghan	304	Low = 16.8, mild = 22.7, high = 46.7, severe = 13.8
Fathi	University of Tehran	380	Normal (0-39) = 28.2, at risk (40-69) = 59.2, addicted (70-100) = 12.6
Kayani <i>et al.</i> (2013)	Tehran Universities of Medical Sciences	330	Natural (20-49) = 82.3, mild (50-79) = 16.7, Severe (80-100) = 1
Begay	Arak Medical Sciences	426	Mild (50-79) = 8.1, severe (80-100) = 2.8426
Ataee <i>et al.</i> (2014)	Hamedan Medical Sciences	300	Mild (50-79) = 37.4, severe (80-100) = 2.2
Ataea Nadushan	Medical Sciences of Qom	250	Mild (20-49) = 90, moderate (50-79) = 9.6, severe (80-100) = 0.4
Rezai	Ardabil, Shahid Beheshti, Kermanshah universities of Medical Sciences	346	At risk = 43.93, addicted = 2.9
Solhi <i>et al.</i> (2014)	Tehran University of Medical Sciences	150 boys	Mild (50-70) = 35.33, severe (80-100) = 10
Karimzadeh (2015)	Azad of Shahrekord	345	Mild = 16.9, High = 0
Zanjani and Agah (2014)	PNU Semnan Province	592	Mild (50-79) = 23.8, severe (80-100) = 1.8
Bahri <i>et al.</i> (2011)	Gonabad Medical Sciences	400	At risk (50-70) = 21.5, addicted (80-100) = 9.5
Ahmadi	Allameh Tabatabaei	667	At risk (40-69) = 14.5, addicted (70-100) = 0.9
Vahidifar <i>et al.</i> (2013)	Birjand University of Medical Sciences	87	A little addicted (50-79) = 18.6, severely addicted (80-100) = 2.3
Fallahi (2011)	Shiraz University	500	At risk (40-69) = 31.2, addicted (70-100) = 13.2

Guilan University of Medical Sciences at the University of Zabol respectively) seems higher compared to prevalence rates obtained in other Asian countries, its high range (5.7 and 67.1%) may be due to differences in grading criteria for normal users, users with mild, moderate and severe addiction based on YIAT and non-operational definition of mild, low, less, medium, at risk, high and severe in some of the studies reviewed in this study (Table 1), the use of different tools to measure internet addiction, the quality of the selection of participants, population, sample size and methodological issues in the studies reviewed in this study as well as other demographic, psychosocial, cultural and internet access variables.

## CONCLUSION

The prevalence of internet addiction among Iranian students in studies conducted in different regions of Iran has a lot of diversity and disparity. It seems that several factors such as methodological variety, Yang Internet Addiction Test (YIAT) cut-off score determined, cultural factors and the population studied are involved and a variety of variables such as demographic and psychosocial variables are connected to it. However, it is not yet clear whether internet addiction leads to psychosocial problems or otherwise addiction to the internet is caused by them or a third factor explains the relationship between them. Larger studies, especially

longitudinal studies to determine the exact nature of internet addiction and its relationship with other variables seem necessary.

### LIMITATIONS

Searching studies was not an extensive one from all sources, so it is possible that there have been studies not studied in this review which is a limitation of this study. In this review, only those studies were included that had used YIAT to measure internet addiction which limits the generalized points. Moreover, the study was not a systematic review or meta-analysis. Therefore, due to the heterogeneity of the studies it is suggested that a meta-analysis with random effects be conducted in this regard.

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