# Internet and Mobile Phone Addiction among High School Students: A Cross Sectional Study from Iran

Nastaran Norouzi Parashkouh[1], Leila Mirhadian[2],
Abdolhossein EmamiSigaroudi[3], Ehsan kazemnezhad leili[4],
Fatemeh Hasandoost[5], Hossein Rafiei[5]

[1.] *MSc of Nursing, Instructor and Faculty Member, Department of Nursing, Faculty of Nursing&Midwifery Ramsar, Babol University of Medical Sciences, Babol, Iran.*

[2.] *Department of Nursing, Instructor and Faculty Member, School of Nursing and Midwifery, University of Medical Sciences, Rasht, Iran.*

[3.] *Department of Nursing, Assistant Professor and Faculty Member, School of Nursing and Midwifery, Guilan University of Medical Sciences, Rasht, Iran.*

[4.] *Department of Biostatistics, Assistant Professor and Faculty Member, School of Nursing and Midwifery, Guilan University of Medical Sciences, Rasht, Iran.*

[5.] *Department of Nursing, Instructor and Faculty Member, School of Nursing and Midwifery, Qazvin University of Medical Sciences, Qazvin, Iran.*

**Correspondence to:** Leila Mirhadian, LM30075@yahoo.com

***Abstract:***

***Background and aims:*** *Addiction to internet and mobile phone may be affecting all aspect of student's life. Knowledge about prevalence and related factors of internet and mobile phone addiction is necessary for planning for prevention and treatment. This study was conducted to evaluate the prevalence of internet and mobile phone addiction among Iranian students.*

***Methods:*** *This cross sectional study conducted from Jun to April 2015 in Rasht Iran. With using stratified sampling method, 581 high school students from two region of Rasht in North of Iran were recruited as the subjects for this study. Data were collected with using demographics questionnaire, Cell phone Overuse Scale (COS), and the Internet Addiction Test (IAT). Analysis was performed using Statistical Package for Social Sciences (SPSS) 17 21 version.*

***Results:*** *Of the 581 students, who participate in present study, 53.5% were female and the rest were male. The mean age of students was 16.28±1.01 years. The mean score of IAT was 42.03±18.22. Of the 581 students, 312 (53.7%), 218 (37.5%) and 51 (8.8%) showed normal, mild and moderate level of internet addiction. The mean score of COS was 55.10±19.86.Of the 581 students, 27(6/4%), 451(6/77) and 103 (7/17) showed low, moderate and high level of mobile phone addiction.*

***Conclusion:*** *according to finding of present study, rate of mobile phone and internet addiction were high among Iranian students. Health care authorities should pay more attention to these problems.*

***Keywords:*** *Internet addiction, mobile phone addiction, students, developing country, Cell phone Overuse Scale, the Internet Addiction Test*

## I. Introduction

According to the internet society report, internet user number reached to 3 billion peoples around the world [1]. The internet is a very useful tool in all areas of science, business, education, culture and politics [2]. However excessive and misuse of this useful tool can cause internet addiction. According to Shaw & Black "internet addiction is excessive or poorly controlled preoccupations, urges or behaviors regarding computer use and internet access that lead to impairment or distress" [3]. In a meta-analysis study in 2014 that includes 80 reports with 89,281 participants, from 31 nations across seven world regions, the global prevalence of internet addiction reported about 6% [4]. Internet addiction can affect all aspect of person life negatively includes sleep, nutrition, physical activity and social function [5, 6]. Internet addiction also affects person academic and professional progress and family relationships negatively [5, 6]. In recent years, mobile phone plays an essential role in communications throughout the world, because of cost of cell-phone use drops and the functionality of these devices expands [7, 8]. In addition to use of mobile phone for communication, people used cell phone for many features such as games, access to the Internet and social networks, messaging, videos, multimedia, calculator, alarm clock, and navigation [8, 9]. In a review article published in 2012 by Pedrero Pérez et al., prevalence of mobile phone addiction reported from 0-38%, depending on the scale used and the characteristics of the population studied [10]. Mobile phone addiction is one of the forms of compulsive use of "a mobile

phone" by adolescents globally that similar to internet addiction, problematic use of them is on the increase and has caused serious problems in many areas [11]. Symptoms such as preoccupation with the device, excessive use with loss of control, use in socially inappropriate/dangerous situations, symptoms such as feelings of anger, tension, depression when the phone/network inaccessible, ringer anxiety, constant worry that battery will drain, signs of craving, need for new better phone, more software or more hours of use, poor achievements and social isolation in one person may be related to her/his addiction to mobile phone [12].

Students are one group that is at high risk of internet and cell phone addiction. Similar to students in the entire world, the majority of the Iranian students have a mobile phone and using internet. However study about internet and cell phone addiction is very limited in our country Iran. Therefore this study was conducted to evaluate the prevalence of internet and mobile phone addiction among Iranian students.

## II. Methods

This cross sectional study conducted from Jun to April 2015 in Rasht Iran. With using stratified sampling method, 581 high school students from two region of Rasht in North of Iran were recruited as the subjects for this study. Participation in the study was entirely voluntary and full confidentiality of the responses was reassured after clear explanation of the objectives of the study. Informed consent was taken from all the participants. Ethical approval was obtained from research center of Guilan University of medical science prior to the collection of any data. We also obtained written permission from the institute authorities before interacting with the students.

In this study data were collected with using demographics questionnaire, Cell phone Overuse Scale (COS), and The Internet Addiction Test (IAT).

### Demographics questionnaire
This questionnaire includes student's age, sex, education level, number and total hours of mobile phone and internet.

### Cell phone Overuse Scale (COS)
Mobile phone addictions measured with using Cell phone Overuse Scale (COS). This scale was developed by Jenaro et al. in 23 items [13].The Persian version of COS was normalized by Golmohammadian and Yasaminejad in Iran. They reported the test reliability as 0.90 using Cronbach's alpha for COS. The reliability of the scale was calculated as r = 0.71 by scale retest that was significant in 0.001 [14].

### The Internet Addiction Test (IAT)
The Internet Addiction Test (IAT) is the first valid and reliable measurement of internet addiction. This 20-item questionnaire was designed by Kimberley Young [15]. It measures internet addiction in three level; mild, moderate and severe. Each answer is scored on a Likert scale from 1 to 5. In a way that, score 1= rarely, 2= occasionally, 3= frequently, 4= often, and 5= always. The final score is obtained by summing the scores of all questions. The higher score showed a greater level of internet addiction. The total score between 20 and 49 represents a mild addiction, 50-79 represents moderate addiction, and 80-100 represents severe addiction. Validity and reliability of the Persian version of this questionnaire among Iranian students determined in good level (r=0.78, 0.81) (r=0.74, P<0.01 [16].

### Statistical analysis
Analysis was performed using Statistical Package for Social Sciences (SPSS) 21version. The normality of data was determined with using Kolmogorov-Smirnov tests. Descriptive statistics (mean and standard deviation), spearman correlation coefficient test, $\chi 2$ test and logistic regression were used for data analysis. Probability of significance was set at 0.05.

## III. Results

### Demographic characteristics
Of the 581 students who participate in present study, 53.5% were female and the rest were male. The mean age of students was 16.28±1.01 years.

### Internet addiction
The mean years of internet usage by students was 3.03±2.33 years. The mean score of IAT was 42.03±18.22. Of the 581 students, 312 (53.7%), 218 (37.5%) and 51 (8.8%) showed normal, mild and moderate level of internet addiction. No case of sever Internet addiction was seen. The mean score of IAT in male and female students were 45.55±18.34 and 38.99±17.58 respectively. According to the results of independent t test

this difference between groups were statistically significant (p=0.001). According to finding of present study, a positive and significant correlation exists between mean score of IAT and students age (r=0.219; p=0.001).

**Mobile phone addiction**

The mean years of mobile phone usage by students was 4.82±2.14 years. The mean score of COS was 55.10±19.86.Of the 581 students, 27(6/4%), 451(6/77) and 103 (7/17) showed low, moderate and high level of mobile phone addiction. The mean score of COS in male and female students were 54.89±21.55 and 55.29±18.32 respectively. According to the results of independent t test this difference between groups were not statistically significant (p=0.547). According to finding of present study, a positive and significant correlation exists between mean score of IAT and students age (r=0.228; p=0.001).

## IV.    Discussion

Addiction to internet and mobile phone may be affecting all aspect of student's life. Knowledge about prevalence and related factors of internet and mobile phone addiction is necessary for planning for prevention and treatment. The purpose of this research was to determine the prevalence and related factors of internet and mobile phone addiction among Iranian students. According to finding of present study about 45% of students in our study reported some level of internet addiction. Results also showed that a high number of students have addiction to mobile phone. Student's age and sex also affect rate of internet and mobile phone addiction.

Problematic use of the Internet by students is a newly emerging disorder. Previous studies in our country showed similar finding. In one study in 2014, Hashemian et al., examined the prevalence of internet addiction among university students in Iran with using similar questionnaire.  In consistent with finding of present study, Hashemian et al., study, showed that 39.6% and 4.1% of students have mild and moderate level of internet addiction respectively [17]. In other study in 2014, Iranian authors examined the prevalence of internet addiction in Iranian high school students. Rate of internet addiction reported by them were about 20 percent [18]. Although results of present study were similar to other previous studies in our country, however results of previous studies in other countries showed different finding. In one study in this regards, Marahatta et al., examined prevalence of internet addiction among students in Nepal. The rate of internet addiction reported by Marahatta et al., was significantly high. They reported that 120 (50.8%), 96 (40.7%) and 3 (1.3%), of students have mild, moderately and severe level of internet addiction respectively [19]. Different between finding of present study and Marahatta et al., could be related to different in participant's demographic and cultural factors culture (i.e. Family dependency, recreational facilities and habits) in two studies. In other study in this regards, Deng et al., examined prevalence of internet addiction disorder in middle school students in China. The overall prevalence of internet addiction disorder in middle school students of Deng et al., was 5.52% that is lower than finding of present study [20]. Different between findings of present study and findings of Deng et al., study could be related to different in instruments used in present studies and Deng et al., study. Deng et al., used a self-designed ten-item diagnosis tool and we used IAT scale [20].

Mobile phone use has been growing dramatically over the last decade among Iranian students. Misuse of this useful devise may cause addiction and affect person negatively. Results of present study revealed that a high number of Iranian students have addiction to mobile phone. Previous study in our country and other countries showed similar finding. In one study in this regards in 2015, Nikhita et al., examined the prevalence of mobile phone addiction among Indian secondary school adolescents. Mobile phone dependence was found in 31.33% of sample students in Nikhita et al., study [12]. In another study in this regards, Haug et al., surveyed indicators of smartphone use, smartphone addiction, and their associations with demographic and health behaviour-related variables in 1519 young people in Switzerland. Smartphone addiction prevalence reported about 17 percent by Haug et al., [21]. They also reported that factors such as longer duration of smartphone use on a typical day, a shorter time period until first smartphone use in the morning and reporting that social networking was the most personally relevant smartphone function increased risk of smartphone addiction. In other study in 2007, Sánchez-Martínez et al., examined prevalence of cell phone addiction and factors associated with cell phone use in adolescents in the community of Spain. In total, 96.5% of participants in Sánchez-Martínez et al., study had their own cell phone (80.5% had one, and 15.9% had two or more). More than half of them take it to school and 46.1% keep it on during class; 41.7% use it intensively. Rate of cell phone dependence was 20% in Sánchez-Martínez et al., study [22].

Similar to finding of present study, most previous studies in have demonstrated that young male are more likely than any other demographic group to use internet. Results of one study in this regards by Amidi Mazaheri & Rahmati Najarkolaei showed that prevalence of internet and cell phone addiction were higher among male gender and age less than 25 [23]. Results of other study entitled "internet addiction and its predictors in Guilan medical sciences students, 2012" by revealed significant difference between students age and gender [24]. (Asiri).  Also results of Ko et al., study showed a male predominance in the rate of internet addiction [25]. (Ko). Higher rate of addiction among male with higher age may be related to easy excess to

internet and cell phone of this group of students in compared to other groups. Also male students as compared to female students, use more internet and cell phone.

## V.    Conclusion

There has been an increasing trend of use of mobile phones and internet among students especially in developing countries that may be increase internet and mobile phone addictions. Present study revealed that rate of internet and mobile phone addiction among Iranian students is high. Community health care authorities should pay more attention to these problems. Further study in this regards is recommended. Also interventional study recommended for examining effect of different interventional methods for prevention and treatment of internet and mobile phone among students.

## Limitation

One of the limitations of this study is that data collection was based on self-reported questionnaires which are prone to recall bias.

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