

## **The Association of Internet Addiction with Academic Achievement, Emotional Intelligence and Strategies to Prevention of them from Student's Perspectives**

**Azizollah Arbabisarjou**

Children and Adolescents Health Research Center, Zahedan University of Medical Science, Zahedan, Iran

**\*Enam Alhagh Charkhat Gorgich**

Student Scientific Research Center, Zahedan University of Medical Sciences, Zahedan, Iran  
Tel: 9809158474229

**\*Corresponding Author:** Enam.gorgich@yahoo.com

**Sanam Barfroshan**

Student Scientific Research Center, Zahedan University of Medical Sciences, Zahedan, Iran

**Gholamreza Ghoreishinia**

Student Scientific Research Center, Zahedan University of Medical Sciences, Zahedan, Iran

### **Abstract**

*Today, the Internet is an integral part of human life. That's why researchers from different fields are attracted of its usage implications. This study aimed to investigate the association of internet addiction with academic achievement, emotional intelligence and strategies to the prevention of them from student's perspectives. This research is a cross-sectional study which it has conducted on students of Zahedan University of Medical sciences in Zahedan, Iran in 2014-2015 semester. A total of 600 students were included in the study by stratified random sampling. Data were collected through self-assessment and standard Young internet addiction test (1998) and emotional intelligence education of Petrides & Furnham (2001) questionnaires. The data was analyzed by descriptive statistics, independent t-test and Pearson correlation, performed by the SPSS version 21. The mean age of participants was  $21.13 \pm 1.61$ . The majority of students were male 324 (54%). The results had shown that 12.5% of students suffered from internet addiction. The most important way for prevention of internet addiction from student's perspectives raise the awareness about internet addiction and its effects through holding classes (87.83%). Also, a negative correlation was found between internet addiction with academic achievement ( $p=0.001$ ) and emotional intelligence ( $p=0.012$ ). There was a significant relationship between internet addiction and academic achievement with the gender ( $p=0.019$ ) of students. The results of this study had shown that teaching the appropriate usage of internet for education and research can be helpful.*

**Keywords:** Internet addiction, Educational Achievement, Emotional Intelligence, Prevention, Students.

## **Introduction**

Internet addiction (IA) is the one of the concerning matters today. The internet is a recent technology(1). The cause of the fast speed of internet, its ease of access and the ability to remain has unknown on the internet every day more people are interested in it(2-4). Cause of expanded usage of internet in communication, commercials, science and recreational it has become a necessity among human's life especially university students today, that students use it for both educational and recreational purposes. So that internet affected human's personal and social life effectively (5-7). The number of internet users is drastically increasing, as in 2011 it was reported 2 million users worldwide(8). The number of internet users in Iran has grown 25 times. Studies conducted in this field had shown that most users were youth age groups(1). According to the reports of research centers of universities, the most number of IAs around the world are related to America, South Africa, South Korea, Norway, the UK, China and Cyprus(9). It's undeniable that internet affected different areas such as social interactions, cultural fields, economics, informational, scientific and jobs and even different parts of our today's life such as education and shopping(10). However the excessive use of that can have bad results on social and individual life and even threaten the physical and mental health(11, 12). IA is an individual and social harm. It is also known as the behavioral dependency, pathological use of the Internet and addiction to cyberspace(13). IA is defined as the inability to control Internet usage, which ultimately leads to psychologically, social, educational and job problems in people lives(14, 15). IA was proposed for the first time in 1995 by Ivan Goldenberg. He introduced it as a behavioral disorder with symptoms of addiction to drugs and alcohol(16, 17). For the diagnosis of IA, Young focused on three factors including individual factors such as Low self-esteem, depression and lack of communication skills. Psychosocial factors such as Poor family support and poor communication between family members and Internet related factor such as Long-term use and easy access to the Internet(18). The studies conducted in this field found that IA patients have slept disorders, physical disorders, an academic failure in school, depression, anxiety, aggression and phobias(19, 20). Davis stated in his study that people who have excessive use of internet face educational, career and interpersonal problems. They get oblivious to friends and family. Their lifestyle will change in order to have much time to get online. A considerable decrease of physical activities and enjoyable activities and hobbies that have already been enjoyable for the individual before are also seen in these people(21). According to the conducted studies in this field most Internet users were collegians (78.5%) and the seniors (83%). Also, the studies have shown that Internet was addictive especially among collegians(22). Preventing IA is one of the most important acts of resistance. One of the factors related to IA is emotional intelligence (EI). EI is a form of emotional processing that is essential for improving the life and lack of it would make people not to have a good attitude to their emotions and feelings, therefore, they lose the ability to control of their life(23). Given to the similarities between the signs, symptoms and causes of IA and drug addiction of it is expected to be a negative correlation between EI and IA. Given to the importance of the problem of IA, especially among college students and its effects on academic achievement (AA) and their health, this study aimed to investigate the association of IA with AA, EI and strategies to prevent of them from student's perspectives in Zahedan University of Medical Sciences. The aim of this study was to determine the association of

internet addiction with academic achievement, emotional intelligence and strategies to prevent of them from student's perspectives.

### **Materials and Methods**

This is a cross-sectional study. It has conducted to investigate the relationship between IA, EI and academic achievement in students of Zahedan University of Medical Sciences (ZAUMS), Sistan and Baluchestan province, Zahedan, Iran.

### **Sampling**

The population of the study comprised of all students (3727 including 2351 females and 1376 males) who were studying at Zahedan University of Medical Sciences in 2014-2015 semester. The randomized-stratified sampling method used and 600 students were selected from all schools (Medicine, dentistry, paramedics, health, rehabilitation, nursing and midwifery). Those students who were studying in one school of Zahedan University of Medical Science and had consent to take part in the study were included. Participation was conscious and voluntary. All junior students were excluded from the study because they didn't have any marks. A standard questionnaire was used for data collecting.

### **Data Collection**

The instrument has four parts:

The first part consisted of demographic variables such as age, gender, education, and dormitory or non-dormitory residency and the grade point average (GPA) determined as an indicator of AA were evaluated(24-27).

The second part was consisted of internet addiction standard test (IAT) of Young (1998). This test is one of the most common tests for IA assessment(28, 29). A five-degree Likert scale was measuring all the responses (5= always, 4= mostly, 3= very often, 2= sometimes, 1= not very often). The range of marks was between 0 to 100. There were three levels of users including common users (mark: 20-49), users at risk of addiction (mark: 50-79), and addicted users (mark: 80-100). Higher marks here represent more dependent on the Internet and more severe problems as a result of excessive use of the Internet. The questionnaire's validity was confirmed by a panel of experts. The validity of this questionnaire was confirmed by using views of five specialists of this field and it was calculated CVI=0.81 and its reliability was based on Cronbach's alpha=0.87 and  $r=0.81$  using test-re-test in two-week interval by 20 medical sciences students. The reliability of this tool was approved in many studies in Iran and other English-speaking countries (1, 30-33).

The third part of questionnaire measured the EI, the EI training questionnaire of Petrides & Furnham (2001) (34). The main form of that has 144 questions with 15 subscales. In this study the 30-question questionnaire form that is suitable for Iranian culture was used(35). 4 aspects of EI were evaluated on this tool including optimism (7 questions), understand and evaluate their emotions and others (with 10 questions), consciousness (6 questions) and social skills (7 questions). The score in this part is also based on the 7-degree Likert scale from strongly disagree (score 1) to strongly agree (score 7). EI in individuals is obtained from the total score of the four dimensions. The highest score in entire the test was 210 and the lowest was 30. This shows the total score of EI. The reliability of this tool was demonstrated in

several studies (25, 34-36). In this study, the validity of this questionnaire was proved by using views of five specialists of this field and it was calculated CVI=0.83 and its reliability was based on Cronbach's alpha=0.91 and r=0.83 using test-re-test in two-week interval by 20 students of medical sciences.

The fourth part of questionnaire the student's opinion about IA prevention strategies was gathered and reported.

### Ethical Consideration

This survey was confirmed by the Medical Ethics Committee of Zahedan University of Medical Sciences. Student participation in this study was subject to a verbal and informed agreement. Also, the students were assured that their personal information will remain confidential and participation in this study is voluntary. To respect the ethical considerations in research, the aim of this study and how to complete the questionnaire was described for the participants. Then the questionnaires were distributed on Central computer site and University Library on several occasions (16 times) between participants and were collected after completing by them.

### Data Analysis

For assessment of data normality Kolmogorov-Smirnov test was used and data were normal ( $p=0.61$ ). Data analysis was performed using descriptive statistics (frequency table, mean and standard deviation) and analytical statistics (T-test and Pearson's correlation coefficient). All the survey results were compiled and analyzed with the SPSS-21. The significant level of the tests was considered less than 0.05 ( $P<0.005$ ).

### Results

The results of this study showed that the age of participants was 18 to 25 with a mean of  $21.13\pm 1.61$ . The GPA for students was  $16.49\pm 1.34$ . The GPA of male students was  $16.25\pm 1.23$  and for females was  $16.73\pm 1.46$ . Demographic information of students is reported in Table 1.

Table1. Frequency of demographic information of students of Zahedan University of Medical Sciences

Demographic features	Number (%)
Age, (Mean±SD)	21.13±1.61
Gender	
Male	324 (54.00)
Female	276 (46.00)
Major	
Medicine	65 (10.83)
Dentistry	15 (2.500)
Nursing	71 (11.85)
Public health	54 (9.00)
Environmental health	63 (10.50)
Anesthesia	80 (13.33)
Optometrist	78 (13.00)

Physiotherapy	91 (15.16)
Nutrition	39 (6.50)
Radiology	44 (7.33)
Residency Status	
Dormitory	402 (67.00)
Non-dormitory	198 (33.00)
GPA	
Male, (Mean±SD)	16.25±1.23
Female, (Mean±SD)	16.73±1.46

The results of the Pearson correlation showed a significant relationship between IA and AA ( $p= 0.001$ ,  $r = - 0.54$ ) and EI ( $p= 0.012$ ,  $r = - 0.62$ ). There was also significant difference between students' average and addiction to the Internet so that addicted students' average ( $15.31\pm1.43$ ) was less than at risk group ( $16.01\pm2.23$ ) and normal (healthy) users ( $17.28\pm1.12$ ).

The independent t-test results showed significant difference between about the amount of IA ( $p=0.019$ ) and EI ( $p=0.023$ ) in comparison of male and female students. Other results have reported in table 2.

Table 2. The results of t-test for comparison of the IA, EI and average mark among male and female students of Zahedan University of Medical Sciences.

Variable	Sex	Number	Mean	SD	P
Internet addiction	Male	324	9.475	1.01	*0.019
	Female	276	5.432	0.75	
Emotional intelligence	Male	324	129.7	11.2	*0.023
	Female	276	124.8	11.7	
GPA	Male	324	16.73	1.46	0.07
	Female	276	16.25	1.23	

The results of the study showed that the rate of IA among students based on user is 12.5% and they were suffering of IA. Table 3.

Internet addiction levels	Number N	Percentage %
Common users (20-49)	382	63.66
Users at risk of addiction (50-79)	143	23.84
Addicted users (80-100)	75	12.5

The results of EI showed that the mean score of EI is  $127.25\pm11.45$ . Consciousness with an average of  $54.22\pm6.03$  is the most important and influential factor between the other dimensions of EI. Other results have showed in table 4.

Table 4. Distribution of mean and standard deviation of each of the dimensions of EI among students of Zahedan University of Medical sciences

Variable	Mean	SD	Min	Max
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Optimism	9.23	2.13	4.00	16.00
Understand and evaluate their own and others emotions	54.22	8.02	32.00	74.00
Self-Consciousness	32.67	5.13	25.00	51.00
Social skills	25.36	3.25	7.00	43.00
Total score of emotional intelligence	127.25	11.45	83.00	161.00

IA prevention strategies from the perspective of students are reported in Table 4.

Table 4: IA prevention strategies from the perspective of students

Student's Perspectives	frequency	Percentage %
1. Raise the awareness about Internet addiction and its effects through holding classes	527	87.83
2. Participate in group activities and having fun with a group of friends	498	83.00
3. Strengthen support networks, communication skills and social interactions	453	75.50
4. Increase family supports and good communication between family members	412	68.66
5. Having Internet usage plan and schedule	401	66.83
6. Attending Consulting sessions	346	57.66
7. Controlling the usage, the quality, and quantity of connecting, usage of Internet among families and university officials and limitations in Internet access	219	36.50

## 5. Discussion

This study was done with the aim of investigating the correlation between IA and educational progress and EI in medical sciences students of Zahedan University. The results showed that 12.5% of the students had IA, 23.84% were at risk of IA and most of them 63.66% were healthy (normal users). In other studies conducted in this field including Alavi and colleagues study about the investigation of the relation between psychiatric symptoms and IA among students the amount of students who suffered from IA was reported 15% and common users were 85%(20). While in this study 63.33% were common users and 23.83% were users at risk of IA. These users are in the serious risk of IA. Also, in a study conducted by Alavi and Jafari users with IA were 10-15% of Internet users(1, 37). In Nastizaei's study, common users were 66.93% which is near to our study. In Asiri et al.'s study most of the students (50.2%) were healthy and 44.1% were at risk of IA and only 5.7% of them were overuses (33). IA in Ansari et al.'s study IA incidence reported to be 25% which is a higher incidence compared to other studies (38). The previous studies in this field have shown that IA in teenagers is increasing (39, 40). Considering these and big difference between Internet addicted individuals in Ansari's study and also considering the great numbers of individuals at risk in other studies, this can be predictive of increasing spread of Internet use in students, and lack of prevention will result in addition of these students to the addicted group. On the other hand, this increase in IA and at risk individuals can be attributed to easy access to the Internet and presence of

smart devices with the capability to connect to the Internet and also to Wi-Fi networks and laptops which can be carried and connected to the Internet in nearly all places. In another study about IA the results showed that only 2.2% of users were IA and 17.5% were at risk of IA and these results are different from the results of the current study (41). This difference can be the cause of difference between study populations and also because of difference in easiness of access to the Internet and the costs of Internet use between two studies.

The results of the upcoming study showed that there is a significant difference between male and female users in an amount of Internet usage. The amount of Internet usage is higher in males. This was shown also in other studies such as Nastizaei's(42) or Hosseini et al. study that they aimed to investigate the relationship between mental health and addiction(43). In other studies, it was found that men are 1.8 times susceptible to IA more than women. 10% of subjects had the criteria to IA. It was found that most of the users were males and from engineering schools(44, 45). In the study of Yu et.al there was a relation between IA and some variables such as being male, low self-esteem, depression and poor family relationships(46). In Ansari and Asiri studies, male students' addiction was higher than female students(33, 38). Gender role in IA incidence and being it higher in males is attributed to the males' more social freedom, more friends in cyberspace and their more membership in chat social networks(38). While in other studies, including the yen and colleagues (47) and Fan Chen (48) excessive use of the Internet was reported among female and they said that it is more than males. In a study of Bohlen and colleagues the amount of Internet usage among both sex groups was equal(49). This difference in IA and its relation to two sex groups can be because of more number of male users, cultural and social differences in the amount of Internet usage, restrictions, more girl monitoring, and peoples the amount of Internet access. IA students' problems appear when they spend a lot of time in Internet with the aim of doing chat in social networks, playing online games and purposeless web surfing. It is recommended that at risk students, in addition to the school curriculum, learn necessary educations about the correct way of Internet use and self-control.

Based on the results of the current study, there was a significant correlation between IA a students' average so that students with lower averages were at a greater risk of IA and its complications compared to students with higher averages. The results of current study with the results of several studies, including the study of Asiri et al. were matched. So that there was a significant association between GPA of the healthy students with other groups of students like as at risk and IA groups (33, 38, 50). Internet addicted students usually spend more time using Internet than other students in doing chat, web surfing, gaming and using interesting websites. Thus they have less time and interest to do their duties and study their lessons and this can be one of the causes of academic failure in these students.

Results of this study had shown a significant association between IA, EI and educational achievement among students. So that subjects who suffered from IA had lower EI. Also, an increase in Internet usage caused academic failure in students. In studies of Jafari and Law that aimed to predict IA based on EI among students also a significant association was reported between IA and EI just as present study(23, 51). Results of studies of Trinidad and colleagues and the study of Reiley in this field had shown that improving the EI factors will improve inhibiting impulses skills in youth and can decrease the IA. These results are found in the present study also(52, 53). Considering the positive role of EI in different aspects of

life by facilitating the processing of EI and integrating the person's thoughts (25, 54, 55), it can prevent from IA in students and help them progress in their studying.

### **Conclusion**

The Internet plays a huge role in our today's life. It affected every part of our life and it cannot be separated from us. So we can educate people especially students as the educated and youth population of the country to use the Internet appropriately. In fact, the factors that make the difference between a common user and a user addicted to the Internet are moderation and rational use of the Internet. So then teaching the correct way to use the useful tools and technologies as computers, the Internet and social networks in different sections and ages in a family, home and even at offices and also raising awareness among students about the consequences of IA can be a good plan for prevention and decreasing of IA. Since the IA can affect physical and mental activities, by knowing this matter that prevention is better than treatment, with teaching EI to people that are a teaching of ability to control your behavior and emotions in fact we can prevent the effects of IA. It is suggested to check the IA in students based on their personal characteristics in future studies. Kind of Internet usage and time of Internet usage also should be mentioned in future studies.

Meaningful and relevant topic, adequate samples and reporting the strategies to prevent the IA from student's viewpoints can be mentioned as the strengths of this study. Self-reporting method was used for collecting data in this study which is a weakness of this study. For solving this problem the aim of the study was explained before giving the questionnaire precisely and respondents were asked to fill the questionnaire honestly.

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### **Conflict of Interest**

There is no conflict of interests regarding the publication of this manuscript.

**Corresponding Author : Enam Alhagh Charkhat Gorgich , Student Scientific Research Center, Zahedan University of Medical Sciences, Zahedan, Iran. Tel: 9809158474229 - Email: Enam.gorgich@yahoo.com**



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