



# The Status of Internet Addiction Disorder and its Relationship with the Mental Health; a Case Study among Medical Sciences Students of Khalkhal University

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## ABSTRACT

**Aims** As a talented and educated groups, university students have a critical role in country, thus, their mental health has an especial importance in learning. The present study aimed to evaluate the relationship between internet addiction disorder and mental health among University students of Medical Sciences in Khalkhal.

**Instrument & Methods** As a descriptive-analytical research, this study conducted on 428 university students in Khalkhal who were studying the Medical Sciences in 2015. The instrument used in this study was a three-part questionnaire; the first part included the demographic characteristics of the participants; the second part was Young Internet Addiction Test and the third part consisted of General Health Questionnaire (GHQ-28). Sampling was done randomly. The collected data were analyzed using SPSS software. Descriptive statistics, Pierson correlation, and multiple linear regression were used to analysis the data.

**Findings** 77.3% of the participants had no internet addiction, 21.7% were at the risk of internet addiction and 0.9% suffered from internet addiction. Moreover, there was a significant relationship between the mental health and internet addiction disorder ( $p < 0.05$ ).

**Conclusion** There is a relationship between the internet addiction and mental health of students.

**Keywords** Internet; Mental Health; Students

## CITATION LINKS

[1] Study of the self-care agency in patients with heart failure [2] Anthropometric indices in acute myocardial infarction patients and their relationship with some coronary heart disease risk factors [3] Effectiveness of education based on orem's self-care model in self-care activity of patients with implantable cardioverter defibrillators [4] Evolution of Knowledge of the principles of self-care in acute coronary syndrome patients admitted to AliebnaabalebRafsanjan University Hospital During 2009 [5] SSelf-care behaviors in patients after myocardial infarction [6] Self-care ability based on Orem's theory in coronary artery disease patients [7] 2013 ACCF/AHA guideline for the management of heart failure: Executive summary [8] Needs assessment of self-care training in patients with coronary artery disease in Bandar Abbas [9] The effect of patient education about self-care behaviors with media clips on self-care among patients with permanent pacemaker [10] Perception of patients with cardiovascular disease about barriers and benefits of health promotion behaviors [11] Adherence to self-care and social support [12] Self-care behaviour of patients with heart failure [13] Educational needs for improving self-care in heart failure patients with diabetes [14] Self-care behaviors in indigent patients with heart failure [15] Educational needs of myocardial infarction patients [16] Learning style and learning needs of heart failure patients (The Need2Know-HF patient study) [17] Investigating learning needs and life quality of patients with chronic myocardia heart attack referring to Imam Sajjad Hospital, Ramsar, Iran [18] Quality of life and its influencing factors in patients with congestive heart failure [19] Improvement of young an old patient's knowledge of heart failure after an educational session [20] Rationale and design of a randomised controlled trial evaluating the effectiveness of an exercise program to improve the quality of life of patients with heart failure in primary care: The EFICAR study protocol [21] The effect of an educational self-care program on knowledge and performance in patients with heart failure [22] The Effect of educating self-care behaviors to patients with heart failure in hospitals of Zahedan [23] Effects of multidisciplinary Internetbased program on management of heart failure [24] The effect of face-to-face education on knowledge, attitude, and believes of acute coronary syndrome patients about heart disease: an experimental study [25] The effect of cardiac rehabilitation on hemodynamic parameters in patients undergoing coronary artery bypass surgery [26] Cardiac rehabilitation effects on quality of life in patients after acute myocardial infarction

## Introduction

Internet has a special status in science and technology [1]. Access to the internet is increasing and a larger number of individuals use internet every day. Attractiveness and ease of access have caused unusual and inappropriate use of the internet; this phenomenon has been known as "internet addiction" in recent years [2-4]. Internet addiction disorder is a type of psychological-social disorder that its attributes includes tolerance, isolation symptoms, emotional disturbances and disruption of social relationships [5, 6] and the deprivation of internet would cause to irritability and behaviors associated with bad-tempered in individuals [7-9]. According to related studies, Personality characteristics such as introversion, incompatibility and low emotional stability, sense of alienation from oneself, weakness and inability to do affairs, abnormal social behaviors, inactivity, avoiding face to face communication, low self-esteem and depression have a strong and direct relationship with the daily use of the internet [5, 6, 10-13].

As an important component of health definitions from the perspective of World Health Organization [14], mental health is the ability of harmonious relation with others, change and modification of personal-social environment, reasonably, fair and appropriate solution of personal conflicts and desires [15]. Technology and internet are factors that can affect people's mental health [1]. The results of the study conducted by Bahri *et al.* shows that 9.5% of Medical sciences' students in Gonabad University have internet addiction and 21.5% them are at the risk of Internet addiction. According to his results, there is a statistically significant and inverse relationship between general health and internet addiction in students [16]. In their study on Mazandaran students, Mirzaeyan *et al.* report there is a statistically significant relationship between internet addiction and mental health in students [17]. In their study, Shayegh *et al.* report that there is a positive and significant relationship between the internet addiction, responsibility and pleasure [18].

Therefore, according to above mentioned studies, internet addiction affects one's mental health [16-19]. Mental health is an aspect to evaluate the health of various societies and

plays an important role in the dynamism and efficiency of all societies. Since students belong to the talented and educated groups of the community, their mental health has an especial importance in learning and increasing scientific knowledge [20]. Given the addictive nature of the internet, especially among students [21-23] and the lack of studies examining its relationship with students' mental health, the present study aimed to determine the status of internet addiction among the students of Medical Sciences in Khalkhal City, Iran, and its relationship with students' mental health.

## Instrument & Methods

This is a descriptive-analytic study conducted on the students of Khalkhal Islamic Azad University and Khalkhal University of Medical Sciences in 2015. The sample size was estimated as 360 individuals according to related formula by considering  $\alpha=0.05$ ,  $SD=0.45$  and  $d=4.5$ . Predicting the loss of about 20% of samples, 450 questionnaires were divided among the randomly selected students. 32 questionnaires were mistaken and 202 students were participated from Khalkhal University of Medical Sciences and 226 from Khalkhal Islamic Azad University.

The instrument used in this study was a three-part questionnaire. The first part was made up by demographic characteristics of the participants (sex, academic field, marital status, living location, rate of costs spending for internet, father's- and mother's education level, mother's job and residence status); the second part was Young Internet Addiction Test and the third part consisted of General Health Questionnaire (GHQ-28).

As a standard questionnaire, Young Internet Addiction Test contains 20 questions as 5-option Likert scale from "rarely" (1 point) to "always" (5 points). The minimum score of the scale is 20 and the maximum is 100. Accordingly, the participants were assigned to three groups; without of internet addiction (scores 20 to 49), at the risk of internet addiction (scores 50 to 79) and internet addicted (scores 80 to 100). The reliability was reported as 0.88 using Cronbach's alpha coefficient [24].

The third part consisted of General Health Questionnaire (GHQ-28) developed by Goldberg *et al.* [25]. The questionnaire consists

of 4 areas of health problems; depression disorder (questions 1 to 7), anxiety disorder (questions 8 to 14), physical symptoms (questions 15 to 21) and social dysfunction (questions 22 to 28) in a 4-point Likert scale from "No" (0 point) to "Often" (3 points). The total score of the instrument is from 0 to 84 and each subscale score from 0 to 21; a higher score indicates on undesirable status of the subject. To determine the extent and severity of health, the scores of 0-11, 12-16 and 17-21 in each subscale and the scores of 0-40, 41-60 and 61-84 in the total score were considered as "Mild", "Moderate" and "Severe", respectively. Nazifi *et al.* have demonstrated the reliability of the general health questionnaire as 0.92 using Cronbach's alpha coefficient [26].

The plan of this study has been approved by Ardebil University of Medical Sciences. After explaining the objectives of the study, the students were asked to participate in it. 450 questionnaires were distributed among the students out of which 32 cases were excluded from the study due to incomplete answers.

The data was entered into SPSS 23 and analyzed using descriptive and analytic statistics. The normality of the data was confirmed by Kolomogorov-Smirnov test. Pearson correlation was used to determine the relationship between the status of internet addiction and mental health among the participated students. To find out the prediction ability of mental health on internet addiction, the multiple linear regressions was utilized.

## Findings

The mean age of the students was  $22.06 \pm 3.33$  year. The majority of participants were female (73.4%), single (89.5%) and studying in the field of nursing (65.2%). 7.2% of participants spent 50% of their income to buy internet (Figure 1).

77.3% of the participants had no internet addiction, 21.7% were at the risk of internet addiction and 0.9% suffered from internet addiction.

12.85% of the students suffered from severe mental health problems, 39.72% from moderate and 47.43% from mild (Figure 2).

Internet addiction had statistical significant correlations with physical disorder ( $r=0.092$ ;  $p<0.05$ ), anxiety disorder ( $r=0.014$ ;  $p=0.03$ )

and depression ( $r=0.88$ ;  $p=0.007$ ) and totally with mental health ( $r=0.376$ ;  $p=0.001$ ).

**Figure 1)** Distribution frequency of demographic characteristics of the participants

| Variable                                   | N (%)      |
|--|------------|
| <b>Sex</b>                                 |            |
| Male                                       | 114 (26.6) |
| Female                                     | 314 (73.4) |
| <b>Academic field</b>                      |            |
| Nursing                                    | 279 (65.2) |
| Midwifery                                  | 53 (12.4)  |
| Public health                              | 44 (10.3)  |
| Environmental Health                       | 52 (12.1)  |
| <b>Marital status</b>                      |            |
| Married                                    | 45 (10.5)  |
| Single                                     | 383 (89.5) |
| <b>Living location</b>                     |            |
| City                                       | 366 (85.5) |
| Village                                    | 62 (14.5)  |
| <b>Rate of costs spending for internet</b> |            |
| 10-20%                                     | 322 (75.2) |
| 20-40%                                     | 75 (17.5)  |
| >50%                                       | 31 (7.2)   |
| <b>Father's education level</b>            |            |
| Under diploma                              | 194 (45.4) |
| Diploma                                    | 116 (27.1) |
| University education                       | 118 (27.6) |
| <b>Mother's education level</b>            |            |
| Under diploma                              | 280 (65.5) |
| Diploma                                    | 100 (23.4) |
| University education                       | 48 (11.2)  |
| <b>Mother's job</b>                        |            |
| Employed                                   | 48 (11.2)  |
| Un-employed                                | 380 (88.8) |
| <b>Residence status</b>                    |            |
| Dormitory                                  | 247 (57.7) |
| Non-dormitory                              | 181 (42.3) |

Mental health had the predictive ability of 17.8% ( $p<0.05$ ) of changes in the mean score of internet addiction that by adding demographic variables, regression model was repeated as stepwise. Thus two dimensions of mental health that is physical disorder and anxiety disorder, beside the sex and mode of access to internet remained in the model and these variables had the predictive power of 21.6% ( $p<0.05$ ) of changes in the mean score of internet addiction.

**Figure 2)** Frequency of mental health problems in participants

| Mental Health              | Mild        | Moderate    | Severe     |
|----------------------------|-------------|-------------|------------|
| <b>Physical symptoms</b>   | 211 (49.30) | 155 (36.22) | 62 (14.48) |
| <b>Anxiety disorder</b>    | 202 (47.20) | 170 (39.70) | 56 (13.10) |
| <b>Social dysfunction</b>  | 118 (27.60) | 253 (59.10) | 57 (13.30) |
| <b>Depression disorder</b> | 283 (66.10) | 102 (23.80) | 43 (10.10) |
| <b>Total Score</b>         | 203 (47.43) | 170 (39.72) | 55 (12.85) |

## Discussion

The aim of this study was to determine the status of internet addiction amongst the students of Medical sciences in Khalkhal and to find out its relationship with students' mental health. The results of the study showed that 77.3% of students did not have internet addiction while 21.9% of them were at the risk of internet addiction. These results conform to the study of Bahri *et al.* in which 21.5% of students are at the risk of internet addiction; while 69% of students do not suffer from internet addiction [16]. In the study conducted by Nastizade, reveals that 66.9% of students in Educational Sciences have no internet addiction that in this regard, students participating in this study had more favorable conditions [20]. The results of the study by Xie *et al.* indicate that 0.6% of students have internet addiction that is consistent with the results of this study [27].

Also, in this study, there was a statistical significant relationship between the internet addiction and three areas of mental health problems, namely; physical disorder, anxiety disorder and depression. The results of the studies by Kraut *et al.* [28], Vizeshfar [7], Khosravi & Sahraei [29] and Mirzaeiyan *et al.* [17] reveal that there are statistical significant relationship between mental health and internet addiction. In other words, addicted users of internet are exposed to greater risk of mental disorders compared to ordinary users. These findings are compatible with the results of present study. However, in his study, Nastiezade reports that there is no difference between mental health and internet addiction among addicted and ordinary users [20], which is in contrast with the results of current study. Findings of Bahri *et al.*, Khosravi & Sahraei and Pashaei *et al.* indicate that there is a significant relationship between internet addiction and physical function disorder which support the present study. Bahri *et al.* have argued that the reduction of physical activity and face-to-face interaction in addicted users of internet would change the life style in various fields [16, 29, 30].

In this study, there was a statistically significant relationship between the internet addiction and anxiety disorder which is in line with the results of the studies by Cao *et al.* [31], Yen *et al.* [32], Nastizade [20], Bahri *et al.* [16] and Mirzaeiyan *et al.* [17]. Furthermore, the results

of several studies have indicated that there is a significant positive correlation between internet addiction and depression. For example, in their study, Khosravi & Sahraei note that using internet cause to getting rid of negative emotions such as anxiety and depression. On the other hand, Mirzaeiyan *et al.* mention an uncertain relationship between internet addiction and depression [17]. They state that for some people internet is an alternative for their depressed life without joy, they go toward internet to reduce their depression. Shayegh *et al.* [19] also believe that depressed and alone people are exposed at internet addiction more than others are. However, the results of several studies suggest that there is a statistical significant relationship between internet addiction and increasing depression, which support the results of this study [16, 20, 29, 31-33].

Our results did not find any relationship between social dysfunction and internet addiction which conform to the results of the study by Bahri *et al.* and Nastizade [16, 20], while is opposite to the results of Pashaei *et al.* In their study, Pashaei *et al.* argue a decline in family relationships leads to change in the family processes among internet addicted users [30]. Multiple regression analysis in this research indicated that 17.8% of changes in internet addiction are predictable in the area of mental health, while the results of Khosravi & Sahraei's study reveal that the linear relationship between internet addiction and mental health is 25% [29].

A limitation of this study was the use of self-report questionnaire in which the participants may have hesitation in expressing their problems. Therefore, for future studies, it could be suggested to use the mixed methods that include questionnaire besides the direct interviews to reach more reliable data about causes and consequences of the problem.

## Conclusion

There is a relationship between internet addiction and mental health status of medical students; the more mental health problems, the more internet addiction.

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**Ethical Permission:** None to be declared.



**Conflicts of Interests:** The authors declare no conflict of interest in this study.

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