RESEARCH ARTICLE

The relationship between internet addiction and anxiety in female high school students in Ahvaz

Foroogh Riahi 1, Ashraf Tashakori 2 and Sepideh Majdi 3*

1.Assistant Professor, Department of Psychiatry, Golestan hospital, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

2.Associate Professor, Department of Psychiatry, Golestan hospital, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

3.Student of General Medicine, Department of Medicine, Student Research Committee, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

ABSTRACT

Background: the internet now has been an essential part of our lives. Although the positive aspect of internet are admired, it is found to be associated with some psychiatric co-morbidities such as anxiety. This study perfomed to investigate the relationship between internet addiction and anxiety in female high school students. Method: 214 student were selected randomly and were given two questionairs to assess internet addiction and anxiety level in students.the data analysed using spss version 24 Results: From 214 subjects, 135(63.1%) were found to be normal users, 69(32.2%) were users with mild addiction and 10(4.7%) had severe addiction. The prevalence of state anxiety in normal users, mild addicts and severe addicts was 3.7%, 50.7% and 80% respectively. And for trait anxiety it was 3.7%, 60.9% and 90% respectively. There was a significant difference in anxiety level between addicted groups and normal users.(P value<0.005) Conclusion: internet addiction is significantly associated with anxiety in high school students. So Staff working in junior or senior high schools should pay attention to students' internet usage.

INTRODUCTION

Internet has brought new era of of technological revolution. (1) It is considered as the most powerful media of the 21st century and has influenced all aspects of our lives. The present generation relies on internet and its usage in communication and education. According to statistics the number of internet users in the world has been about 3 billion in 2015 in Iran it is estimated as 22 million.(26) The average time spent on internet in Iran was 52 minutes per week (28.3% of population)(5)

Internet has been an effective tool in eliminating human geographical limitations and it is globally applied by a large number of people due to its unique characteristics in interpersonal communications. However, excessive use of the internet can result in negative consequences. Internet addiction disorder is nowadays recognized as a new syndrome among psychologist research and has provided a fresh area of research. (2) Internet addiction disorder (IAD) can be defined as one's inability to control his internet using, which could lead to physical, psychological, and social difficulties.(7) Young declared that internet dependent people use intenet excessively in a way that results in personal, family and occupational problems similar to those occure other

addiction. (3). Major addiction criteria that should last at least 20 months include: tolerance, withdrawal symptoms, forced to use the Internet to reduce or prevent Withdrawal symptoms, overuse of the internet more than the time intended, reduction of social, occupational and recreational activities and the risk of loss of job, education and employment opportunities due to excessive use of the Internet(8) Worldwide prevalence of Internet addiction ranged from 1.6%-18%. 10.7% of adolescents in South Korea present Internet addiction according to Young's internet addiction scale, 11% in Greece, based on the same test. 10.7–13.9% of European adolescents are at-risk for internet addiction, based on Young's instruments and 4% in high school students in the USA(20). In Iran jalalinejad et al estimated the number of internet addicted university students as 17.2%(2) and Turi et al found it to be 5.8% in high school students(9) Previous studies suggested that Internet addiction increases the risk of a number of negative social and health consequences, such as poor academic performance, poor personality relationship, anxiety and depression. (11) There is a great need to evaluate the association between Internet addiction and psychiatric co-morbidity. Roger et al research demonsrated

675

that Internet addiction is significantly associated with psychiatric co-morbidites such as alcohol abuse, attention deficit and hyperactivity, depression and anxiety.(11) Anxiety is another factor which relationship with internet addiction has been studied. Anxiety is a multisystem response to a perceived threat or danger. It reflects a combination of biochemical changes in the body, the patient's personal history and memory, and the social situation. As far as we know, anxiety is a uniquely human experience.(27) Some studies have investigated the association between internet addiction and anxiety: A study done by Rice and Markey on a sample of 80 women with an average age of 18.8 showed that some people feel less anxious when communicating through the internet rather than directly due to personal traits such as introversion and psychoneurotic factors(12) The research carried out by Shepherd and Edelmann on a sample of 169 students indicated that for people suffering from social anxiety, it is easier to communicate through the internet than direct contact and stated the possibility of anonymity as the reason.(13). Jalalinejad et al investigated the association between internet addiction and anxiety in university students and showed that Internet users have a higher anxiety

level than non-users.(2) most of the studies have been conducted in university students. However, high school students due to their desire for freedom and companionship are more vulnerable to internet addiction. As Young has said they may experience academic problems when they use irrelevant websites and chat rooms.(3) It seems that there is not enough literature about internet addiction on high school students. This study aims to investigate the relation between internet addiction and anxiety in female high school students oh Ahvaz.

MATERIALS AND METHODLOGY

240 high school students were picked from 8 different schools through cluster sampling. The permission was obtained from the principal of the schools. Only volunteer sudents took part in the study and the questionairs were anonymus. The inclusion criteria was to be a female high school student. The population were given 2 questionairs. 26 questionairs were removed due to incomplete answers.

Assesment tools:

a)   Young Internet Addiction Scale (IAT)

Young.s questionnaire which contains 20 questions is one the most popular questionnaire in the researches. Yoo & colleagues (2004) found Chronbach Alfa

coefficient to be more than 0.9. (14) In Iran Ghasemzade et al found it to be 0.88.(15) The 20 questions of this questionnaire are scored on a 5-point scale, (ranging from 1 to 5). Scores varied from 20 to 100 with 20–49 depicting normal users, 50–79 showing a user having frequent problems due to internet usage and 80–100 depicting a user having a serious impact of internet on his life(4)

b) Spielberger State-Trait Anxiety Inventory (STAI)

Spielberger State-Trait Anxiety Inventory (STAI) was used to assess the anxiety level of sudents. It is a self-reported instrument. It was designed to assess levels of state anxiety and traint anxiety, through 40 items scored by a likert-scale. State anxiety can be defined as a transient momentary emotional status that results from situational stress. Trait anxiety represents a predisposition to react with anxiety in stressful situations. This data set includes two STAI subscale score.(16) The cronbach's alfa of this test is calculated as 0.86.(18) in Iran it was calculated as 0.91.(17)

RESULTS

The sample population was divided into 3 groups based on their mark from Young"s internet addiction test. From 214 subjects,

135(63.1%) were found to be normal users, 69(32.2%) were users with mild addiction and 10(4.7%) had severe addiction.

Results of anxiety

The sample population were divided into 6 groups based on their marks from spielberger questionair: no anxiety, mild anxiety, moderate anxiety, rather severe anxiety, severe anxiety and very severe anxiety.

State Anxiety

From 214 subjects, 35(16.4%) had no anxiety, 68(31.8%) were found have mild anxiety, 63(29.4%) moderate anxiety, 20(9.3%) rather severe, 24(11.2%) severe anxiey and 4(1.9%) very severe anxiety.

Trait Anxiety

From 214 subjects, 29(13.6%) had no anxiety, 70(32.7%) were found %) rather severe, 20(9.3%) severe anxiey and 5(2.3%) very severe anxiety.

Results of academic performance

The students' academic performance based on their last term grade average was as follow: The mean average of the students was 18.32±1.52. The mean averages of normal users, mild addicts and severe addicts were 18.85±0.95, 17.53±1.9 and 16.59±1

respectively. The data was analysed using Anova Test. There was a significant correlation between internet addiction and the students average marks.

The mean time spent on internet in the sample population was 11 hours and 15 minutes per week. User's weekly time spent on internet based on their level of internet addiction was: 10 hours and 40 minutes for normal users, 11 hours and 50 minutes for mild addicts and 14 hours and 40 minutes for severe addicts. There was no significant correlation between the time spent on internet and the level of addiction

		State.Anxiety											
		No Anxiety		Mild		moderate		Rather Severe		Severe		Very Severe	
Addiction	Normal User	35	25%	58	42%	37	27.4%	4	3%	1	0.7%	0	0%
	Mild Addiction	0	0%	10	14.4%	24	34.8%	16	23.2%	19	27.5%	0	0%
	Severe Addiction	0	0%	0	0%	2	20%	0	0%	4	40%	4	40%
Total		35		68		63		20		24		4	

Table 1: Results of state anxiety based on intenet addiction level

		Trait.Anxiety											
		No Anxiety		Mild		moderate		Rather Severe		Severe		Very Severe	
Addiction	Normal User	27	20%	62	51.1%	41	30.4%	3	2.22%	2	1.48%	0	0%
	Mild Addiction	2	1.5%	7	10.1%	18	26%	26	37.7%	14	20.3%	2	2.9%
	Severe Addiction	0	0%	1	10%	0	0%	2	20%	4	40%	3	30%
Total		29		70		59		31		20		5	

Table 2: Results of trait anxiety based on internet addiction level.

The data was analysed using Chi-square Test. As it can be seen from the tables above, the higher levels of state and trait anxiety happen in people with higher levels of addiction. There is a significant relationship between internet addiction and anxiety(P value<0.05)

DISUSSION

In this study the prevalence of internet addiction was 4.7%. 63.1% of the sample population were normal users and 32.3% were mild addicts. The results were consistent with those of Dargahi and Razavi which calculated the prevalence of mild internet addiction and severe internet addiction 26% and 4% respectively.(19) Our results were also consistent with those reported in studies done in the other countries in similar age groups, which ranged from 4-6%.(9,19-20) In khoramabad it was found to be 1.6% in male high school students which was lower than ours.(8) This can be due to the difference in demographic features. Comparing our results to some other studies, the prevalence of internet addiction in university student is higher than high school students.(17-34% in university students) (2,21&22)This is incompatible with the results of a study in USA which concluded that the addiction is higher in high school students than university students.(20) This incompatibility may be because in developed countries the first use of internet happens earlier, so the university students have learned how to use in correctly until that age.

The prevalence of state anxiety(the overall rate of rather severe, severe and very severe anxiety) among the sample population was 22.4%. it was found to be 3.7% in normal users, 50.7% in mild addicts and 80% in severe addicts. The prevalence of trait anxiety was 26.1%. it was found to be 3.7% in normal users, 60.9% in mild addicts and 90% in severe addicts. It was also found that Internet addicts have a higher anxiety level than normal users. There was also significant difference in anxiety level among the normal users, mild addicts and severe addicts. The results were consistent with some other studies. Jalalinejad et al found a positive relationship between internet addiction and anxiety; they believe that anxious people use the internet in order to overcome their anxiety and escape from uneasy thoughts that lead to anxiety. (2) In an other study in Korea it was found that people with severe internet addiction have higher level of anxiety and tend to spend their leisure time alone.(22) Toyuri and also found a positive relationship between internet addiction and anxiety.(9) In general, it can be said that normal users have lower anxiety levels and are not afflicted with the negative effects of excessive internet use. Excessive internet usage may be a maintaining factor for anxiety by reinforcing the avoidance of anxiety raising from stressful situations and life events.(2)

The other variable in our study was academic performance based on the last term grade averages. The mean average of the whole

students was 18.32. it was 18.85 in normal users, 17.53 in mild addicts and 16.53 in severe addicts. There was significant correlation between the level of addiction and low academic performance. These results were consistent with those of Chen et al. they were also consistent with the results of Noreen Akhter who found negative correlation between academic performance of university undergraduates and internet addiction.(24) It is not clear that wether the use of internet has caused academic failure or the students with lower academic performance were more vulnerable to internet addiction. Our results were inconsistent with the results of Timothy et al who did not find any relationship between problematic internet use and grade average.(20) This difference is probably because of different threshold for diagnosing addiction, as they say, they consider some students as problematic users who in fact spent long hours on the internet doing academic work.

The numbers of hours spent on internet was 11 hours and 15 minutes per week in the sample population. It was about 10 hours and 40 minutes in normal users, 11 hours and 50 minutes in mild addicts and 13 hours and 40 minutes in severe addicts. Although the hours spent on internet in higher in addict groups there was no significant relationship between the hours spent on internet and the level of addiction. In the study done by Kheirkhah et al the mean hours spent online was 10.3. it was 14.42 in dependent group and 9 hours in non-dependent group; they found a significant difference between addicted and non-addicted group in hours spent online. (25) This was inconsistent with our study, that may be because their sample population is much more than ours(1856) so their results might be more accurate.

There are a number of limitations in the current study. First, it is difficult to demonstrate the causal relationship due to the cross-sectional design of the study. And the self-report system might lead to underreport the behaviors including addiction and anxiety. It is suggested for the future research to study the phenomenon of internet addiction using direct clinical assessment and standardized diagnostic scales to characterize the etiology and pathology of internet addiction.

REFERENSE

1. Yadav P, Banwari G, Parmar C, Maniar R. Internet addiction and its correlates among high school students: A preliminary study from Ahmedabad, India. Asian journal of psychiatry. 2013 Dec 31;6(6):500-5.

2. Jalalinejad R, Ghasempoor A, Ajdari Z, Sadeghigooghari N. The relationship between Internet addiction and anxiety in the universities students. Interdisciplinary Journal of Contemporary Research in Business. 2012 May;4(1):942-9.

3. Young KS. Internet addiction: A new clinical phenomenon and its consequences. American behavioral scientist. 2004 Dec;48(4):402-15.

4. Young KS. Internet addiction: The emergence of a new clinical disorder. Cyberpsychology & behavior. 1998;1(3):237-44.

5. Alavi SS, Maracy MR, Jannatifard F, Eslami M. The effect of psychiatric symptoms on the internet addiction disorder in Isfahanâ€™ s university students. Journal of Research in Medical Sciences. 2011 Jun 16;16(6).

6. KEUM SEONG JANG, SEON YOUNG HWANG, JA YUN CHOI(2007) Internet Addiction and Psychiatric Symptoms Among Korean Adolescents, Journal of School Health d March 2008, Vol. 78, No. 3[PubMed:18307612].

7. Naseri L, Mohamadi J, Sayehmiri K, Azizpoor Y. Perceived social support, self-esteem, and internet addiction among students of Al-Zahra University, Tehran, Iran. Iranian journal of psychiatry and behavioral sciences. 2015;9(3)

8. Riahi F, Tashakori A and Akhashi A. The Relationship between Internet Addiction and Depression in Male High School Students in Gifted and State Schools of Khorramabad in 2014-2015. Int.J.Curr.Res.Aca.Rev.4(7): 68-75. doi: http://dx.doi.org/10.20546/ijcrar.2016.407.009

9. Turi A, Miri MR, Beheshti D, Yari E, Khodabakhshi H, Anani SG. Prevalence of Internet Addiction and its relationship with anxiety, stress, and depression in intermediate students in Birjand city in 2014. Journal Of Birjand University Of Medical Sciennces Spring 2015 , Volume 22 , Number 1; Page(s) 67 To

10. Heo J, Oh J, Subramanian SV, Kim Y, Kawachi I. Addictive internet use among Korean adolescents: a national survey. PloS one. 2014 Feb 5;9(2):e87819.

11. Ho RC, Zhang MW, Tsang TY, Toh AH, Pan F, Lu Y, Cheng C, Yip PS, Lam LT, Lai CM, Watanabe H. The association between internet addiction and psychiatric co-morbidity: a meta-analysis. BMC psychiatry. 2014 Jun 20;14(1):183.

12. Rice L, Markey PM. The role of extraversion and neuroticism in influencing anxiety following computer-mediated interactions.

681

Personality and individual differences. 2009 Jan 31;46(1):35-9.

13. Shepherd RM, Edelmann RJ. Reasons for internet use and social anxiety. Personality and individual Differences. 2005 Oct 31;39(5):949-58.

14. Yoo K.S., Cho S.c., ha,J., Yane S.k., Kim S.J. Cheng A. ,Sung Y.H., Lyoo I.K. (2004). Attention defect hyperactivity symptom and Internet addiction. Psychiatry and clinical neuroscience; (58): 487- 494.

15. Ghasemzadeh, L., Shahraray, M., Moradi, A.R., 2007. The study of degree of prevalence to internet addiction and its relation with loneliness and self esteem in high schools students of Tehran. Quarterly Journal of Education, 1, pp.41-68 [In Persian].

16. Spielberger CD. State- Trait anxiety inventory. John Wiley & Sons, Inc.; 2010

17. Movahhedi RN, Ajvadi HA, Ahmadi M, Fakhar MF, Akbarian M, Malamir I. A comparison of prevalence of clear anxiety among the students with different demographic characteristics. Journal of Educational Sciences SPRING 2012 , Volume 5 , Number 17; Page(s) 131 To 146

18. Quek KF, Low WY, Razack AH, Loh CS, Chua CB. Reliability and validity of the Spielberger State-Trait Anxiety Inventory (STAI) among urological patients: a Malaysian study. The Medical Journal of Malaysia. 2004 Jun;59(2):258-67.

19. Dargahi, H., Razavi, S.M. 2007. Internet addiction and its related factors: a study of an Iranian population. Payesh, J. Iranian Institute for Health Sci. Res., 6(3): 265-72.

20. Timothy C. Liu, Rani A. Desai, Suchitra Krishnan-Sarin et al(2011) Problematic Internet Use and Health in Adolescents: Data from a High School Survey in Connecticut, J Clin Psychiatry. 2011 June ; 72(6): 836–845. doi:10.4088/JCP.10m06057.

21. Lee MS, Oh EY, Cho SM, Hong MJ, Moon JS. An assessment of adolescent Internet addiction problems related to depression, social anxiety and peer relationship. Journal of Korean Neuropsychiatric Association. 2001 Jul 1;40(4):616-28.

22. Azher M, Khan RB, Salim M, Bilal M, Hussain A, Haseeb M. The relationship between internet addiction and anxiety among students of University of Sargodha. International Journal of Humanities and Social Science. 2014 Jan;4(1):288-93.

23. Chen YF, Peng SS. University students' Internet use and its relationships with academic performance, interpersonal

relationships, psychosocial adjustment, and self-evaluation. CyberPsychology & Behavior. 2008 Aug 1;11(4):467-9.

24. Akhter N. Relationship between internet addiction and academic performance among university undergraduates. Educational Research and Reviews. 2013 Oct 10;8(19):1793.

25. Kheirkhah F, Gouran A. Internet Addiction, Prevalence and Epidemiological Fea-tures in Mazandaran Province, Northern Iran. Iranian Red Crescent Medical Journal. 2010 Mar;2010(2):133-7.

26. http://www.internetworldstats.com/stats.htm

27. http://www. medical-dictionary.thefreedictionary.com