Mod Care J. 2018 April; 15(2):e66027. doi: 10.5812/modernc.66027.

Published online 2018 April 29. **Research Article**

Relation between Internet Addiction and Educational Burnout among Students in Faculty of Health Management and Medical Informatics of Tabriz University of Medical Sciences: A Cross - Sectional Study

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Received 2018 January 17; **Revised** 2018 March 07; **Accepted** 2018 April 20.

Abstract

Background: With growing usage of Internet in daily life, there is a risk of addiction to using the Internet among users especially students, who use the Internet as a tool for their educational duties. Addiction to the Internet may be a risk factor for educational burnout, which may cause educational failure. This study was designed to determine the relation between Internet addiction and educational burnout among students in the faculty of Management and Medical Information Sciences.
Materials and Methods: This is a cross - sectional study in which all of the students of the Faculty of Management and Medical Information Sciences of Tabriz University of Medical Sciences, in 2015, were included. The data were collected using Young's Internet Addiction questionnaire and Maslach Educational Burnout questionnaire. The independent *t* - test, ANOVA, and linear regression were used to analyze data by using SPSS - v19 ($P < 0.05$).
Results: The total mean $\pm$ SD Internet addiction score was 25.35 ± 16.44. A significant relationship was found between addiction to the Internet and variables such as sex and residential location ($P < 0.05$). The total means $\pm$ SD of educational burnout score was 41.83 ± 14.22. Significant relationship between educational burnout and demographic variables was not found. There was a significant relationship between Internet addiction and educational burnout and its subscales including emotional exhaustion, cynicism subscales, and inefficacy subscale ($P < 0.05$).
Conclusions: Given the positive relationship between Internet addiction and educational burnout among students, it's necessary for authorities to declare the risk of overuse of Internet for students and encourage them to optimize the use of this technology to prevent outcomes such as educational burnout.

Keywords: Educational Burnout, Internet Addiction, Student

1. Background

Technology and Internet are two major factors that changed the life of people all over the world. Today most jobs are somehow related to the Internet and they use it as whole or a major part of their perquisites. Access to the Internet is an ever - growing phenomenon and every day more people join the Internet. Therefore, learning how to use the Internet is necessary for everyone, especially students who want to learn international contents and experiences, databases, and search engines (1).

According to estimates in 2001, about one and a half billion people used the Internet (2) Statistics provided by the National Internet Development Management in Iran shows 53.29% of Internet development (3). This ratio was reported as 32% in 2011 (3), which shows a great improvement. The results of research conducted in the United States show that the use of the Internet among young people is higher than any other age group (4). Several countries in Asia, especially China, South Korea, and Taiwan have the highest prevalence of Internet addiction among young people (5).

Concurrent with growing access to the Internet, a

new kind of addiction, the Internet addiction, has been emerged as the problem of the communication age (6). Internet addiction is a kind of addiction that has emerged with development of technology and modern science in different societies (7). According to American Psychiatry Association, which defined this term in DSMV, "Internet addiction" is a disorder caused by overuse of the Internet or unreasonable use of the Internet, which may cause distress or impairment and a lack of self - control on behavior. Sometimes physiological outcomes are related to Internet addiction (8, 9). Internet addiction causes negative outcomes such as depression, irritability, restlessness, fragmentation of social relations and academic burnout, as well as educational failure (6, 10). Ease of access to the Internet, 24 - hour availability, simplicity, low cost, anonymity of its users, and other features have led to large number of students around the world (11) who use it, which increases the risk of Internet addiction among them.

There are several reasons that have caused the consideration of academic burnout as one of the key areas of research, including the impact of the burnout on academic performance, students' commitment to education at the school, interest in education, and participation in science after graduation (12).

The results of research by Ghahremani et al., showed that there is no significant relationship between demographic variables such as marital status, place of birth, research activity, and having personal e - mail with Internet addiction (13). In the research of Young, 58% of students showed a significant decrease in reading habits, decrease in academic scores, and absence from class. A total of 43% of the good students faced with academic failure due to late sleep because of the use of the Internet (14).

The use of the Internet in universities and educational environments have led universities and research institutes to take action in construction of information infrastructure and create inter - organizational networks and global network connectivity in Iran (15).Students are considered as employees due to the engagement of assignments and they are prone to exhaustion (16). Improper use of Internet and students' aimless searches, not only makes them get away from the main mission of Internet in the university, however, due to an addiction to the Internet and spending more time on it can have negative impacts on the academic performance of students.

Considering the above mentioned regarding the importance of Internet addiction and its potential side effects on educational performance, it seems necessary to investigate the status of Internet addiction in universities among students. In this regard, this study aimed to investigate the relationship between Internet addiction and burnout among the students of Faculty of Management and Information of Tabriz Medical Sciences.

2. Methods

2.1. Study Design

This is a cross - sectional study. The statistic population consisted of all students who were studying in the faculty of Health Management and Medical Informatics Management of Tabriz University of Medical Sciences.

2.2. Sampling

All of the students studying in the faculty of Health Management and Medical Informatics Management of Tabriz University of Medical Sciences were selected in a census.

2.3. Data Collection

Two separate questionnaires were administered, the first was Young's Internet Addiction (14), which consisted of 20 questions based on Likert 5 - point scale where respondents had to respond to each of the questions based on the relative score and its interpretation of the numbers from 1 to 5 (never = 1, rarely = 2, sometimes = 3, often = 4, and always = 5), as a measure of compatibility with their own state. The studied students were divided based on the scores into three levels (20 to 47 = no addiction, mild addiction = 47 to 74, severe addiction = 74).

The other questionnaire was Maslach Academic Burnout (17). This questionnaire has 15 questions based on Likert 7 - point scale in which respondents had to respond to each questions based on the relative score and its interpretation with numbers 1 through 7 (never = 1, very rarely = 2 , relatively low = 3, sometimes = 4 , relatively high = 5, most of the time = 6, always = 7) as a measure of compatibility with their own state. Validity of the questionnaires has been demonstrated in previous studies (18-20).

To verify the reliability of the questionnaires, Cronbach's alpha was used (0.78 for Internet addiction questionnaire and 0.81 for academic burnout questionnaire).

2.4. Ethical Considerations

The study was approved by Tabriz University of Medical Sciences. All participants voluntarily filled the questionnaires and their informed consents acquired by authors. They were assured that their information will remain anonymous and their responses will be used for this specific research. Permission of authorities of faculty of management and health informatics were obtained and results of this study were provided for them. All ethical considerations in analyzing data and publishing were considered.

2.5. Data Analysis

Data was entered into SPSS - v19 software and analyzed using descriptive statistics (charts, tables, etc.). In addition, after testing the normality of data using Kolmogorov - Smirnov test, linear regression, independent *t* - test and ANOVA were used to investigate the relationship between variables of this study ($\alpha < 0.05$).

3. Results

From the 225 students who participated in this study, 58 (25.9%) were male and 167 (70.5%) were female. A total of 172 (82.7%) of participants were single and 36 (17.3%) were married. In regards to the majors of the students, 108 (49.3%) were majoring in "Health Services Management", 96 (43.8%) were majoring in "Health Information Technology", 7 (3.2%) were majoring in "Medical Records", 2 (0.9 %) were majoring in "Librarianship Student" and 6 (2.7%) were majoring in "Health Economics". In regards to the degree of education, 176 (79%) were studying at a BS level, 38 (17%) were at a MS level, and 9 (4%) were studying at a PhD level. Regarding the residency of students, 63 (29.3%) were natives and 152 (70.7%) lived in a dormitory. In regards to the year the student entered the university, 4 (1.8%) entered in 2010, 51 (23.5%) entered in 2011, 72 (33.2%) entered in 2012, 51 (23.5%) entered in 2013, and 29 (18%) entered in 2014. Regarding the students' average grades 2 (1.4%) had an average of 14, 72 (50%) had an average between 14, and 17 and others had an average up to 17.

As Table 1 shows, the total score of the Internet addiction is very low, 25.35 ± 16.44, which is not indicating an addiction to the Internet among students. The score of academic burnout is 41.83 ± 14.22, which is near to a mild educational burnout.

Table 1. Mean and Standard Deviation of Internet Addiction, Academic Burnout, and Its Three Dimensions among Students

Variables	Mean	SD
Academic burnout	41.83	14.22
Inefficacy	42.66	18.25
Disinterest	42.88	22.6
Emotional exhaustion	41.54	17.61
Internet addiction	25.35	16.44

Results of Table 3 show that there is a significant difference between Internet addiction and burnout ($\alpha \geq 0.05$).

4. Discussion

Internet use in universities and educational environment has led universities and research institutes to be a pioneer in establishing the information and networking infrastructures as well as connection to a global network in Iran (21). Universities of Medical Sciences spend billions of dollars on medical full - text articles and other series, despite the fact that their use has been very low in science centers and among students as well as professors; thus, the average cost for each full - text articles is estimated between 1 and 30 dollars (15). Few Americans in 2002 used the Internet, however, now two - thirds of Americans use the Internet continuously for checking email, messaging, online games, buy goods, store information, and participation in online betting (22). As results show, the average score of Internet addiction is 35.25, which is placed in the second quarter and represents a relatively low dependency of the Management and Medical Information students the Internet. The results from research by Pirzadeh at Isfahan University of Medical Sciences showed that 80.5% of the students are healthy in terms of Internet addiction and 19.5% have a mild addiction; this was consistent with our study (23). However, in a study on students at Isfahan Payame - Noor University, this rate was 8.3, which is not consistent with our study (24). Findings showed the total score of a burnout is in the second quarter, which is close to the expected average -50-. Emotional exhaustion with 41.54 had the lowest score. Kuittinen in a study on the impact of "burnout on the perception of students" on 3031 students reported the average academic burnout in students to be 46%, which is consistent with our study (25).

Dyrbye and colleagues, in a study on 1098 medical students, found that 45% of students are experiencing a burnout, which was consistent with our study (26).

Results showed that except for the sex and being a native, significant differences were found between groups (men and non - natives were more dependent), in any of the other groups there was no significant difference. In the study by Ghahremani and colleagues, there was a significant relationship between Internet addiction and gender; it was higher in boys than girls. The average score of Internet addiction among female students was 30.24 ± 10.8 and 37.26 ± 13.8 among male students, which was consistent with our study (13). Chih - Hung Ko and colleagues and Pawlikowski, Stavropoulos et al., the same result was obtained and the dependence on the Internet in men was higher than women, which was consistent with our study (27-29). However, in the study by Hassanzadeh and Salehi, this rate was high in girls than boys, the results were not consistent with our study (30). In a research by Dadipoor and colleagues at the Hormozgan University of Medical Sciences no significant relationship was found between marital status and Internet addiction, that was not consistent with our results. In addition, in this study, there was no significant relationship between location and Internet addic-

Table 2. Relation between Demographic Variables and Internet Addiction among Students[a]

Variables	Internet Addiction		Educational Burnout	
	Mean	SD	Mean	SD
Gender				
Male	44.03	13.12	42.52	15.67
Female	38.93	12.98	41.51	13.74
Sig.	P = 0.01		P = 0.64	
Marital status				
Single	41.41	13.25	41.91	14.54
Married	35.72	13.29	41.45	14.37
Sig.	P = 0.20		P = 0.86	
Field of study				
Management	42.46	14.48	44.37	14.16
HIT	38.38	11.62	39.36	14.54
Document	37.57	11.47	46.98	4.78
Librarianship	28	4.24	27.22	2.35
Economics	38	7.48	28.7	8.05
Sig.	P = 0.12		P = 0.12	
Average				
Under 14	36.5	6.36	40.55	5.49
14 - 17	41.7	14.51	46.54	12.84
Up to 17	39.85	13.19	40.15	14.04
Sig.	P = 0.66		P = 0.66	
Being native				
Dormitory	41.73	13.66	42.84	14.15
Native	36.87	11.86	38.85	15.03
Sig.	P = 0.01		P = 0.06	
Level of study				
B.S	40.87	13.66	43.18	14.28
M.S	39.1	11.37	37.07	13.31
PhD	32.55	8.77	33.95	12.36
Sig.	P = 0.15		P = 0.15	
Entrance year				
2011	34.25	8.88	44.33	15.44
2012	40.58	13.6	39.06	10.69
2013	38.72	14.96	33.07	13.34
Sig.	P =0.41		P =0.41	

[a] Significance at $\alpha < 0.05$

tion, that was not consistent with our study (31). The results indicate that significant differences were not observed in any of the groups. The gender variable had no relationship with an academic burnout, which was consistent with the findings of Akansel et al., Pines and his colleague, Maslach and Jackson, and Galan and colleagues (19, 32-34). In a research by Sharifard and colleagues, there was no significant relationship among demographic factors of age, mar-

Table 3. Regression Coefficients of Internet Addiction and Academic Burnout in Students[a]

Variables	R	R^2	β	t	f	P Academic Burnout
Internet addiction	0.4	0.16	0.4	6.57	43.25	P < 0.01

[a] Predictor: Internet addiction, Dependent: academic burnout

ital status, and burnout; that was not consistent with our study (35). However, in a research by Yang, Costa et al., Uludag and Yaratan, and Zeinali, it was concluded that an academic burnout is higher in boys than girls, which is not consistent with our study (16, 36, 37). Ried and colleagues also conducted a study on pharmacy students and found that academic burnout is prevalent in older people; this is not consistent with the present study (38). The results indicate that there is a significant relationship between Internet addiction and academic burnout. The results of Mohammad Beigi and colleagues showed that the dependence on the Internet is associated with failing an exam, number of units spent, and low average in recent terms significantly, therefore, it leads to students' academic failure, which was consistent with our study (2). Beard quoted by Moiedfar concluded that the use of Internet, until late, from universities causes the dangers of inappropriate use of the Internet and the problems in the curriculum of academic, this was consistent with our study (39).

4.1. Conclusion

According to the results of this study it can be concluded that this study indicated a low level of Internet addiction among students of faculty of Management Medical Information; this amount was higher in male students and students living in dormitories. This research indicates the average level of academic burnout. The study also showed that there is a significant relationship between Internet addiction and academic burnout. According to the findings, the students' Internet addiction causes academic burnout. Academic burnout prevents students from continuing their education, which in severe cases leads to failure and other social consequences. Therefore, it is necessary that the authorities provide guidelines for identifying possible risks of increase in Internet use among young people and students and encourage the efficient use of this technology to prevent risks including academic burnout. It can recommend diversity in the curriculum so that students are encouraged to work together and study skills - oriented education in order to develop their creativity and avoid excessive use of the Internet, optimum use of the Internet in doing homework and training, and pointing out the dangers of overuse of the Internet.

4.2. Limitation and Strength

Despite efforts of the researchers, this study faced limitations such as lack of cooperation of some students. Another limitation was the fact that only students of one faculty was investigated so the generalizability of results of this study decreases.

On the other hand, since this study was done for first time with the goal of investigation of relation between Internet addiction and educational burnout, the results can be useful for policy makers and planners of educational systems in medical universities.

Acknowledgments

This research was done according to the proposal approved by the Research Committee of Tabriz University of Medical Sciences - code of ethics committee: IR.tbzmed.rec.1393.227. Researchers would like to appreciate the Student Research Committee authorities and Vice Chancellor for Research and Technology at Tabriz University of Medical Sciences, as well as the authorities of the faculty of Management and Health Information and the students participating in the study.

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