MODESTUM
OPEN ACCESS

Original Article

Electron J Gen Med 2018;15(4):em35
ISSN:2516-3507
https://doi.org/10.29333/ejgm/85685

Assessment of addiction to internet, smartphone and social networks among students of medical sciences: a cross sectional study

Saeed Mohammadi[1], Ali Valinejadi[2], Javad Amini Saman[1], Hassanali Karimpour[1], Mahtab Kaivanfar[3], Mojgan Safaeipour[3], Ali Mohammadi[4], Rasool Kawyannejad[5]

ABSTRACT

Objective: Rapid development and prevalent use of smartphone, social networks, and the Internet variously affect the interactions, communications and health of the users. Hereupon, the objective of present study is to determine the overuse of smartphone and addiction to the Internet and social networks among the students of Kermanshah University of Medical Sciences in 2017.

Materials and Methods: This descriptive analytical study was conducted in 2017. Firstly, 350 students from Kermanshah University of Medical Sciences were selected through a randomly clustered method as the sample size. Then the participants filled out the questionnaire about Internet addiction and overuse of smartphone and social networks. Finally, the data were analyzed by SPSS 19software and the results were presented in descriptive and analytical tables.

Results: 321 questionnaires were completely filled out and they were handed over (91.7%). The mean score of Internet addiction was 40.05±20.69 while 19.6% of students did not have Internet addiction. The mild, moderate and severe Internet addictions were 48.6%, 24.6% and 7.2% respectively. Overuse of cellphone was determined51.96±18.55. Low, normal, and excessive uses of cell phone were respectively 9% ،75.4%and 15.6%. The addiction to social networks in cell phones of participants was 30.79±10.57. The rates of normal users, those who were exposed to the addiction and addicted users to social network were 36.4%, 53.9% and 9.7% respectively. There was a significant relationship between Internet and social networks addiction and overuse of smartphone (P = 0.001).

Conclusion: Given the results of this study, students are exposed to the risks and complications of these technologies. Thus, it is essential to have some fruitful programs and strategies to promote students' knowledge and awareness about using the Internet, social networks and smartphone.

Keywords: addiction, smartphone, Internet, social networks

INTRODUCTION

Nowadays millions of users, who are increasing even right now, are using their smartphones to access the Internet and social networks (1). More use of this technology is due to people's tendency to use some of the features of new smartphones such as camera, color display, active dial-up sound, Internet browser, Wi-Fi and easy access to the information via the cell phone (2). Besides, according to researchers the use of online social networks is increasing due to development of technologies such as laptop, smartphone and the Internet (3).

The use of cell phone as one of the latest technologies in the world with various features (4) is due to its applications, software and hardware. Its use is increasing day by day and it also acts as a mobile computer. One of the advantages of

[1] *Department of Anesthesia, School of Medicine, Kermanshah University of Medical Sciences, Kermanshah, Iran.*
[2] *Department of Health Information Technology, School of Allied Medical Sciences, Semnan University of Medical Sciences, Semnan, Iran.*
[3] *School of Paramedical Sciences, Kermanshah University of Medical Sciences, Kermanshah, Iran.*
[4] *Department of Health Information Technology, School of Paramedical Sciences, Kermanshah University of Medical Sciences, Kermanshah, Iran.*
[5] *Department of Anesthesia, School of Paramedical Sciences, Kermanshah University of Medical Sciences, Kermanshah, Iran.*

Correspondence: *Rasool Kawyannejad*
Department of Anesthesia, School of Paramedical Sciences, Kermanshah University of Medical Sciences, Kermanshah, Iran.

E-mail: r.kaviannezhad@kums.ac.ir

Received: 15 Jan 2018, Accepted: 27 Feb 2018

smartphone is the ability of connecting to the Internet, and by its various software it has found its place among social networks and also it has taken the place of web-based social networking. Ironically, these services are very popular among Iranian users; this has led to the increase of number of cell phone users world-wide to five billion by 2010 (5). According to global reports in 2014, most of the cell phone owners (99.8%) were comprised of 20-year-old students aiming to use these features (6). Considering the deep impact of this technology in people's life particularly among the youngsters, there are a few surveys on cell phone addiction or dependency (7), or even the physical and psychological consequences of using cell phone. In spite of significant spread of using smartphone features and applications, the use of these features has been studied rarely.

In behavioral addiction and especially in cell phone addiction, the individual has not substance abuse dependency, but he/she is dependent on use of a device (8). Along with the ever-increasing and wide access to the Internet, a new kind of addiction namely Internet addiction is also growing which is the substantial problem of the information age. Like the other types of addictions, Internet addiction has many symptoms such as depression, bad temper, restlessness, breakdown of social relations and academic failure (9). The increasing number of studies on Internet addiction demonstrates that Internet addiction disorder is a psychological-social disorder characterized with tolerance, withdrawal symptoms, emotional disturbances, and breakdown of social relations (10).

Smartphone addiction, even while the device it is off, may cause anxiety, sleep disorders, confusion, abnormal insomnia and digestive problems (11). Since communication is the most important use of social networks and individuals communicate with various people in a short period, this may results in overuse of these networks in many cases; Internet addiction, emotion decline, depression, and self-confidence diminution are common disorders of social networks addiction (12).

Austin suggested that technology could cause perceptual disruption (13). By separating the youngsters from their families and weakening family relationships and interactivities, smartphone has been effective in forming the new identity of young generation (14). In comparison to face-to-face relationships the reduction of security and superficiality of social relationships are considered as consequences of cell phone use (15). Threat to death (16) and depression caused by bullying via cell phone (17) are other subsequences of using cell phone. Addiction to cell phone and social networks simply indicates that dominance on cell phone is not existed anymore and it notably affect people's life. Behavioral addictions such as addiction to social networks have biological, psychological, and social basis similar to substance abuse addiction's (18).

The use of smartphone, Internet and virtual social networks is an integral part of everyday life of many youngsters and students for academic and non-academic activities, whereas it can directly affect all aspects of life including studying and academic performance (19) and even they can be more exposed to the complications and harmful effects of cell phone use.

In a research on female students Ezoe found that cell phone dependency had a positive relationship with low quality lifestyle and extraversion, and it had a negative relationship with neuroticism (20). Besides, Toda et al. argued that there was a relationship between the overuse of smartphone and unhealthy lifestyle (21). Overuse of smartphone causes some kind of dependency and in severe cases it makes the users feel a monotonous life. This dependency gradually turns into a habit and, as a result, causes some kind of addiction in users (22, 23). The most commonly reported symptoms are headache, ear pain and heat sensation, and sometimes problems in concentration and perceived fatigue have also been reported (24, 25). Another research suggested that there was a relationship between the high use of smartphone and sleep disorders and depression (26). Although activity in social networks facilitates communication with friends (27), it can disrupt the study process by reducing the time of studying among students (28). Some other negative consequences of smartphone use among students are increased anxiety and stress (29). Since the smartphone use is a widespread social and cultural phenomenon, it is significant to study the pattern of smartphone use in populations and special groups (30); moreover, the increasing spread of social networks among Internet users requires investigating the individual and social behaviors (31).

In surveys, high school and university students are recognized as the most leading groups of smartphone users (32). It's very important to assess the rate of using smartphone facilities by these users. This becomes even more important due to the fact that the smartphone is a substantial media tool for awareness and education (33). Therefore, considering the importance of this issue that concerns the spread of smartphone and the use of social networks among different populations especially students, and the effects of these networks on daily routine physiological and psychological functions, the objective of this study is to assess the use of smartphone, and social networks and Internet addiction among the students of Kermanshah University of Medical Sciences in 2017.

MATERIALS AND METHODS

It was a descriptive analytical study which was conducted in 2017. The research population consisted of indigenous students of Kermanshah University of Medical Sciences from undergraduate and post-graduate courses in paramedical, medical, nursing, dentistry, health and pharmacy disciplines. Using Krejcie and Morgan table 350 students were selected through randomly and clustered method. Student's demographic information were recorded which were consisted of age, sex, duration of daily presence in social networks via smartphone, number of years being a member of a social network, number of joined social networks, name of joined social networks, and the reason for using these networks. Criteria for entering the study included being a student of second year and above, using the smartphone with social networks applications, being an indigenous student of Kermanshah city. Due to the problems of dormitories, long distance from home and family and new environment for freshman students that can influence the variables of the study, and in order to increase the accuracy and reliability of study population, only sophomore and indigenous students were selected. The questionnaires were presented to the students by the researchers via visiting different classes in different disciplines while considering the entering criteria.

Cell Phone Overuse Scale Questionnaire: This questionnaire is designed based on psychological index of diagnostic and classification manual of mental disorders. This scale has 23 items and scoring is through a six-point Likert scale (1-never, 2-almost never, 3-sometimes, 4-often, 5-almost always, and 6-always). A score above 75 demonstrates overuse, a score between 74 and 26 shows normal use, and a score below 25 reflect little use (34). Its validity and reliability are confirmed in Iran (21).

Social network addiction questionnaire: The questionnaire was designed with 15 questions in which the items consisted of knowing social networks (Facebook, Orkut, MySpace, Viber, Line, Tango, WeChat, Telegram, Whats-app, etc.) and using them. The items' scoring was based on a five-point Likert scale (from 5=always to 0=rarely). Its validity has been confirmed by the alumni members and its reliability was 0.83 based on Cronbach alpha. Scoring was as following: total score from 1 to 25 assumed that you were a normal user. The scores from 26 to 49 suggested that you were about to get addicted to social networks and it was better to prevent this addiction, and scores from 50 to 75 considered that you were addicted to social networks and you should think about the treatment as soon as possible.

Yang Internet Addiction Questionnaire: It is a standard questionnaire including 20 items being assessed through a five-point Likert scale (rarely, occasionally, often, frequently, and always). The minimum score is 20 and the maximum is 100. Considering the score of participants, four groups were classified as following: no dependency [score of 20 and below], mild addiction to the Internet [score 21-49], moderate addiction [50-79], and severe addiction [80-100]. The questionnaire's validity and reliability were confirmed in national researches (35, 36, 37). In the study, the reliability of the tool was confirmed as 0.81 by Cronbach alpha (38).

In order to meet ethical considerations, some brief comments about questionnaires were given to students before distributing questionnaires. At the beginning, the subjects were given assurance by declaring that the questionnaires were only for a research project and the results would not affect their life and they would remain confidential. The present research was approved by Ethics Committee of Kermanshah University of Medical Sciences with code number of 328. The data were analyzed using SPSS 19 software and results were presented with descriptive and inferential statistics.

RESULTS

Out of 350 research subjects, 321 cases (91.7%) completely filled out the questionnaires. Among the subjects there were 113 men (35.2%) and 208 (64.8%) women. The mean age of the subjects was 21.83 ± 1.81 years. The daily time of using cell phone was 3.33±1.4 hours and the daily time of presence in social networks via smartphone was 4.07±3.08 hours. The duration of their membership in social networks was 2.9±1.57 years. The highest rates of membership in social networks were seen in Telegrams (92.83%) and Instagram (48.59%) respectively. The results of using social networks are depicted in **Table 1**.

Table 1: *Frequency of membership in social networks among students*

Social Network	Telegram %	Instagram %	Facebook %	Line %	Viber %	Tweeter %	Tango %	WeChat %	Whatsapp %	LinkedIn %	Youtube %	Status %	Others %
Frequency	92.83	48.59	38.31	32.08	28.66	15.26	14.95	12.46	9.96	9.56	5.6	4.67	3.11

Table 2: *The Relationship between Cell Phone Overuse and Addiction to Social Networks*

Significance Level	Pearson Correlation Coefficient	Mean (SD)	Numbers	Variable
0.001	0.68	51.96 (18.55)	321	cell phone overuse
		30.79 (10.57)	321	Addiction to Smartphone's social networks

Table 3: *The Relationship between Internet Addiction and Cell Phone Overuse*

Significance Level	Pearson Correlation Coefficient	Mean (SD)	Numbers	Variable
0.001	0.61	51.96 (18.55)	321	cell phone overuse
		40.05±20.69321	321	Internet addiction

Table 4: *The Relationship between Internet Addiction and Social Networks Addiction*

Significance Level	Pearson Correlation Coefficient	Mean (SD)	Numbers	Variable
0.001	0.7	30.79 (10.75)	321	social networks addiction
		40.05±20.69	321	Internet addiction

The most common reasons for using social networks were respectively communication with friends (94.39%), scientific information and news (80.99%), entertainment and fun (71.65%), sharing movies and photos (48.59%), solitude (34.26%), activity in groups and channels (26.66%), and other reasons (9.34%).

The rate of Internet addiction among the subjects was 40.05±20.69; moreover, the rates of no dependency, mild, moderate and severe addictions were 19.6, 48.6, 24.6 and 7.2% respectively. Based on COS criteria, the use of cell phone among subjects was 51.96±18.55 and also low, normal and excessive uses of cell phone were 9%, 75.4% and 15.6%, respectively.

The rate of addiction to smartphone's social networks among subjects was 30.79±10.57 and based on the same scale, the rate of normal users, exposed to get addicted users and social network addicted users were respectively 36.4%, 53.9% and 9.7%.

The relationship between variables of cell phone overuse and addiction to social networks and Internet are shown in **Tables 2**, **3**, and **4**.

There is a positive correlation and significant relationship between cell phone overuse and the rate of addiction to social networks.

There is a positive correlation and significant relationship between cell phone overuse and the Internet addiction.

There is a positive correlation and significant relationship between Internet addiction and social networks addiction.

DISCUSSION

Today, the smartphone with its facilities is one of the most popular means of communications; however, its popularity is to the extent that it hides and ignores serious harms of this modern technology. The effects of this technology along with its hardware and software enhancements such as its on-board applications and the Internet, as well as the development of operators' infrastructures to increase services to the users and economic benefits, all can increase the incidence of unwanted consequences. These consequences can be led to unwanted anomalies in personal, social, cultural, behavioral, psychological, medical, and legal aspects.

Like the study of Boyd et al. the findings of this study indicate that among the reasons to use social networks the most common reasons are to keep in touch with friends, entertainment, fun, and news (39).

The results of this study about using the Internet showed that most of the subjects had a mild Internet addiction and only 24.6% and 7.2% of subjects had moderate and severe addiction, respectively. In the study of Khatib et al., the moderate addiction to Internet was reported 23.8% which was similar to this study's results, but the rates of normal and non-addicted users did not correspond to the findings of present study (40). One reason for this discrepancy can be due

to the study's population considering the educational discipline and faculty, because medical faculties and their students are more involved in the Internet and various medical sites. On the other hand, the study of Lashgarara et al., argued that the rate of Internet addiction in students was 34% (41) while it was 33% in another study (38). Shek, in a study in China, stated that 91.1% of adolescents had Internet addiction (42) and Moreno in a study reported the rate of 26% for this trend (43). In addition to that, Vahabi showed a moderate and severe Internet addiction of 25.8% and 4.4%, respectively (37). In the study of Wang et al. severe Internet addiction was reported 4% which was nearly associated with the results of present study. Another study on students in Turkey suggested an Internet addiction of 9.7% (45). Some reasons to this kind of addiction among students and other people of society are the existence of laptop, tablet computer, and smartphone, as well as the coverage of Internet access in various locations using Wi-Fi hotspots and cell phone operators. On the other hand, medical sciences students use Internet and medical websites as one of the key resources in education and research. Internet addiction can cause mental disorder, depression, decline in social relationships, insomnia, disruption of individual activities, absence at work, loss of work, and academic failure (39, 46).

According to the results of cell phone use, the rate of normal use was seen in most students, and only 15.6% of students have high use and overuse rates; while this rate was reported as 5.5% in the study of Atadokht on the students of Mohaghegh Ardabili University (47), whereas in Mohammadbeigi's study in Qom the rate of cell phone overuse in medical students was reported as 10.7% (47). Hauget al., reported the rate of 16.9% for cell phone addiction among students of Switzerland (48). Furthermore, a study in India showed that the rate of cell phone addiction was33.33% among teenagers (49). A survey done by Nehra et al. indicated that the rate of cell phone addiction among adults was reported from 33.5% to 39.6% (50). One of the factors contributing to the increase of this dependency is the hardware and software of cell phone, because these features are used as an access to information, education, entertainment, games, news, photography, videos and communications. Moreover, there are many other cell phone facilities that make it even more useful including specialized working fields, banking services and online shopping.

The rate of social network addiction was 9.5% in the present study, while 53.9% of students are about to be addicted to these networks. In the study of Masters on medical students the rates of addiction to social networks were as below: 2.2%, 47.14%, and 33.3%, respectively for Facebook, YouTube and Twitter (51); however, in another study, social network addiction was reported as 33% (38). Bashirpour et al., in Iran reported a mild to severe social network addiction as 62% and 44% respectively for male and female students (35). Nowadays, the use of virtual social networks is becoming more and more popular, and social networking websites have become the most utilized Internet services after great portals such as Yahoo or MSN and famous search engines like Google. One of the reasons for this is the attractiveness and features that users can find in these programs; for example, Facebook allows the users to create an online profile to show their own images. They can also have online and offline communication with their friends, and see others' profiles. Facebook has become the second most visited site in the world (37). These communication technologies can have positive outcomes in addition to having negative consequences; one of the positive outcomes is that the smartphone provides the use of social networks and reduces the feeling of loneliness (52) and it also helps to make new friends (53). Facilitating personal needs in the work field, informing and receiving news, chatting and talking with others, accessibility, using applications and other facilities such as camera, and facilitating communication with family members and relatives are some other positive outcomes of using smartphone that made it increasingly popular in all age groups (54).

CONCLUSION

The findings of this study portrayed a significant relationship between overuse of smartphone and social networks addiction. The reasons for this significant and direct relationship are the capability of new generation smartphones for using mobile social networks applications and features of cell phone operators with broad coverage of the third and fourth generations Internet to increase the access of users to these networks. According to the results of this study, the use of these technologies among students is rapidly increasing but they are exposed to the consequences of this technology. On the other hand, the facilities and features of smartphones such as social networks applications and accessible Internet have made them more widely be used, so their complications have become more tangible. In order to prevent such complications, academic centers and universities, families, and the media should develop and implement strategic training programs to teach the culture of proper use of cell phone and social networks and they should define their hazards and complications.

ACKNOWLEDGEMENTS

We are grateful to the authorities, university chancellors and the students for their helpful feedback throughout this project and filling out the questionnaires.

REFERENCES

1. Racha A, Nabeel Al, Noha R. Privacy issues in mobile social networks. Procedia Computer Science. 2012;10:672-679. https://doi.org/10.1016/j.procs.2012.06.086
2. Ling C, Hwang W, Salvendy G. Diversified users' satisfaction with advanced mobile phone features. Universal Access in the Information Society. 2006;5(2):239-249. https://doi.org/10.1007/s10209-006-0028-x
3. Andreassen C, Pallesen S. Social network site addiction - an overview. Current pharmaceutical design. 2014;20(25):4053-4056. https://doi.org/10.2174/13816128113199990616 PMid:24001298
4. Head M, Ziolkowski N. Understanding student attitudes of mobile phone features: Rethinking adoption through conjoint, cluster and SEM analyses. Computers in Human Behavior. 2012;28(6):2331–2339. https://doi.org/10.1016/j.chb.2012.07.003
5. Baghiyani Moghadam MH, Shahbazi H. An Explanatory Analysis of Mobile Phone Usage Pattern among Medical Students of Yazd Shahid Sadoghi University of Medical Sciences. Global Media Journal. 2011;6(11):1-14.
6. Korea Internet and Security Agency. Internet Use Survey Report. 2014. Available from: http://isis.kisa.or.kr/board/index.jsp
7. Yen CF, Tang TC, Yen JY, Lin HC, Huang CF, Liu SC. Symptoms of problematic cellular phone use, functional impairment and its association with depression among adolescents in Southern Taiwan. Journal of adolescence. 2009;32(4):863-73. https://doi.org/10.1016/j.adolescence.2008.10.006 PMid:19027941
8. Alavi SS, Mohammadi MR, Jannatifard F, Mohammadi Kalhori S, Sepahbodi G, BabaReisi M. Assessment of Semi-Structured Clinical Interview for Mobile Phone Addiction Disorder. Iran J Psychiatry. 2016;11(2):115-119. PMid:27437008 PMCid:PMC4947219
9. Shahghassemy A. Review on effect of virtual space field on communication theories. Global Media Journal. 2006;2(2):31-7.
10. Ferris RJ. Internet addiction disorder, causes, symptoms and consequences. Psychology Virginia Tech. 2002. Available from: http://www.files.chem.vt.edu/chem-dept/dessy/honors/papers/ferris.html
11. Hassanzadeh R, Rezaei A. Effect of sex, cours and age on SMS addiction in student Middle-East. Journal of scientific Reserch. 2011;10(5):619-625.
12. Zokaee M, Katibi F. Relationship of presence in cyberspace and modern identity, research in young Iranian internet users. QJSS. 2012;(33):34-7.
13. Austin C. Impact of cell phone disruptions on perceptions and impressions. Journal of Experimental Social Psychology. 2001;13(2):141-54.
14. Lorente S. Youth and mobile telephones: more than a fashion. Journal of Revista de studios de juventud. 2002;57(2):9-24.
15. Laru JI, Jarvela S. Social patterns in mobile technology mediated collaboration among member of the professional distance education community. Educational Media International. 2008;54(1):17-32. https://doi.org/10.1080/09523980701847131
16. Nicol A, Fleming MJ. The influence of normative beliefs and hostile response selection in predicting adolescents' mobile phone aggression-A pilot study. Journal of School Violence. 2010;9(2):212-31. https://doi.org/10.1080/15388220903585861
17. Raskauskas J. Associations with traditional bullying and depression among New Zealand adolescents. Journal of School Violence. 2010;9(1):74-97. https://doi.org/10.1080/15388220903185605
18. Jorgenson AG, Hsiao RC, Yen CF. Internet Addiction and Other Behavioral Addictions. Psychi atric Clinics of North America. 2016;25(3):509-520. https://doi.org/10.1016/j.chc.2016.03.004
19. Thomson L, Dawson K, Ferdig R, Black EW, Bayer J , Coutts J. The Intersection of online social networking with Medical professionalism. J Gen Inter Med. 2008;23(7):954-7. https://doi.org/10.1007/s11606-008-0538-8 PMid:18612723 PMCid:PMC2517936

20. Ezoe S. Relationships of personality and lifestyle with mobile phone dependence among female nursing students. Social Behavior and Personality: an international journal. 2009;37:231-238. https://doi.org/10.2224/sbp.2009.37.2.231
21. Toda M, Monden K, Kubo K, Morimoto K. Mobile phone dependence and health related lifestyle of university students. Social Behavior and Personality: An international journal. 2006;34(10):1277-1284. https://doi.org/10.2224/sbp.2006.34.10.1277
22. Kamibeppu K, Sugiura H. Impact of the mobile phone on junior high-school students' friendships in the Tokyo metropolitan area. Cyberpsychol Behav. 2005;8(2):121–130. https://doi.org/10.1089/cpb.2005.8.121 PMid:15938651
23. Billieux J, Van der Linden M, d'Acremont M, Ceschi G, Zermatten A. Does impulsivity relate to perceived dependence on and actual use of the mobile phone? Appl Cognitive Psychol. 2007;21(4):527–37. https://doi.org/10.1002/acp.1289
24. Korpinen Lh, Paakkonen RJ. Self-report of physical symptoms associated with using mobile phones and other electrical devices. Bioelectromagnetics. 2009;30(6):431-437. https://doi.org/10.1002/bem.20500 PMid:19399784
25. Johansson A, Nordin S, Heiden M, Sandstrom M. Symptoms, personality traits, and stress in people with mobile phone- related symptoms and electromagnetic hypersensitivity. J Psychosomatic Res. 2010;68(1):37-45. https://doi.org/10.1016/j.jpsychores.2009.06.009 PMid:20004299
26. Lemola S, Perkinson-Gloor N, Brand S, Dewald-Kaufmann JF, Grob A. Adolescents' electronic media use at night, sleep disturbance, and depressive symptoms in the smartphone age. Journal of Youth and Adolescence. 2015;44(2):405–418. https://doi.org/10.1007/s10964-014-0176-x PMid:25204836
27. Pempek TA, Yermolayeva YA, Calvert SL. College students' social networking experiences on facebook. J Appl Dev Psychol. 2009;30(3):227–238. https://doi.org/10.1016/j.appdev.2008.12.010
28. Kirschner PA, Karpinski AC. Facebook and academic performance. Computer in Human behavior. 2010;26(6):1237-1245. https://doi.org/10.1016/j.chb.2010.03.024
29. Farahani HA, Kazemi Z, Aghamohamadi S, Bakhtiarvand F, Ansari M. Examining mental health indices in students using Facebook in Iran. Procedia: Social and Behavioral Sciences. 2011;28:81-94. https://doi.org/10.1016/j.sbspro.2011.11.148
30. Mazaheri MA, Mohamed F, Karbasi M. Mobile phone usage patterns among students in Iran. RRAMT. 2014;40(1):313-319.
31. LaRose R, Lin CA, Eastin MS. Unregulated internet usage: Addiction, habit, or deficient self regulation? Media Psychology. 2003;5:253–225. https://doi.org/10.1207/S1532785XMEP0503_01
32. Jurisic B, Azevedo A. Building customer–brand relationships in the mobile communications market: The role of brand tribalism and brand reputation. Journal of Brand Management. 2010;18(4):349-356
33. Hareva DH, Okada H, Kitawaki T, Oka H. Supportive intervention using a mobile phone in behavior modification. Acta Med Okayama. 2009;63(2):113-20. PMid:19404343
34. Jenaro C, Gomez VM, Gonzlez GF, Caballo C. Addiction Research & Theory Problematic Internet and cell-phone use. Psychological, behavioral, and health correlates. 2007;15(3):309-322.
35. Shayegh S, Azad H, Bahrami H. On the relationship between internet addiction and personality traits in adolescents in Tehran. Quarterly Journal of Fundamentals of Mental Health. 2009;11(42):149-158.
36. Dargahi H, Razavi M. Internet addiction and, affecting factors on it in the residents of zone 2 of Tehran city. Journal of Payesh. 2007;6(3):265- 272.
37. Vahabi A, Vahabi B, Rajabi N, Taifuri S, Ahmadian M. Evaluation of internet addiction and its related factors in the students of Kurdistan University of Medical Sciences. J Med Edu Dev. 2015;8(19):99-110.
38. Nastizaei N. The relationship between general health and internet addiction. Tabib-E-Shargh. 2009; 11(1):57-63.
39. Boyd D, Ellison N. Social Network Sites: Definition, History and Scholarship. Journal of Computer-Mediated Communication. 2007;133:210-230. https://doi.org/10.1111/j.1083-6101.2007.00393.x
40. Khatib Zanjani N, AgahHaris M. The prevalence of internet addiction among the students of Payam Noor University, Semnan province. Media Journal. 2014;5(2):1-7.
41. Lashgarara B, Taghavi SM, Maheri AB, Sadeghi R. Internet addiction and general health of dormitory students of TehranUniversity of Medical Sciences in 2010. 2012;10(1):67-76.

42. Shek DT, Tang VM, Lo CY. Internet addiction in Chinese adolescents in Hong Kong: Assessment, profiles, and psychosocial correlates. The Scientific World Journal. 2008;8:776–787. https://doi.org/10.1100/tsw.2008.104 PMid:18690381
43. Moreno MA, Jelenchick L, Cox E, Young H, Christakis DA. Problematic internet use among US youth: a systematic review. Arch Pediatr Adolesc Med. 2011;165(9):797-805. https://doi.org/10.1001/archpediatrics.2011.58 PMid:21536950 PMCid:PMC3215336
44. Wang W. Internet dependency and psychosocial maturity among college students. International Journal of Human-Computer Studies. 2001;55:919-938. https://doi.org/10.1006/ijhc.2001.0510
45. Canan F, Ataoglu A, Ozcetin A. The association between internet addiction and dissociation among Turkish college students. Compr Psychiatry. 2012;53(5):422-426. https://doi.org/10.1016/j.comppsych.2011.08.006 PMid:22000475
46. Jelenchick LA, Becker T, Moreno MA. Assessing the psychometric properties of the internet addiction test (IAT) in US college students. Psychiatry Res. 2012;196(3):296-301. https://doi.org/10.1016/j.psychres.2011.09.007 PMid:22386568 PMCid:PMC3361600
47. Atadokht A. The ralationship of cell phone overuse with psychopathology of sleep habits and sleep disorders in university students. Journal of Nursing and Midwifery Urmia University of Medical Sciences. 2016;14(2):136-144.
48. Haug S, Castro RP, Kwon M, Filler A,Kowatsch T, Schaub MP. Smartphone use and smartphone addiction among young people in Switzerl. .J Behav Addict. 2015;4(4):299-307. https://doi.org/10.1556/2006.4.2015.037 PMid:26690625 PMCid:PMC4712764
49. Nikhita CS, Jadhav PR, Ajinkya SA. Prevalence of Mobile Phone Dependence in Secondary School Adolescents. J Clin Diagn Res. 2015;9(11):VC06-VC09. https://doi.org/10.7860/JCDR/2015/14396.6803
50. Nehra R, Kate N, Grover S, Khehra N, Basu D. Does the Excessive use of Mobile Phones in Young Adults Reflect an Emerging Behavioural Addiction? J Postgrad Med Edu Res. 2012;46(4):177-82. https://doi.org/10.5005/jp-journals-10028-1040
51. Masters K. Social Networking Addiction among Health Sciences Students in Oman. Sultan Qaboos Univ Med J. 2015;15(3):357–363. https://doi.org/10.18295/squmj.2015.15.03.009 PMid:26357556 PMCid:PMC4554270
52. Ogata Y, Izumi Y, Kitaike T. Mobile-phone e-mail use, social networks, and loneliness among Japanese high school students. Japanese Journal of Public Health. 2006;53:480-92. PMid:16944832
53. Kamibeppu K, Sugiura H. Impact of the Mobile Phone on Junior High School Students' Friendships in the Tokyo Metropolitan Area. Cyberpsychol Behav. 2005;8:121-130. https://doi.org/10.1089/cpb.2005.8.121 PMid:15938651
54. Kousari M, Javadi Yegane MR, Kheuikhah T. The uses of mobile phone among the Iranian users: applying the uses and gratification theory. Cultural studies & Communication. 2007;2(7):205-226.

◇◈◈◈◈◈◇

http://www.ejgm.co.uk