JCHR

Journal of Community Health Research 2023; 12(1): 81-89.

Investigating the Relationship between Internet Addiction and Dietary Behavior among Students: an analytical cross-sectional study

Ali Dehghani [1], Asieh Darvish [2*], Atefeh Barikani [2]

1. Department of Community Health Nursing, School of Nursing, Jahrom University of Medical Sciences, Jahrom, Iran
2. Department of Medical Surgical Nursing, School of Nursing and Midwifery, Tehran, Iran

ARTICLE INFO

Original Article

Received: 01 Aug 2021
Accepted: 19 Dec 2022

OPEN ACCESS

Corresponding Author:
Asieh Darvish
sedarvish@yahoo.com

ABSTRACT

Background: Internet addiction can affect students' general health. Regarding to the importance of healthy eating and the impact on health and academic achievement of students. This research was conducted to aim the assessment of relationship between internet addiction and dietary behavior among students.

Methods: In this an analytical cross-sectional study, 373 nursing and midwifery students of Tehran University of Medical Sciences participated in 2020. Data were collected by Young's Internet Addiction Scale, demographic data and Dietary Behavior questionnaire. Data analyzed by SPSS V.21 and descriptive indicators including frequency, percentage, and inferential tests including chi-square test. A significance level of less than 0.05 was considered.

Results: The majority of the student population had no internet addiction by 91.4%. Also, 8.3% and 0.3% from student population were potential risk and high risk respectively. There was a statistical significant correlation between levels of internet addiction and dietary behavior in high-fat diets ($r = 0.483$, $P = 0.004$), snacking ($r = 0.455$, $P < 0.001$), emotional eating behavior ($r = 0.543$, $P < 0.001$) and poor dietary pattern ($r = 0.632$; $P < 0.001$).

Conclusions: It is suggested to improve students' beneficial use of the internet with training and improve their dietary behavior.

Keywords: Addiction, Nursing, Midwifery, Students, Dietary, Addictive behavior

How to cite this paper:

Dehghani A, Darvish A, Barikani A. Investigating the Relationship between Internet Addiction and Dietary Behavior among Students: an analytical cross-sectional study. J Community Health Research 2023; 12(1): 81-89.

[DOR: 20.1001.1.23225688.2023.12.1.10.3]

[DOI: 10.18502/jchr.v12i10.13153]

[DOR: 20.1001.1.23225688.2023.12.1.10.3]

[DOI: 10.18502/jchr.v12i10.13153]

Introduction

The internet is an important tool for social relationships, information and entertainment, and one of the most accessible media in the world because it has a lot of activities and programs that users can participate in and connect with others around the world. Thus, adolescents and young people are one of these commercial market main objectives (1). Among Internet users in Iran 98% is estimated between the ages of 20 to 30 (2). Internet activities and technologies are rapidly advancing and are attractive for young people (3). Studies have shown that 71.4% of the United States people use the internet (4). Despite of the fact that new communication tools have a positive impact such as up to date data access, scientific literature dissemination, communication between researchers etc., but also have a detrimental impact. The prevalence of internet addiction (IA) has been reported 1.5% to 25% in different countries (5). The prevalence of Internet addiction has been reported 9.5% to 10% in Iran (6) in the Mazloomy Mahmoudabad et al study, prevalence of Internet addiction has been reported 49% among university of medical science. However, different populations were studied and the findings are not comparable directly (7).

Internet addiction disorder is described as overuse of the internet that interferes with daily life and can impair daily function and cause tension when the internet is not accessible. Internet addiction is classified as a mental disorder in DSM-5 (8). Overuse of the internet among users has been accompanied with problems. For example, in a study, prevalence of depression was higher among users who were internet addicted (9). Some studies also showed that Internet addiction has negative and inverse impacts on lifestyle agents such as causing irregular food habits, spending long periods of time in the Internet, lacking physical activity and reducing sleep time (10-12). Kargar et al, 2013 mentioned the importance of hormonal, physical, emotional and behavioral changes in adolescent with increase in eating fast food and carbonated drink, as well as decrease of activity due to long hours of watching television, playing computer games, may lead to the risk of diseases in adulthood (13).

University students are one of the vulnerable groups in Internet addiction. The internet is a reliable source for finding personal and professional information needs for university students. Students are groups that have largely unfettered, unsupervised access to the Internet and independent control of their time. It has been estimated that problematic usage in college students varies from 1% to 26% in the US and from 6% to 19% internationally (14).

Several studies conducted on students indicate that the internet use rate among students is increasing. Adolescents and students, particularly those in the age range of 15 to 24, are mostly under health-risk behaviors such as smoking, drinking, and adopting poor dietary behaviors. These behaviors lead to multiple adverse health outcomes among them (15). Results of Kim et al study showed that in the addicted users, irregular dietary behaviors due to loss of appetite, high rate of skipping meals, and nutritional imbalances were reported and nutrition quality among them was worse than those who were at risk of internet addiction or no risk internet addiction (16). Another study mentioned that eating disorders can be the reason for many chronic diseases. The study using a food frequency questionnaire determined that among the participants of African American women 0.22 to 0.47 were micronutrient and 0.33 to 0.58 were macronutrient intakes and showed the relationship to eating behavior (17).

The students are known as a vulnerable group due to technology integration in their education. They often easily have access to the internet in universities and the workplace (18). Since the students have professional positions and educational needs, they spend a lot of time on the internet programs. It can affect lifestyle, and dietary behaviors. The information about the dietary behaviors based on the internet addiction levels among university students is limited; therefore, this study aimed to determine

a) Internet addiction levels
b) Dietary behaviors
c) The dietary behaviors based on the internet addiction levels, among nursing and midwifery students.

Methods

This research was an analytical cross-sectional study on internet addiction and dietary behavior among nursing and midwifery students in Tehran University of Medical Sciences in 2020. The sample size by considering the 15% prevalence of internet addiction in Iran (2), significant level of 0.05, and d = 0.037 of 400 people was calculated. Finally, out of 400 questionnaires distributed among students, 373 questionnaires were completed and returned.

The sampling method in this study was stratified sampling, taking into account the size of the nursing and midwifery students, the required number of samples were randomly selected from each field of study according to the inclusion criteria.

Inclusion criteria included, being an internet user during the last 6 months with approximately used of once per month. Exclusion criteria included those treated for chronic diseases and nutritional disorders.

Measures

Demographic questionnaire

Demographic questionnaire consisted of age, gender, marital status, field of study, degree of study, study year, parental education, parent's income, employment status, sleep time and disorder, reason of internet use, place of internet use, and status of residence.

Young's Internet Addiction Test (IAT)

Internet addiction was measured using the 20-item IAT questionnaire. The participants were asked to respond to each item using a 5-point scale ranging from 1 till 5, never to always (a total score range 20 to 100). The subjects were defined into three groups: no risk IA (scores: 20 to 49), Potential risk IA (scores: 50 to 79) and high risk IA (scores: 80 to 100). Young's Internet Addiction Scale Data is a standard questionnaire and its validity and reliability has been confirmed in several studies (10; 18). Persian version of the scale was developed after translations and used in Iran; the reliability with Cronbach's Alpha 0.91 has been approved. Moreover, the validity of the Persian translated version of the scale was sufficient (19). In our study, the number of 20 students completed questionnaires and reliability coefficients with α = 0.88 have been confirmed.

The dietary behavior questionnaire

The dietary behavior questionnaire as a self-made questionnaire was designed by researchers and inspired by Kim et al study in Korea (16) and Eating Behavior Patterns Questionnaire (EBPQ), (20). Then validity and reliability were determined. The questionnaire was translated and validated for use in the Iranian students by the Dehghan et al and its validity and reliability were confirmed (20). For validity, 10 professors of the department of nutrition received comments and necessary corrections were applied after review. For reliability, 20 questionnaires were completed by students and Cronbach's alpha coefficient with the 0.90 was confirmed. The Cranach's alpha coefficient for six dimensions of questionnaire of high fat eating (0.93), snacking (0.89), emotional eating (0.91), no planning ahead (0.86), meal skipping (0.88) and poor dietary pattern (0.95) was confirmed. This questionnaire included 44 items. It should be noted that the three questions were common among dimensions. Questionnaire analysis was as follows: the mean score in each dimension with more than 75% shows good nutritional behavior, between 50% to 75%, shows moderate, and fewer than 50% shows weak nutritional behavior. The questionnaires were provided to the students by the researcher and after completion, they were collected again by the researcher at the same time.

Statistical analysis:

Data was analyzed by SPSS 21. Statistical analysis was performed with chi-square test. A significance level of less than 0.05 was considered.

Results

Among the number of 373 participants in the study, 23.60% (88) were male and 76.40% (285) were female. Participant's degree of study included

[DOR: 20.1001.1.23225688.2023.12.1.10.3]
[DOI: 10.18502/jchr.v12i10.13153]

Bachelor 73.20% (273), master 20.64% (77) and PhD 6.16% (23) with nursing 74.26% (277) and midwifery 21.71% (96) field of study. Most were in the age of 20 to 25 44.51% (166) and were in the second year of study 39.15% (146). The majority of the population reported moderate parent's income 56.84% (211). Most of them 83.91% (313) had no sleep disorder. The result has shown that most of the participants use internet one hour per day 41.83% (156). The reason for internet use was scientific information seeking 42.36% (158) rather than checking email 19.30% (72) and hobby 35.13% (13). Among the study population, 91.4% (341) had no internet addiction, Table 1.

Table 1. The correlation between level of internet addiction and demographic characteristics among students

		No risk IA (n=341)91.4%	Potential risk IA (n=31)8.3%	High risk IA (n=1)0.3%	P value
Gender	Female	260 (91.2)	25 (8.8)	0 (0)	*P = 0.116
	Male	81 (92)	6 (6.8)	1 (1.1)	
Marital status	Single	275 (90.2)	29 (9.5)	1 (0.3)	*P = 0.033
	Married	64 (97)	2 (3)	0 (0)	
Field of Study	Nursing	251 (90.6)	25 (9)	1 (0.4)	*P = 0.316
	Midwifery	76 (79.2)	20 (20.8)	0 (0)	
Degree of Study	Bachelor	248 (90.8)	24 (8.8)	1 (0.4)	*P = 0.489
	Master	71 (92.2)	6 (7.8)	0 (0)	
	PhD	22 (95.7)	1 (4.3)	0 (0)	
Age	Below 20	117 (90)	12 (9.2)	1 (0.8)	*P = 0.766
	20-25	151 (91)	15 (9)	0 (0)	
	25-30	36 (94.7)	2 (5.3)	0 (0)	
	More than 30	1 (50)	1 (50)	0 (0)	
Study year	First year	97 (88.2)	12 (10.9)	1 (9)	*P = 0.345
	Second year	137 (93.8)	9 (6.2)	0 (0)	
	Third year	75 (90.4)	8 (9.6)	0 (0)	
	Fourth year	22 (95.7)	1 (4.3)	0 (0)	
	More than 4th	2 (66.7)	1 (33.3)	0 (0)	
Parent's income	Weak	7 (87.5)	1 (12.5)	0 (0)	*P = 0.805
	Moderate	196 (92.5)	15 (7.1)	1 (0.5)	
	Good	128 (92.1)	11 (7.9)	0 (0)	
	Very good	8 (80)	2 (20)	0 (0)	
Sleep Disorder	Yes	48 (80)	11 (18.3)	1 (1.7)	*P < 0.001
	No	293 (93.6)	20 (6.4)	0 (0)	
The time of internet use (hour/day)	0 hour	17 (100)	0 (0)	0 (0)	*P < 0.001
	1 hour	152 (97.4)	4 (2.6)	0 (0)	
	2-4 hours	132 (89.2)	16 (10.8)	0 (0)	
	4-6 hours	31 (79.5)	8 (20.5)	0 (0)	
	More than 6	9 (69.2)	3 (23.1)	1 (7.7)	
Reason of internet use	Email check	63 (87.5)	9 (12.5)	0 (0)	*P < 0.001
	Scientific	151 (95.6)	7 (4.4)	0 (0)	
	Hobby	117 (89.3)	13 (9.9)	1 (0.8)	
Place of internet use	Home	218 (92)	18 (7.6)	1 (4)	*P = 0.325
	University	105 (90.5)	11 (9.5)	0 (0)	
	Coffee Net	7 (100)	0 (0)	0 (0)	
	Work place	7 (87.5)	1 (12.5)	0 (0)	
Status of residence	Dormitory	117 (91.4)	10 (7.8)	1 (0.8)	*P = 0.064
	Rented home	12 (100)	0 (0)	0 (0)	
	With family	208 (90.8)	21 (9.2)	0 (0)	

[DOR: 20.1001.1.23225688.2023.12.1.10.3]
[DOI: 10.18502/jchr.v12i10.13153]

		No risk IA (n=341)91.4%	Potential risk IA (n=31)8.3%	High risk IA (n=1)0.3%	P value
Employment status	Employed	102 (96.2)	4 (3.8)	0 (0)	*P = 0.097
	Not employed	238 (89.8)	26 (9.8)	1 (0.4)	
Parents educational status	Elementary	50 (90.9)	5 (9.1)	0 (0)	*P = 0.767
	Secondary	56 (94.9)	3 (5.1)	0 (0)	
	High School	131 (90.3)	14 (9.7)	0 (0)	
	College	99 (90.8)	9 (8.3)	1 (0.9)	
Regular sleep time	Mostly regular	31 (91.2)	3 (8.8)	0 (0)	*P = 0.049
	Always regular	164 (95.3)	8 (4.7)	0 (0)	
	Sometimes	85 (87.6)	11 (11.3)	1 (1)	
	Most not regular	48 (84.2)	9 (15.8)	0 (0)	
	always not regular	13 (100)	0 (0)	0 (0)	

* Chi-square test

Distribution of dietary behaviors and its levels among students are provided in Table 2. It shows that the majority of students had weak dietary behavior in planning ahead 69.2% (258), High fat eating 58.2% (217), emotional eating 57.6% (215), meal skipping 49.9% (186), snacking 41.3% (154) and poor dietary pattern 21.7% (81).

Table 2. Distribution of Dietary behaviors levels among students

Dietary behavior	Weak	Moderate	Good
High fat eating	217 (58.2)	142 (38.1)	14 (3.8)
Snacking	154 (41.3)	208 (55.8)	11 (2.9)
Emotional eating	215 (57.6)	148 (39.7)	10 (2.7)
No planning ahead	258 (69.2)	108 (29)	7 (1.9)
Meal skipping	186 (49.9)	178 (47.7)	9 (2.4)
Poor dietary pattern	81 (21.7)	260 (69.7)	32 (8.6)

Based on the findings of table 3, there is a significant relationship between internet addiction levels and dietary behavior of students in high fat eating dimension, snacking, emotional eating and poor dietary pattern.

Table 3. Dietary behavior based on the level of internet addiction among students

Dietary behavior domains		No risk	Potential risk	High risk	P value
High fat eating	Weak	196 (90.3)	21 (9.7)	0 (0)	*P = 0.004
	Moderate	132 (93)	9 (6.3)	1 (0.7)	
	Good	13 (92.2)	1 (7.1)	0 (0)	
Snacking	Weak	133 (86.4)	20 (13)	1 (0.6)	*P < 0.001
	Moderate	197 (94.7)	11 (5.3)	0 (0)	
	Good	11 (100)	0 (0)	0 (0)	
Emotional eating	Weak	200 (93)	15 (7)	0 (0)	*P < 0.001
	Moderate	132 (89.2)	15 (10.1)	1 (0.7)	
	Good	9 (90)	1 (10)	0 (0)	
No planning ahead	Weak	237 (91.9)	20 (7.8)	1 (0.4)	*P = 0.111
	Moderate	98 (90.7)	10 (9.3)	0 (0)	
	Good	6 (85.7)	1 (14.3)	0 (0)	

[DOR: 20.1001.1.23225688.2023.12.1.10.3]
[DOI: 10.18502/jchr.v12i10.13153]

Dietary behavior domains		No risk	Potential risk	High risk	P value
Meal skipping	Weak	169 (90.9)	16 (8.6)	1 (0.5)	*P = 0.180
	Moderate	164 (92.1)	14 (7.9)	0 (0)	
	Good	8 (88.9)	1 (11.1)	0 (0)	
Poor dietary pattern	Weak	64 (79)	16 (19.8)	1 (1.2)	*P < 0.001
	Moderate	245 (94.2)	15 (5.8)	0 (0)	
	Good	32 (100)	0 (0)	0 (0)	

* Chi-square test

Discussion

This study was conducted to aim the assessment of relationship between internet addiction and dietary behavior among students. Based on the results of this study, the majority of the students had no internet addiction. Also, there was a statistical significant correlation between levels of internet addiction and dietary behavior in high-fat diets, snacking, emotional eating behavior and poor dietary pattern. Based on our study results among students with more than six hours internet use per day, were at high risk of internet addiction. Ross et al study also reports that the people with internet addiction had the internet use near 40 to 55 hours per week (21).

Several reasons including email check, scientific use, hobby and etc., were reported in our study for using the internet. Most of them had scientific reasons for use. Tabrizi et al (2010) also reported that among the internet users in Iran, the majority of them use chat rooms (22). About the results of this study on the correlation between sleep disorders and sleep time with internet addiction; another study in 2011 by Jacobsen and Forste, mentioned the same from the study of Kubey et al 2001(23).

The findings of this study showed that majority of students were not addicted to the internet and only 0.3% of students were at high risk of internet addiction. This is consistent with another study that 1.7% students were addicted to the Internet (24).

A study on middle school students in Guangzhou reported that majority of users were the typical users without internet addiction (25). These data are similar to our results. In another survey of internet addiction among students of Payame Noor University in 2009, 8.3% were involved with mild internet addiction (26). The study in the Faculty of Education and Psychology also found that more than half of the students had no internet addiction (18). Based on the Shek study and Young questionnaire, nineteen percent of the respondents could be identified as internet addicted (27). The result of this study is different and it can be due to differences in study population and platform of the internet. It seems these findings could be known as the risk rising of the disorder among students and sounds the need for proper planning in this area in collaboration with university officials.

The results of this study show the majority of students have weak dietary behavior, especially the dimensions of planning ahead and the dietary pattern. Study shows that students regarding dietary habits are in unfavorable condition (28). Stefańiska showed that the balance in daily nutrient diet among the students of the Medical University of Bialystok was low for carbohydrates, fats and fiber; that with the findings of this study are consistent (29).

According to the result of a study, the performance level of food consumption behavior in14% of the students was at a weak level (30). As well as, in the other study of Karachi university students, with awareness of proper dietary behavior, unfavorable dietary behavior and need to diet modification were observed (31).

The study of Alzayani et al showed that medical science group students did not eat breakfast on a regular basis while they ate the majority of lunch and dinner regularly. So that one-third of the students ate breakfast 3 to 5 days a week, two-thirds ate lunch daily and half of the students also ate dinner 6 to 7 days a week. Another study shows dietary behavior of the Arabian Gulf University medicine students not adhered to recommended nutritional patterns and food consumption patterns. Students frequently removed their meals and had

[DOR: 20.1001.1.23225688.2023.12.1.10.3]
[DOI: 10.18502/jchr.v12i10.13153]

unfavorable dietary behavior that with the findings of this study are consistent (32).

According to the studies done in United States universities, students did not use a sufficient amount of recommended fruits and vegetables. They had difficulty in feeding behavior, and were increasing amounts of high-fat foods (33). Also the study in China on dietary behavior in nursing, medicine, para-medical and basic medical sciences students, resulted the majority taking vegetables every day and third sweet foods consumed more than 3 days a week. The study also recommended that it is necessary to be more attentive to the issue of dietary behavior modification and to encourage students to healthy lifestyle (34). A study determined weak dietary behavior and a history of weight increase in students. Regarding the students' dietary patterns, there was deficient fruit and vegetable consumption (35).

Regarding dietary behavior among students by internet addiction levels, the result shows a significant relationship between internet addiction levels and high fat eating dimension, snacking, emotional eating and poor dietary pattern. Kim et al reported irregular dietary behaviors in the internet addicted users, due to loss of appetite, high rate of skipping meals, and nutritional imbalances. The study also showed lower nutrition quality in those who had an internet addiction than those who were at risk internet addiction or no risk internet addiction (10). Our study also has the same results.

In a study Kim et al demonstrated that high-risk internet users take smaller meals, have less of an appetite, skip meals, and snack more than their potential-risk and normal-risk internet user counterparts. Also the frequency of skipping dinner in high-risk internet users was significantly higher than that in no risk internet users (36).

High-risk internet users not only consumed too little of the recommended food groups; but also more than the recommended daily quantities of fatty foods, fried foods, salt, and high sugars. It is reported that high fat intake increases the chance of being overweight or obese (16).

The diet of high-risk internet users, though, may meet their energy requirements, lack nutritional value, and may cause nutrition-related health problems.

Another study also determined that obese adolescents were more likely to have internet addiction and low quality of life (10). The results of another study is reported lower self-control among internet addicted, which causes health problem (36).

Since the students are in a change from transitional period from adolescence to new era in college students, and it has undergone numerous changes in personal behavior and habits, depending on relationships' type, learned behaviors can be transient or stable.The dietary studies for students are significant because of their potential influence on long-term health status in the future.

Conclusions

Attention to the results of this study and other studies that represent internet addiction prevalence among students and impairing nutritional behavior among them. However, the prevalence of internet addiction among our study populations was lower than previous studies in colleges; due to the significant correlation of internet addiction with dietary behavior; it seems strategic planning is essential to prevent the development of internet addiction and its complications. Hence, future research is recommended to investigate in a variety of college student communities. Research on considering the empowerment elements for the university students, using the benefits of the internet without negative effect on their health and dietary behavior also is proposed.

Acknowledgement

The authors would like to appreciate all nurses and midwifery students who contributed to this study; conducting the study was not possible without their cooperation. In Addition, we would like to thank the lecturers and specialists due to their valuable comments for questionnaire reliability during the study, research committee confirmation and who contributed in any way. This research was supported by the Tehran University of Medical Sciences with an approved number of 92-03-28-24424. Written informed consent was obtained from the students. The participants were

[DOR: 20.1001.1.23225688.2023.12.1.10.3]

[DOI: 10.18502/jchr.v12i10.13153]

assured that they can withdraw from the study at any time and data will be secure.

Conflict of Interest

None declared

Authors' contribution

A. D and A. D; Designing the study and writing of manuscripts, Edit and review the article, and Final approval of the manuscript version, A. B; Experimental work, Data collection and participation in the concept of study, A. D; prepared a draft of the manuscript, analyzed the data, A. D; Supervised experimental work, validity and reliability of questionnaires and critically revised the manuscript for important intellectual content and interpretation of the data. All authors made a significant contribution to the concept of study.

References

1. Bender PK, Plante C, Gentile DA. The effects of violent media content on aggression. Current opinion in psychology. 2018; 19: 104-8.
2. Alavi S. Psychometric properties of Young internet addiction test. International Journal of Behavioral Sciences. 2010; 4(3): 183-9. [Persian]
3. Young KS. Internet addiction: A new clinical phenomenon and its consequences. American behavioral scientist. 2004; 48(4): 402-15.
4. Spada MM. An overview of problematic Internet use. Addictive behaviors. 2014; 39(1): 3-6.
5. Lee EJ. A case study of internet game addiction. Journal of Addictions Nursing. 2011; 22(4): 208-13.
6. Bahri N, SadeghMoghadam L, Khodadost L, et al. Internet addiction status and its relation with students' general health at Gonabad Medical University. Modern Care Journal. 2011; 8(3). [Persian]
7. Mazloomy Mahmoudabad SS, Lotfi MH, Ardian N, et al. The Internet Addiction and Related Factors among Students of Yazd Universities. Health Education and Health Promotion. 2014; 2(2): 21-9. [Persian]
8. Cho H, Kwon M, Choi J-H, et al. Development of the Internet addiction scale based on the Internet Gaming Disorder criteria suggested in DSM-5. Addictive behaviors. 2014; 39(9): 1361-6.
9. Scimeca G, Bruno A, Cava L, et al. The relationship between alexithymia, anxiety, depression, and internet addiction severity in a sample of Italian high school students. The Scientific World Journal. 2014.
10. Kim Y, Park JY, Kim SB, et al. The effects of Internet addiction on the lifestyle and dietary behavior of Korean adolescents. Nutrition research and practice. 2010; 4(1): 51-7.
11. Gupta R, Taneja N, Anand T, et al. Internet addiction, sleep quality and depressive symptoms amongst medical students in Delhi, India. Community mental health journal. 2021; 57: 771-6.
12. So R, Makino K, Fujiwara M, et al. The prevalence of internet addiction among a Japanese adolescent psychiatric clinic sample with autism spectrum disorder and/or attention-deficit hyperactivity disorder: a cross-sectional study. Journal of Autism and Developmental Disorders. 2017; 47: 2217-24.
13. Kargar M, Sabet Sarvestani R, Tabatabaee HR, et al. The assessment of eating behaviors of obese, over weight and normal weight adolescents in Shiraz, Southern Iran. International Journal of Community Based Nursing & Midwifery. 2013; 1(1): 35-42. [Persian]
14. Christakis DA, Moreno MM, Jelenchick L, et al. Problematic internet usage in US college students: a pilot study. BMC medicine. 2011; 9(1): 1-6.
15. Velten J, Bieda A, Scholten S, et al. Lifestyle choices and mental health: a longitudinal survey with German and Chinese students. BMC Public Health. 2018; 18: 1-15.
16. Kim HM, Park J, Kim H-S, et al. Obesity and cardiovascular risk factors in Korean children and adolescents aged 10–18 years from the Korean National Health and Nutrition Examination Survey, 1998 and 2001. American journal of epidemiology. 2006; 164(8): 787-93.
17. Schlundt DG, Hargreaves MK, Buchowski MS. The eating behavior patterns questionnaire predicts dietary fat intake in African American women. Journal of the American Dietetic Association. 2003; 103(3): 338-45.
18. Lam LT. Parental mental health and Internet Addiction in adolescents. Addictive behaviors. 2015; 42: 20-3.
19. Mohammadsalehi N, Mohammadbeigi A, Jadidi R, et al. Psychometric properties of the Persian language version

[DOR: 20.1001.1.23225688.2023.12.1.10.3]

[DOI: 10.18502/jchr.v12i10.13153]

of Yang Internet Addiction Questionnaire: an explanatory factor analysis. International journal of high risk behaviors & addiction. 2015; 4(3). [Persian]
20. Dehghan P, Asghari-Jafarabadi M, Salekzamani S. Validity, reliability and feasibility of the eating behavior pattern questionnaire (EBPQ) among Iranian female students. Health promotion perspectives. 2015; 5(2): 128. [Persian]
21. Felicen SS, Ylagan AP. Effects of Computer Reservation System in the Operations of Travel Agencies. Asia Pacific Journal of Multidisciplinary Research. 2016; 4(4): 23-8.
22. Tabrizi AM, Hoveyda L, Omidi F. Deep Involving on Cyber Space and Personal and Psychological Consequences: Survey of Young Severs in Tehran City. Journal of Sociological Researches. 2011; 4(3): 51. [Persian]
23. Jacobsen WC, Forste R. The wired generation: Academic and social outcomes of electronic media use among university students. Cyberpsychology, Behavior, and Social Networking. 2011; 14(5): 275-80.
24. Namiranian N, Mansouri SS, Shafiee M. An evaluation of internet addiction and its related factors among the students of Yazd University of Medical Science. Journal of Community Health Research. 2020. [Persian]
25. Xie Y, Zhou P, Xu L, et al. Prevalence of internet addiction and the related factors in middle school students in Guangzhou. Nan fang yi ke da xue xue bao. Journal of Southern Medical University. 2010;30(8):1801-4.
26. Pirzadeh A. The relation between general health and internet addiction in scholars of Isfahan University of Medical Sciences. Zahedan Journal of Research in Medical Sciences. 2012; 13(1). [Persian]
27. Shek DT, Tang VM, Lo C. Internet addiction in Chinese adolescents in Hong Kong: assessment, profiles, and psychosocial correlates. The Scientific World Journal. 2008; 8: 776-87.
28. Fatehi F, Monajemi A, Sadeghi A, et al. Quality of life in medical students with internet addiction. Acta Medica Iranica. 2016: 662-6.
29. Stefańska E, Ostrowska L, Sajewicz J. Assessment of dietary habits in students of the Medical University of Bialystok with differentiated nutritional status. Roczniki Panstwowego Zakladu Higieny. 2011; 62(2): 187-92.
30. Talatappeh D, Tavakoli H, Rahmati Najarkolaei F, et al. Knowledge, beliefs and behavior of food consumption among students of Military University: the application of health belief model (HBM). Iranian Journal of Military Medicine Vol. 2012; 14(3): 192-9. [Persian]
31. Raza S, Sheikh MA, Hussain M, et al. Dietary modification, body mass index (BMI), blood pressure (BP) and cardiovascular risk in medical students of a government medical college of Karachi. JPMA The Journal of the Pakistan Medical Association. 2010; 60(11): 970-4.
32. Alzayani S, Hamadeh RR. Dietary Behaviors among Medical Students in the Middle East: Identifying Areas for Intervention.
33. Deliens T, Clarys P, De Bourdeaudhuij I, et al. Determinants of eating behaviour in university students: a qualitative study using focus group discussions. BMC public health. 2014; 14(1): 1-12.
34. Yuan C, Lv J, VanderWeele TJ. An assessment of health behavior peer effects in Peking University dormitories: A randomized cluster-assignment design for interference. PLoS one. 2013; 8(9): e75009.
35. Eliacik K, Bolat N, Koçyiğit C, et al. Internet addiction, sleep and health-related life quality among obese individuals: a comparison study of the growing problems in adolescent health. Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity. 2016; 21: 709-17.
36. Mei S, Yau YH, Chai J, et al. Problematic Internet use, well-being, self-esteem and self-control: Data from a high-school survey in China. Addictive behaviors. 2016; 61: 74-9.

[DOR: 20.1001.1.23225688.2023.12.1.10.3]
[DOI: 10.18502/jchr.v12i10.13153]