ISSN 2304-3415, Russian Open Medical Journal
2019. Volume 8. Issue 2. Article CID e0204
DOI: 10.15275/rusomj.2019.0204

Original article

Frequency of waterpipe smoking and its effective factors among students of state universities in Kerman, Iran

Mohsen Momeni, Parvaneh Sharifi, Ebrahim Ghari, Hossein Safizadeh

Kerman University of Medical Sciences, Kerman, Iran

Received 04 May 2018, Revised 22 February 2019, Accepted 22 March 2019

Abstract: *Background* — Nowadays, using tobacco such as waterpipe is considered a worldwide health problem. In recent years, the consumption of waterpipe, has been increased in different countries, especially among young people. This study was conducted to determine the frequency of waterpipe consumption and factors affecting it among Kerman students.
Methods — This cross-sectional study was conducted among Kerman students. The students were selected using convenience sampling, and each of them completed the waterpipe consumption questionnaire. Data analysis was performed using chi-square test and logistic regression, as well as SPSS 17 software.
Results — In this study, 675 students were investigated. The mean (±standard deviation) age of the subjects was 21.1 (±2.6) years and 39% of them were male, and 30% of students had the experience of waterpipe consumption. The most important reason for waterpipe was entertainment, followed by curiosity. The waterpipe consumption was correlated with male gender, lower education level, living in a single house, and its consumption by friends or family members.
Conclusion — The results indicated that approximately one third of students experienced waterpipe smoking and some groups of them were susceptible to waterpipe smoking. Therefore, planning and intervention for the students are needed.

Keywords: tobacco, waterpipe smoking, student.

Cite as Momeni M, Sharifi P, Ghari E, Safizadeh H. Frequency of waterpipe smoking and its effective factors among students of state universities in Kerman, Iran. *Russian Open Medical Journal* 2019; 8: e0204.

Correspondence to Hossein Safizadeh. Address: Afzalipour Medicine School, 22nd Bahman Blvd., Kerman, 7616914115, Iran. E-mail: hsafizade@kmu.ac.ir. Phone: +98-34-33224613. Mobile: +98-9133414414. Fax: +98-34-33224613.

Introduction

Nowadays, tobacco consumption is considered a worldwide health problem. Based on the World Health Organization (WHO) report released in 2005, more than 5 million deaths occurred due to complications arising from tobacco consumption around the world. By estimation, the death rate will increase to 8 million per year by 2030, and approximately 80 percent of these deaths will occur in countries with moderate and low economic income [1].

Waterpipe is an old method for tobacco consumption whose history dates back to the 15th century in India. It was later spread to other countries, including Iran, Egypt and the Eastern Mediterranean. After a short period of reduction in waterpipe consumption, its consumption increased since the early 1990s [2], particularly in recent years and among young people in different countries, even in Western countries such as England, France, Russia, Australia, Canada and the United States, not only in Asian and African countries [3, 4]. Reasons for increased consumption of waterpipe include lack of knowledge about its complications, acceptance of waterpipe consumption as a social behavior, expansion of waterpipe supply centers and stores supplying its related products in society, and supply of new and flavored tobaccos at low cost [5-7]. However, the results of recent studies suggest the presence of carcinogens compounds, high concentrations of carbon monoxide, nicotine, tar and heavy metals in smoke produced from waterpipe [3, 7]. Pathogenicity of all of them has been proven, and the available evidence suggests a relationship between waterpipe consumption and lung cancer, pulmonary disease, weight loss in birth delivery, as well as periodontal diseases [8]. In addition, given the common use of waterpipe by several people at the same time, there is potential for transmission and the development of certain infectious diseases, and the likelihood of transmission of infectious agents has been indicated in this regard [9]. Studies conducted in Iran suggest the increase of waterpipe consumption among young people, including students [10, 11]. To design preventive interventions, it is necessary to examine the underlying reasons providing the conditions for its consumption among young people and develop plans to reduce their consumption.

The current study was conducted to evaluate the frequency of waterpipe consumption and factors affecting it among Kerman city students.

Table 1. Characteristics of the students (n=675)

Characteristic	*n (%)*
Gender:	
- Male	268 (39)
- Female	407 (61)
Marital status:	
- Single	580 (86)
- Married	95 (14)
Educational level:	
- Doctor	404 (60)
- Master	8 (1)
- Bachelor	263 (39)
Educational field:	
- Health sciences	372 (55)
- Non-health sciences	303 (45)
Housing status:	
- Dormitory	246 (36.4)
- Single house	174 (25.8)
- With family	246 (36.4)
- Unknown	9 (1.4)

Table 2. Characteristics of the waterpipe smoking of students (n=203)

Characteristic	*n (%)*
Age in the first consumption, year:	
≤10	16 (7.9)
11-15	42 (20.7)
16-20	113 (55.7)
21≤	25 (12.3)
Unknown	7 (3.4)
Person in first consumption:	
- Parents	15 (7.4)
- Sibling	12 (5.9)
- Others in family	77 (37.9)
- Friends	99 (48.8)
The main motives for waterpipe smoking:	
- Entertainment and pleasure	94 (46.3)
- Peer pressure	5 (2.5)
- The curiosity	73 (36.1)
- Reducing fatigue	3 (1.4)
- Attract people's attention	3 (1.4)
- Others	25 (12.3)
Concurrent use of cigarette:	
- Yes	29 (14.3)
- No	137 (67.5)
- Unknown	37 (18.2)
Tendency to quit waterpipe smoking:	
- I don't intend to quit	12 (5.9)
- I am thinking of quitting	5 (2.5)
- I am ready to quit	14 (6.9)
- I have not thought about quitting	15 (7.4)
- I am not addicted to quitting	129 (63.5)
- Unknown	28 (13.8)

Material and Methods

This cross-sectional and analytical study was conducted among students of two major and public universities of Kerman, center of the largest province in southeastern Iran, including medical science and non-medical science universities.

The participants in this research were students educated in medicine, dentistry, social science, economics, basic science schools. The study inclusion criteria were students of two universities and willing participants; with the exclusion of unwilling participants and incomplete questionnaires. In this study, convenient non-probabilistic sampling was used to select students to participate in this research. Data were collected from students attending classes from two universities, accordingly after coordinating with the teachers and attending a classroom and after explaining the research process and its objectives for the students at the end of the class and obtaining their consent to participate in the research, the questionnaires were distributed among the students. Then, the way of completing the questionnaire was explained for them. Moreover, at time of completion of the questionnaire, the researcher attended beside the students to answer the probabilistic questions.

To observe ethical principles, the students were informed that their participation in this research was voluntary, the questionnaires were remained anonymous, and the students were ensured that their responses were recorded and analyzed by observing the confidentiality principles.

After collecting the questionnaires, the recorded data were entered into the computer and finally analyzed by SPSS 17 software. The quantitative data are presented as mean with standard deviation – M±SD; the qualitative data are presented as nubmer and percents – n (%). Chi-square test for univariable analysis and logistic regression for multivariable analysis were also used to analyze the data. The significance level was considered to be less than 0.05.

Results

In this study, 675 students were investigated of which 303 (45%) and 372 (55%) were students in non-medical and medical science, respectively. The mean (±SD) age of the students was 21.1 (±2.6) years and 268 (39%) of the students were male. The highest number of the students studied at the doctoral level (60%), and 174 people (26%) lived in a single house. *Table* 1 presents the research subjects' demographic characteristics.

In total, 203 students (30.2%) had an experience of waterpipe consumption, and the mean (±SD) age at the first time of waterpipe consumption was reported 17.04 (±3.9) years, and 16 students (8%) consumed it before the age of ten and half of them experienced its consumption before the age of 18 years.

Furthermore, 99 (48.8%) of the students with a history of waterpipe consumption experienced it for the first time with their friends, and entertainment and pleasure (46.3%), followed by curiosity (36%) were the main reasons for the first use of waterpipe. Moreover, 29 (17.5%) of the students having a history of its consumption were also cigarette smokers. Regarding the question "Do you want to quit it or not?", 129 people (63.5%) believed that they were not addicted to waterpipe to quit its consumption (*Table* 2).

In this study, 58 students (8.6%) stated that their last consumption of waterpipe was a month before the study, of which 4 consumed it daily and 7 consumed it 1 to 4 times per week. The most common place for waterpipe consumption was coffee table/coffee house (23.2%) and friends' home (21.4%), and most of these students (82.5%) consumed waterpipe more along with their friends. The duration of its consumption in most of the cases was reported more than half an hour (73.7%). The univariable analysis results suggest that male students consumed significantly more than female students (P<0.001), while no difference was observed between married and single students in this regard. Bachelor students consumed waterpipe highly (P<0.05), while no difference was observed among the students in its consumption regarding the educational field of study. In students living in single

houses, waterpipe consumption was significantly higher (P<0.001), and waterpipe consumption was significantly high in students whose families had a history of waterpipe consumption (P<0.001), as well students whose friends had a history of its consumption (P<0.001) (*Table* 3). Based on the multivariate analysis performed using logistic regression and given the significant items in *Table* 3, all the variables remained in the model (*Table* 4).

Table 3. Waterpipe smoking status by characteristics of students

Variable	*Ever smoked waterpipe, n (%)*	*Never smoked waterpipe, n (%)*	*P-value*
Gender:			
- Male	124 (46.3)	144 (53.7)	<0.001
- Female	74 (19.4)	328 (80.6)	
Marital status:			
- Single	170 (29.3)	410 (70.7)	0.256
- Married	33 (35.1)	61 (64.9)	
Educational level:			
- Bachelor	90 (34.2)	173 (65.8)	0.046
- Doctor	109 (27)	295 (73)	
Educational field:			
- Non-health science	102 (33.7)	201 (66.3)	0.066
- Health science	101 (27.2)	271 (72.8)	
Housing status:			
- Dormitory	56 (22.8)	190 (77.2)	
- Single house	78 (44.8)	96 (55.2)	<0.001
- With family	66 (26.8)	180 (73.2)	
History of waterpipe consumption in the family:			
- Yes	75 (51.4)	71 (48.6)	< 0.001
- No	125 (24)	396 (76)	
History of waterpipe consumption in the friends:			
- Yes	173 (48.1)	187 (51.9)	<0.001
- No	283 (90.7)	29 (9.3)	

Table 4. Predictors of waterpipe smoking

Variable	P-value	OR (95%CI)
Gender:		
- Female		1
- Male	0.003	1.96 (1.26-3.04)
Educational level:		
- Doctor		1
- Bachelor	0.016	2.70 (1.20-6.06)
Housing status:		
- Dormitory		1
- Single house	0.005	2.23 (1.28-3.87)
- With family	0.68	1.11 (0.68-1.81)
History of waterpipe consumption in the family:		
- No		1
- Yes	<0.001	2.59 (1.66-4.03)
History of waterpipe consumption in the friends:		
- No		1
- Yes	<0.001	5.13 (3.09-8.54)

OR, odds ratio; CI, confidence interval.

Discussion

In the current study, 30.2% of the students had a history of waterpipe consumption, and 28.6% of them consumed waterpipe in the last month. Investigations revealed that the frequency of waterpipe consumption among Iranian students was reported differently. Frequency of waterpipe consumption in our study is significantly lower than the results of the research conducted on the students of state universities in Tehran (40.3%) [12] and Karaj (51.2%) [13], but similar to the consumption frequency (29%) reported in the research conducted by Dehdari et al. [7]. The frequency of waterpipe consumption in two studies conducted by Rezakhani Moghadam [14] (23.3%) and Taremian [15] (25.7%) on students of medical universities of Tehran and the study conducted by Rahimzadeh [11] on physical education students of Kurdistan University (24.7%) has been reported less than that of the current research. In other countries, the frequency of waterpipe consumption has been reported differently. In the United States, Leavens et al. [16], Heinz et al. [17] and Noonan [18] reported the history of waterpipe consumption as 35.3%, 48% and 61%, respectively. It has been also reported 66% in England [19], 32.2% in South Africa [20], 37% in Saudi Arabia [21], 41.9% in Lebanon [22], and 56% in Jordan [23] students. In general, waterpipe consumption has increased in different communities and in different cultures, and it is mostly seen among adolescents and young people, thus high frequency of waterpipe consumption among students in different countries is predictable.

The age of the first consumption of waterpipe in the current research was 17.9 (±3.9) years, the age of starting to consume waterpipe was 18(±3.4) years in Tehran [14], 18(±2.5) years in Saudi Arabia [21], and 16(±2.81) years in South Africa [20], 19(±5.84) years in the United States [16], indicating lack of a significant difference between the domestic and foreign studies. Comparing the frequency of waterpipe consumption among males and females demonstrates higher consumption of it among males, and this result is seen in many domestic and foreign studies [11, 12, etc.].

The first reason for waterpipe consumption in this research was reported to be entertainment and pleasure (46.3%), followed by curiosity (36.1%). In the research conducted be Rezakhani Moghadam, the main reason for using waterpipe was also reported to be fun (34.8%) [14]. The main reason for consumption of waterpipe for the first time was reported to be curiosity (74.8%) in Saudi Arabia [21]. In South Africa, 57% of students consumed it for socialization and 33.3% for relaxation [20]. As the conditions of consuming the waterpipe are in a way that several people can converse for a long time while waterpipe, it is considered recreation and entertainment and even a tool for resting and relaxation. In this study, 48.8 percent of the students experienced waterpipe consumption for the first time with their friends, being similar to the results of the research conducted by Rezakhani Moghaddam [14] and Dehdari [7]. In the research conducted by Javad in England, 73.7 percent of the students consumed waterpipe for the first time with their friends [19].

Based on the multivariate analysis, male gender, bachelor level of education, living in a single house, and history of waterpipe consumption by the family and friends were among the factors affecting the waterpipe consumption by students. Regarding the higher prevalence of waterpipe consumption in males, the results of many studies, both domestic and foreign studies, show a similar situation. In general, waterpipe consumption, as other substances, is more in males than that in females [12, 13, etc.]. However, some studies showed no difference between males and females in this regard [20].

More consumption of waterpipe among males might be attributed to the fact that they are riskier and have a tendency to hazardous and unsafe behaviors, while in most communities, consumption of various tobacco forms, including waterpipe in is not so accepted by females, and it is considered non-social behavior. Bachelor students consumed more waterpipe than the

doctor students. It seems that bachelor students have more free time to spend for on recreation and various experiences; therefore, waterpipe consumption is more common in these students. As doctor students mainly study in medical and dentistry fields of studies, they have less free time and they can have knowledge about its harmful effects, they show a lower tendency to its consumption. One of the factors affecting the consumption of waterpipe by students is living in single houses. Ansari et al. in their research conducted in Zahedan revealed that waterpipe consumption was higher among students living in single houses [26]. Rezakhani Moghaddam et al. reported that waterpipe consumption in non-native students was higher than that in native students; while there is no information if they live in a dormitory or single house [14]. In Saudi Arabia [21] and the United States [25], waterpipe consumption was reported more in students living in single houses. It is clear that living at a personal house provides a special condition for students to experience various issues, including tobacco consumption in the absence of supervision of parents and adults.

One of the most influential factors encouraging students to consume waterpipe was friends who had a history of waterpipe consumption. This result was also reported in the research conducted by TaragiJah et al. [12] in students of public universities and Kabir et al. [13] among the students of Karaj University. In general, having friends with a history of waterpipe consumption is a risk factor for waterpipe consumption, and it is effective in encouraging students to consume it [26].

In addition, the consumption of waterpipe in students with a history of waterpipe consumption in the family was higher, being in line with that of the research conducted by Kabir et al. in Karaj [13]. Based on studies conducted in Lebanon [27] and Saudi Arabia [28], the consumption of waterpipe by parents predicted its consumption in children. The results of the study in Syria also suggest that tobacco consumption in the form of waterpipe by Syrian students is accepted by families [29]. In many Iranian cities, waterpipe consumption by children in the presence of parents and other members of the family is accepted and not criticized, while families usually do not accept cigarette smoking by their children, and this is rooted in cultural beliefs and customs of different regions of Iran. Additionally, the waterpipe consumption by family members causes it to be considered a gradually accepted action for smaller members of the family. In other words, parents and adults are a model for smaller members of the family. Moreover, owing to the availability of waterpipe in the family environment, it leads to a higher tendency of smaller members of the family to its consumption [30].

Conclusion

Approximately one third of the students experienced waterpipe smoking. In addition, male gender, lower education level, living in a single house, and its consumption by friends or family members were the main factors associated with watwerpipe consumption. Accordingly, the planning and intervention for students are needed.

Limitations

The limitation of the present study was that sampling was limited to students of two major universities in Kerman and using the convenient sampling method. It is clear that in generalizing the results, we should treat with caution, given the limitations of this type of sampling.

Ethical approval

This study was approved by the Ethical committee of the Kerman University of Medical Sciences, Iran (Ethical code:IR.KMU.REC.1394.263).

Conflict of interest: none declared.

References

1. Mathers CD, Loncar D. Projections of global mortality and burden of disease from 2002 to 2030. *PLoS Med* 2006; 3(11): e442. https://dx.doi.org/10.1371/journal.pmed.0030442.
2. Kruger L, van Walbeek C, Vellios N. Waterpipe and Cigarette Smoking among University Students in the Western Cape, South Africa. *Am J Health Behav* 2016; 40(4): 416-426. https://dx.doi.org/10.5993/AJHB.40.4.3.
3. Knishkowy B, Amitai Y. Water-pipe (narghile) smoking: an emerging health risk behavior. *Pediatrics* 2005; 116(1): e113–e119. https://dx.doi.org/10.1542/peds.2004-2173.
4. Maziak W. The global epidemic of waterpipe smoking. *Addict Behav* 2011; 36(1-2): 1–5. https://dx.doi.org/10.1016/j.addbeh.2010.08.030.
5. Martinasek MP, McDermott RJ, Martini L. Waterpipe (Hookah) Tobacco Smoking Among Youth. *Curr Probl Pediatr Adolesc Health Care* 2011; 41(2): 34-57. https://dx.doi.org/10.1016/j.cppeds.2010.10.001.
6. Momenabadi V, Iranpour A, Khanjani N, Mohseni M. Effect of educational intervention on water pipe behaviour of students in dormitories of Kerman Medical University: BASNEF Model. *JHPM* 2015; 4(3): 12-22. Persian. http://jhpm.ir/article-1-474-en.html.
7. Dehdari T, Jafari A, Joveyni H. Students' perspectives in Tehran University of Medical Sciences about factors affecting smoking hookah. *Razi Journal of Medical Sciences* 2012; 19(95): 17-24. Persian. http://rjms.iums.ac.ir/article-1-2116-en.html
8. Akl EA, Gaddam S, Gunukula S K, Honeine R, Jaoude PA, Irani J. The effects of waterpipe tobacco smoking on health outcomes: a systematic review. *Int J Epidemiol* 2010; 39(3): 834–857. https://dx.doi.org/10.1093/ije/dyg002.
9. Safizadeh H, Moradi M, Rad MR, Nakhaee N. Bacterial contamination of different components of the waterpipe. *Int J Tuberc Lung Dis* 2014; 18(8): 988–991. https://dx.doi.org/10.5588/ijtld.14.0026
10. Sarrami H, Ghorbani M, Taghavi M. The survey two decades of prevalence studies among Iran university students. *Research on Addiction* 2013; 7(27): 36-38. Persian. http://etiadpajohi.ir/article-1-156-en.html
11. Rahimzadeh M, Rastegar H, Fazel Kalkhoran J. Prevalence and causes of Tendency to Cigarette and Water Pipe Smoking among Male and Female Physical Education Students in University of Kurdistan. *J Health* 2017; 7(5): 680-686. Persian. http://healthjournal.arums.ac.ir/article-1-1098-fa.html
12. Taraghijah S, Hamdiyeh M, Yaghoobi N. Predicting factors of cigarette and hookah smoking among students in governmental universities. *Research in Medicine* 2011; 34 (4): 249-256. Persian. http://pejouhesh.sbmu.ac.ir/article-1-811-fa.html.
13. Kabir K, Mohammadpoorasl A, Esmaeelpour R, Aghazamani F, Rostami F. Tobacco Use and Substance Abuse in Students of Karaj Universities. *Int J Prev Med* 2016; 7: 105. https://dx.doi.org/10.4103/2008-7802.190091.
14. RezaKhani mogaddam H, Shojaezadah D, Sadeghi R, Pahlevanzadah B, Shakouri moghaddam R, Fatehi V. Survey of Prevalence and Causes of the Trend of Hookah smoking in Tehran University Students of Medical Sciences 2010-2011. *TB* 2012; 11(4): 103-113. Persian. http://tbj.ssu.ac.ir/article-1-362-en.html.

15. Taremian F, Bolhari J, Peyravi H, Asgari A. Drug use prevalence among students of universities of medical sciences in Tehran. *Research on Addiction* 2013; 7(28): 9-21. Persian. http://etiadpajohi.ir/article-1-276-en.html.
16. Leavens ELS, Brett EI, Morgan TL, Lopez SV, Shaikh RA, Leffingwell TR, et al. Descriptive and injunctive norms of waterpipe smoking among college students. *Addict Behav* 2018; 77: 59-62. https://dx.doi.org/10.1016/j.addbeh.2017.09.006.
17. Heinz AJ, Giedgowd GE, Crane NA, Veilleux JC, Conrad M, Braun AR, et al. A comprehensive examination of hookah smoking in college students: Use patterns and contexts, social norms and attitudes, harm perception, psychological correlates and co-occurring substance use. *Addict Behav* 2013; 38(11): 2751-2760. https://dx.doi.org/10.1016/j.addbeh.2013.07.009.
18. Noonan D. A descriptive study of smoking tobacco using a waterpipe among college students. *J Am Assoc Nurse Pract* 2013; 25(1): 11-15. https://dx.doi.org/10.1111/j.1745-7599.2012.00781.x.
19. Jawad M, Choaie E, Brose L, Dogar O, Grant A, Jenkinson E, et al. Waterpipe Tobacco Use in the United Kingdom: A Cross-Sectional Study among University Students and Stop Smoking Practitioners. *PLoS One* 2016; 11(1): e0146799. https://dx.doi.org/10.1371/journal.pone.0146799.
20. Kruger L, van Walbeek C, Vellios N. Waterpipe and Cigarette Smoking among University Students in the Western Cape, South Africa. *Am J Health Behav* 2016; 40(4): 416-426. https://dx.doi.org/10.5993/AJHB.40.4.3.
21. Awan KH, Alrshedan A, Al Kahtani M, Patil S. Waterpipe smoking among health sciences university students: Knowledge, attitude and patterns of use. *Saudi Dent J* 2016; 28(4): 189-193. https://dx.doi.org/10.1016/j.sdentj.2016.05.001.
22. Jradi H, Wewers ME, Pirie PP, Binkley PF, Ferketich AK. Cigarette and waterpipe smoking associated knowledge and behavior among medical students in Lebanon. *East Mediterr Health J* 2013; 19(10): 861-868. https://www.ncbi.nlm.nih.gov/pubmed/24313150.
23. Khabour OF, Alzoubi KH, Eissenberg T, Mehrotra P, Azab M, Carroll MV, et al. Waterpipe Tobacco and Cigarette Smoking among University Students in Jordan. *Int J Tuberc Lung Dis* 2012; 16(7): 986-992. https://dx.doi.org/10.5588/ijtld.11.0764.
24. Tucktuck M, Ghandour R, Abu-Rmeileh NME. Waterpipe and cigarette tobacco smoking among Palestinian university students: a cross-sectional study. *BMC Public Health* 2017; 18(1): 1. https://dx.doi.org/10.1186/s12889-017-4524-0.
25. Primack BA, Shensa A, Kim KH, Carroll MV, Hoban MT, Leino EV, et al. Waterpipe Smoking among US University Students. *Nicotine Tob Res* 2013; 15(1): 29-35. https://dx.doi.org/10.1093/ntr/nts076.
26. Ansari H, Ansari-Moghaddam A, Mohammadi M. Prevalence of Substance Abuse and Associated Factors in Hookah Users. *J Mazandaran Univ Med Sci* 2016; 26(136): 73-84. Persian. http://jmums.mazums.ac.ir/article-1-7489-en.html.
27. Jawad M, Nakkash RT, Mahfoud Z, Bteddini D, Haddad P, Afifi RA. Parental smoking and exposure to environmental tobacco smoke are associated with waterpipe smoking among youth: results from a national survey in Lebanon. *Public Health* 2015; 129(4): 370-376. https://dx.doi.org/10.1016/j.puhe.2015.01.011.
28. Amin TT, Amr MA, Zaza BO, Kaliyadan F. Predictors of waterpipe smoking among secondary school adolescents in al hassa, Saudi Arabia. *Int J Behav Med* 2012; 19(3): 324–335. https://dx.doi.org/10.1007/s12529-011-9169-2.
29. Maziak W, Eissenberg T, Rastam S, Hammal F, Asfar T, Bachir ME, et al. Beliefs and attitudes related to narghile (waterpipe) smoking amonguniversity students in Syria. *Ann Epidemiol* 2004; 14(9): 646-654. https://dx.doi.org/10.1016/j.annepidem.2003.11.003.
30. Momenabadi V, Kaveh MH, Hashemi SY, Borhaninejad VR. Factors Affecting Hookah Smoking Trend in the Society: A Review Article. *Addict Health* 2016; 8(2): 123-135. https://www.ncbi.nlm.nih.gov/pubmed/27882210.

Authors:
Mohsen Momeni – MD, MPH, Assistant Professor of community medicine, Social Determinants of Health Research Center, Institute for Futures Studies in Health, Kerman University of Medical Sciences, Kerman, Iran. https://orcid.org/0000-0002-9513-3046.
Parvaneh Sharifi – MSc, Senior Researcher, Neuroscience Research Center, Institute of Neuropharmacology, Kerman University of Medical Sciences, Kerman, Iran. https://orcid.org/0000-0002-3841-9347.
Ebrahim Ghari – MD, Student Research Committee, Kerman University of Medical Sciences, Kerman, Iran. https://orcid.org/0000-0001-8335-4258.
Hossein Safizadeh – MD, MPH, Professor of community medicine, Social Determinants of Health Research Center, Institute for Futures Studies in Health, Kerman University of Medical Sciences, Kerman, Iran. https://orcid.org/0000-0003-1760-5172.