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Narghile (water pipe) smoking among university staff; prevalence, attitudes and beliefs

Najla S. Dar-Odeh^{1*}, Mariam Al-Abdalla¹, Nadiajda O. Khdairi², Khadijeh B. Al-Abedalla², Rand S Abdel-Jawad³ and Osama A. Abu-Hammad¹

> ¹Faculty of Dentistry, The University of Jordan, Amman, Jordan ²Dental Department, University of Jordan Hospital, Amman, Jordan ³Princess Sumaya University for Technology, Amman, Jordan

ABSTRACT

This study aimed at estimating the number of users of different types of tobacco, particularly narghile (water pipe) among a sample of faculty staff members working in a Jordanian university. It also investigated the attitudes of narghile smokers to their habit, together with their willingness to stop narghile smoking; and finally their awareness to oral health and their perceptions about the harmful effects of this habit. The study was a cross-sectional survey whereby the sample was randomly selected from all the faculties, institutes and centers of the university. A pre-prepared questionnaire was distributed and completed by participants. Data were statistically analyzed using SPSS program. A total of eighty nine or (6.2%) of staff members participated in the study including 19 females and 70 males. Most of smokers (51.6%) were deniers and most deniers (62.5%) smoked narghile either exclusively or in combination with cigarettes. The most frequently reported harmful effect of narghile smoking was the presence of toxic materials. Almost half of narghile smokers were interested to quit the habit. Narghile smoking is showing popularity among university staff members who perceive this habit as a social and not as a risk-to-health behavior. Urgent measures are needed to counteract the popularity of narghile smoking among university staff members

INTRODUCTION

Tobacco use has been linked to a number of ailments like cardiovascular disease, osteoporosis, rheumatoid arthritis, diabetic nephropathy and respiratory disease [1-5]. Among the various forms of tobacco use is narghile smoking (NS) which is a traditional form of tobacco use in certain parts of the world like the Middle East. It has been practiced for many centuries in Asia and Africa and the habit remains extremely popular today [6]. The high prevalence in the Middle East has led some to argue that it has reached epidemic proportions [7-9]. A great part of its popularity is attributed to the fact that it is socially acceptable for women and children to share in the NS session [10]. Interestingly, NS in the Middle East is more prevalent than cigarettes in both males and females. Modernization has influenced this old social habit making the methods of NS diverse with different materials and different instrumentation used. Further more, a substantial proportion of narghile smokers (NSs) also smoke other forms of tobacco like cigarettes. This has led to difficulties in studying accurately the health hazards of NS which are reported to include cancer, respiratory and cardiovascular ailments, to name but a few [6]. Studies investigating prevalence of NS and attitudes related to it have focused onto young generations represented by university students, and adolescents [11-15].Little if any research was conducted to investigate this habit among the educators or teachers particularly university staff members. Academicians are considered a highly qualified and well-educated group of people that are mostly concerned with research and education. Public universities in Jordan have been declared tobacco-free zones and they started to implement a non-smoking policy as a part of a plan that included all official governmental institutions. This important step is expected to cut off cigarette smoking, however, its effect on NS is questionable since this type of smoking requires a social setting outside the premises of the university. The university is considered an academic setting in the first place, and it should also be looked at as a place where different cultures intersect, and where communication and reflection takes place between students and their tutors. Role of staff members may well exceed that of education to modifying their students' behavior during the 4-6 years that students usually spend to obtain their university degrees.

A previous study investigating NS among university students found that a substantial proportion of the NSs have started the habit between the age of 16 and 18 years [14], i.e. at the age of university admission.

The aim of this study is to investigate the prevalence and pattern of tobacco use among staff members of the University of Jordan (UJ). Attitudes and awareness regarding different aspects of narghile smoking are also investigated.

MATERIALS AND METHODS

Data collection

This study was a cross-sectional survey of academic staff members at the UJ. The study sample was conveniently selected and participants were derived from all of the faculties, institutes and centers of the university. A preprepared questionnaire which was validated previously [14], and was written in Arabic had been used. The questionnaire was structured into 1) demographic data of age, gender, academic rank, marital status and number of children 2) history of tobacco use in general and NS specifically and 3) medical issues including awareness of the health hazards of NS, willingness to stop the habit, general medical health and oral health.

Questionnaires were distributed to participants and vague questions were explained as required. Completed questionnaires were collected at a later date.

Statistical analysis

The statistical analysis program SPSS (Statistical Package for Social Sciences) version 17.0 (SPSS, 2008) was used to undertake all the statistical analyses. For the categorical data, descriptive statistics were used to calculate frequencies for each category. However, for the numerical data descriptive statistics were used to point out the maximum and minimum values and to calculate the mean and the standard deviation. Cross tabulation and Chi-square test were used to test for significant difference between categorical data at the level of .05 P value at the 95% confidence interval.

RESULTS

In 2010 staff members working at the UJ were estimated to be 1431, of those 386 (27%) were females and a majority of 1045 (73%) was males.

A total of 102 or 7.1% of the staff members were invited to participate. 13 did not agree to participate, so the study sample consisted of 89 or 6.2% of the total number of staff members.

Characteristics of the participants

Table-1 describes the demographic characteristics of participants including gender, age, marital status, faculty, and academic rank. Single people and five of the married participants had no children. The main part of the married and divorced participants (n=51) had 1-4 children, and 19 of them had 5-8 children. Young adults age range was considered to be (20-40 years), middle-aged participants were considered in the age range (41-60), and elderly were considered those who were older than 60. Health faculties included: medicine, dentistry, nursing, pharmacy, and rehabilitation studies.

Characteristics of smokers

Characteristics of smokers are shown in table-2. Most smokers used cigarettes or narghile, whereas three participants (2 women and one man) considered themselves passive smokers.

Characteristics of narghile smokers

Characteristics of NSs and their attitude toward NS are shown in table-3. Cross tabulation (using chi square) indicated non-significant association between type of faculty, whether it is a health faculty or not, and NS with p=0.08.

Disposable parts

4 of the 10 subjects who stated using disposable hose tip indicated that they would still smoke if they don't find a disposable tip, and one of the 10 did not respond.

Cessation

Only six NSs were interested in quitting NS. The rest (5) were not interested in quitting and the last one did not respond to the question. On the other hand, only 4 were currently trying to quit NS, and 3 stated they previously tried to quit the habit. Those were among NSs who are intending to quit the habit now. Only 2 were successful to quit smoking. Reasons for failure to quit were reported as: influence of friends and abundance of free time.

Regarding NS cross tabulation revealed non significant association between faculty type (health or non-health and NS

Medical aspects and oral health awareness

In their response to the question: "What are the health hazards of narghile?" some participants responded by explaining the health hazards of NS (table-4), and some responded by explaining why NS should be avoided (table-5). On the other hand, 7 subjects did not give a reason why NS is harmful, and 2 stated they did not know and these were non-smokers.

Only 3 NSs reported having medical problems. Visiting the dentist was reported by all participants except 3. The reasons for dental attendance included: Check-up and scaling (n=4), when in pain or when needed (n=3), and the rest did not reply to this question. Only 4 participants visit their dentists on a regular basis; every two months. Oral hygiene practiced was in the form of tooth brushing and this was reported by all participants in a frequency of two or more times daily, except for one who brushes only once daily.

Only 3 floss their teeth regularly, one uses the floss rarely and the rest don't use the floss. Using the mouth wash regularly was reported by 5, while 3 used it sometimes, 2 rarely and 3 don't use it.

Characteristic	(N)%
Gender	F(19) 21.3%
	M (70) 78.7%
	Young (27) 30.3%
Age	Middle-aged (41) 46.1%
	Elderly (21) 23.6%
Marital status	Married (74; m=65,f=9) 83.2%
	Single (12;m=3, f=9) 1.3%
	Divorced (1) 1.1%
	Not specified (2) 2.2%
	Health sciences (14) 15.7%
Faculty	Other scientific faculties (43) 48.3%
	Humanities (27) 30.3%
	Not specified (5) 5.6%
Academic rank	Professor (31) 34.8%
	Other (58) 65.2%

Table-1: Demographic characteristics of participants. F=female, M=male

Table-2 Characteristics of smokers

Characteristic	(N) %			
$S_{malrow}(n-28) 21.50$	Narghile (12) 37.5%			
Shiokers (ii=28) 51.5%	Cigarettes (20) 62.5%			
Admitters (n=12) 38.7%	Gender Female (1) Male (11)	Age Young (4) Middle-age (6) Elderly (2)	Type of smoking Cigarettes (11) Narghile (1)	
Deniers (16) 51.6%	Female (4) Male (12)	Young (6) Middle-age (8) Elderly (2)	Cigarettes only(5) Cigarettes and narghile (3) Narghile only (7) Cigarettes, narghile, pipe and cigar (1)	

Narghile smokers (12, 38.7%)	Exclusive (8) Narghile and cigarettes (4)			
· · · · · · · · · · · · · · · · · · ·	Daily (1)			
$D_{\text{res}} = (11, 01, 70)$	Once a week (2)			
Deniers (11, 91.7%)	Once a month (4)			
	Occasionally (4)			
One Admitter	Once every 2 day			
Faculty	Health (4)			
Faculty	Others (8)			
	Young (6)			
Age	Middle-aged (5)			
	Elderly (1)			
Gender	Males (7)			
Gender	Females (5)			
Academic rank	Professors (2)			
Academic Tank	Other ranks (10)			
Marital status	Single (3), no children			
Warnar status	Married (9) children ranging 0-3			
	Adolescence (1)			
	Twenties (6)			
Onset of smoking narghile	Thirties (2)			
	Forties (1)			
	Unspecified (2)			
	Alone (1)			
Started smoking with	Friends (8)			
Started shoking with.	Colleagues (1)			
	Family (2)			
	Alone(1)			
Prefers to smoke in the company of	Friends (9)			
There is to smoke in the company of.	Alone and friends (2)			
	Coff material (11)			
	Cate\restaurant (11)			
Preferred setting	Home (1)			
	$\frac{\text{Farm}(1)}{2}$			
	Spouse participation (3)			
Family participation in smoking	Children attending (3)			
	Children participation (1)			
Use of disposable parts	Yes (10;6 M and 4 F) $M = 1$			
	Metal (1)			
Material of mabsam	W 000 (1)			
	Plastic (9)			
	Don't know (1)			

Table-3 Characteristics of narghile smokers

Table-4 Reported health hazards of narghile smoking

	Reported factors	Narghile smokers (n=12)	Non narghile smokers (n=76)	P value
1	Don't know	0	2	
4	General health hazards	3	20	
5	Respiratory diseases	3	11	
6	Lung cancer	1	0	
7	Oral and dental disease	1	2	
10	Mouth cancer	1	2	> 0.05 (mg)
11	Bad breath	1	0	>0.03 (IIS)
12	Tuberculosis	1	0	
16	Environmental	0	2	
17	Psychological	0	1	
18	Cancer	0	5]
20	Passive smoking	0	4	

Table-5. Why should narghile smoking be avoided?

Reason	Narghile smoker	Non-narghile smoker
Religious reasons	1	0
Toxic materials	3	42
Time wasting	1	4
Money wasting	2	1
No filter	0	5
Transfer of diseases from hose and tip	0	3

DISCUSSION

Cigarette smoking remains the favorable type of tobacco use among university staff members. Despite the fact that NS comes in the second place, it is showing popularity particularly among the female gender. About one quarter of the females is NSs. This finding was anticipated and it was in concordance with other reports [16].

Salameh et al (2012) reported a higher prevalence of narghile dependence among women when compared to men [17]. A more serious finding by the same authors is the significantly higher prevalence of respiratory diseases, like chronic cough, among the females when compared to males. Only one participant smoked pipe and cigar in combination with narghile and cigarettes which suggests that pipe and cigar are among the least favorable forms of tobacco use among Arabs.

Age and gender distribution of the university staff at the time of the survey was appropriately represented in the sample investigated. A limitation of this study, though, was that some participants did not respond to specific questions like age, marital status, number of children, etc. Another limitation is the inaccuracy in completing the questionnaires by giving a negative response by many to the specific question:" Do you smoke tobacco?"; a substantial number of smokers (deniers; 51.6%) were identified through their positive responses to questions pertaining to the nature and frequency of tobacco use. Most of the sample (n=74, 83.1%) responded that they were non-smokers; however, 9 indicated the frequency of cigarette smoking and those were considered deniers. And, while 12 (13.3%) of the sample admitted to be smokers, 16 (17.8%) did not admit to smoking.

Denial behavior was more obvious among NSs and those smoked narghile mainly exclusively or less commonly in combination with cigarettes. This observation demonstrates clearly that our sample does not consider narghile as a method of tobacco use. This comes in contrast to admitters who mostly smoked cigarettes. It is also obvious that the introducers to NS are mainly friends. The striking social aspect of NS habit is clearly demonstrated by the practicing the habit with friends as the favorable companions for NS and also by choosing cafés as their favorable place. The role of family seems to be less obvious as only 3 participants choose to smoke with spouse.

Determinants of this denial/social behavior seem to originate from Arabic culture which is influenced strongly by social factors. As NSs start this habit in their late teens or their twenties, influence of the family in determining the individual's behavior becomes negligible, and it is replaced by the influence of peers in the form of colleagues or friends. Setting of the narghile itself encourages gatherings and conversations making the sharing of friends more desirable. Social smoking has been defined as a subset of nondaily smoking [18]. This may apply well to cigarette smoking; however, NS does not have to be on a daily basis to confirm the history of smoking, as the smoker prefers a certain setting that includes place, companions and sufficient free time to enjoy smoking. Furthermore, a substantial number of NSs don't have the luxury of time to smoke narghile on a daily basis, which applies to our participants who smoke not on a daily but rather on a regular basis. Interestingly, one narghile smoker explained the reason behind the difficulty in quitting by abundance of free time.

Whereas peer influence was a major determinant of the NSs behavior, other social factors like age, gender, marital status and number of children seem to have no influence at all. This is expected in the age of modernization and globalization; gaps between different genders and generations disappear to allow for a better chance for every one to express their opinion and to demand their rights. Similarly, the academic factors like academic rank, or type of faculty whether health or not, had no influence either.

In their response to the question:" what are the health hazards of NS?" some answered the question accurately, and some preferred to mention the factors that make NS an unacceptable behavior or a health hazard. For the first group who explained the health hazards of narghile, it was noticed that a substantial portion of them did not actually respond correctly, and this was by mentioning that the habit causes "general health hazards" without specifying exactly what the health hazards are. Other hazards were mentioned and these include – in descending order of frequency-: respiratory disease, cancer and oral disease. None of the participants mentioned other documented health hazards like cardiovascular disease for instance [19,20]. This may reflect lack of knowledge about the main health hazards. This observation was also noticed by mentioning other vague statements like dental disease, environmental factors, or psychological factors. The second group who preferred to mention the factors that make NS an unacceptable behavior or a health hazard, focused on the high concentration of toxic materials in N, followed by time wasting, money wasting and cross infection by hose and tip. Only one participant mentioned religious factors. Interestingly, a better knowledge was noticed among a sample of students derived from Jordanian universities [14]. Those students were able to mention in detail many health hazards that have been linked with NS, however, issues like time and money wasting were not mentioned at all, probably because students were more accurate in their responses and probably because they were less anxious about the issues of money and time.

Most NSs use disposable mabsam (mouth piece); however, it was not a prerequisite for NS, since the sample would still smoke even if disposable mabsam is absent. A serious trend is the popularity of mabsam made of plastic. This can be explained by the fact that plastic mabsam is usually offered in cafés, hopefully to improve the hygienic standard of narghile which is usually shared by an infinite number of customers. Use of plastic as a material of hose or mabsam may pose a health hazard. The use of plastic hoses had been linked to elevated toxicant yields [21], suggesting that plastic mabsam may pose the same risk or even more because it is placed in the mouth.

About half of the NSs are interested in quitting; but, they find that the influence of friends and abundance of free time are obstacles to quitting. However, the true reasons behind failure to quit may include dependence as evidence suggests [22,23]

Other factors that may contribute to failed quitting is the lack of knowledge on the associated health hazards and the great influence of social factors like acceptability by society and family approval [22].

A recent survey by the Jordanian Ministry of Health reported that smoking increased from 27-29% among Jordan's population over the period from 2005 to 2007 [24]. Our study reports a prevalence of (31.5%) which seems to be higher than the national figure; however, this could be explained by the fact that the aforementioned survey did not include narghile. On the other hand, a higher prevalence of smoking of 42.4% among university students was reported recently [14]. Although NS seems to be popular among university staff members, its prevalence is still less than that of their students. Noticeably enough, one of the NSs in this study explained that he was introduced to NS by his son. So, whether the difference in prevalence of NS between younger and older generations is to disappear in the future is yet to be seen.

On the other hand, exclusive NS (28.6% of smokers) has not also replaced cigarettes which are still the main form of tobacco use among our sample (71.4%).

Although our sample reported an acceptable oral hygiene behavior of tooth brushing and using a mouth wash, only a minority visits the dentist on a regular basis for check up. Regular visits to dental and medical practitioners are important especially for smokers, since this facilitates early detection of cancerous lesions [25]. Many participants failed to mention the reasons for, or the frequency of visiting their dentist. This reflects a poor attitude towards oral health which in turn decreases the possibility of early detection of sinister lesions that may be linked to tobacco use.

CONCLUSION

NS seems to be popular among faculty members of Jordanian universities. Their smoking behavior was characterized by early age of initiation in twenties, and the influence of friends who played the role of introducers and companions. Lack of knowledge on the main health hazards of NS was evident. Not only staff members need specially- designed awareness campaigns, they may also benefit of programs constructed to encourage quitting.

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