

# KNOWLEDGE, BEHAVIORS AND HEALTH HAZARD PERCEPTION AMONG TURKISH NARGHILE (WATERPIPE)-SMOKERS RELATED TO NARGHILE SMOKING

Nuket Paksoy Erbaydar<sup>1</sup>, Nazmi Bilir<sup>2</sup>, Ali Naci Yildiz<sup>3</sup>

## ABSTRACT

**Objective:** Characteristics of narghile-smokers in Turkey have been under-investigated. In this study it was aimed to examine the knowledge, smoking patterns, and the perceptions of narghile-(Waterpipe) smokers in Turkey.

**Methodology:** In this descriptive survey, the data was collected through a structured questionnaire. The questions focused on smoking patterns of narghile smokers who were the clients (n=460) of narghile cafes. The perceptions of participants were identified using a 10 point visual scale.

**Results:** In all, 76.7% was male and 9.6% was younger than 18 years, and the mean duration of narghile smoking was 27.1 months. Peer influence (38.4%), and curiosity (18.4%) were the two most common reasons for starting narghile smoking. Aromatic narghile tobacco was preferred (86.3%) mostly, and 50.1% of them did not believe the addictive pattern of narghile smoking. One third of narghile smokers rated the negative health consequences of narghile smoking between 8.1 and 10 point on the visual scale versus 74.9% for cigarette.

**Conclusions:** Interventions are needed to inform people in Turkey about the health hazards of narghile (Waterpipe) smoking.

**KEY WORDS:** Narghile, Waterpipe, Tobacco, Smoking, Behavior, Perception.

Pak J Med Sci January - March 2010 Vol. 26 No. 1 195-200

## How to cite this article:

Erbaydar NP, Bilir N, Yildiz AN. Knowledge, behaviors and health hazard perception among Turkish narghile (waterpipe)-smokers related to narghile smoking. Pak J Med Sci 2010;26(1):195-200

1. Dr. Nuket Paksoy Erbaydar, Assistant Professor
  2. Dr. Nazmi Bilir, Professor
  3. Dr. Ali Naci Yildiz, Associate Professor
- 1-3: Hacettepe University Faculty of Medicine, Department of Public Health, Ankara Turkey

Correspondence:

Nuket Paksoy Erbaydar, MD,  
E-mail: erbaydar@hacettepe.edu.tr

- \* Received for Publication: April 29, 2009
- \* First Revision: June 9, 2009
- \* Second Revision: November 14, 2009
- \* Final Revision Accepted: November 21, 2009

## INTRODUCTION

Tobacco use is the leading preventable cause of death and disease in the world<sup>1</sup>; and total tobacco related deaths are projected to increase to over eight millions per year by 2030.<sup>1</sup> Narghile (shisha, water-pipe, hubble bubble, ghoza, hoo-kah), which is one of the ways of tobacco consumption, has been practiced for approximately 400 years<sup>2</sup>, and it is common in some countries like eastern Mediterranean countries, India, Pakistan, and Turkey. In addition to cigarette, narghile smoking has some additional dangers like infectious diseases, resulting from pipe

sharing, and the addition of alcohol or psychoactive drugs in the tobacco.<sup>3</sup>

The data of the Global Youth Tobacco Surveys conducted in 100 sites among 13-15 years of adolescents showed that there was significant increase in 34 sites due to narghile smoking in the World.<sup>4</sup> Although narghile-smokers are mainly young males, having added sweet additives and more flavors to the narghile tobacco in order to augment its attraction, the tobacco industry has caused a significant increase in the frequency of narghile smoking among women and young people.<sup>5,6</sup> Another reason for gained popularity of narghile smoking among women and young girls is its carrying less cultural stigma than does cigarette smoking.<sup>7-10</sup> Narghile smoking can also be a form of social smoking when the pipes are shared among friends in cafes that serve narghiles to customers.

There is no sufficient data either on the contemporary rise, and popularity of narghile smoking among Turkish people or the impacts of new types of narghile tobacco, the increased number of narghile serving venues, the variety and attraction of service and the advertisements on this rise. Neither is there reliable data on the common perception that narghile filters smoke rendering it less harmful than cigarette smoke. There are no research examining cultural connotations of narghile smoking particularly among women either. However, at present, knowledge on narghile smoking is more critical than ever because of the new extended limits of tobacco control law.<sup>11</sup>

This descriptive survey aimed to collect data on socio-demographic characteristics, smoking patterns of narghile smokers and their information about narghile smoking. We also sought to determine the perceptions that narghile smokers had about the health hazards of narghile and cigarette smoking.

## METHODOLOGY

This survey was conducted at nine narghile cafes located in Ankara, Turkey among 460 individuals. The cafes, which served narghile, were selected after having interviewed the owners and received their permission. The narghile

cafes are usually open between 09:00 and 22:00. They are decorated so as to create an attractive and authentic atmosphere. They usually have 10-20 narghiles ready for service.

The participants were regular narghile smokers or who were actively smoking narghile during the survey. The data was collected by a group of trained interviewers between 2004 and 2005 through a standard questionnaire that included various questions about narghile smoking. The first and the limited part of the data of this study was published in Turkish locally before (Subasi N et al. *Toraks Dergisi*, Augustos 2005;6(2):137-143.) The interviewers asked the questions face to face after clarifying the aim of the study and getting informed consents of the participants. A ten point visual scale was also used to rate the perceptions of participants about the health hazards of cigarette and narghile smoking. "0" means "not harmful", and "10" means "very hazardous" on the ten point visual scale.

Data were analyzed so as to produce descriptive statistics. The visual scale scores as a continuous variable recoded to categorical variable and summarized by a histogram to show the differences in perception of health hazards of narghile and cigarette smoking.

Most of the participants were male (76.7%), young adults (92.9% between 19 and 29 years of age), single (92.2%), and students (63.0%). The mean age of participants was 22.5±5.1 years, 9.6% of them were younger than 18 years (Table-I).

## RESULTS

Of all narghile smokers participated in the research, 61.4% also smoked cigarette and 35.2% had been smoking narghile longer than 36 months. Mean duration of narghile smoking was 27.1 months. Frequency of narghile use was daily among 4.3% of the participants, weekly among 45.5%, monthly among 40.2%, and yearly among 10.0%. Typically, the duration of each narghile smoking session was one hour or longer (almost 81.3% of the participants). The most common three reasons stated for starting narghile smoking were peer influence (38.4%),

Table-I: Socio-demographic characteristics of the narghile smokers.

Characteristics	(n = 460)	(%)
<i>Sex</i>		
Male	353	76.7
Female	107	23.3
<i>Age group Mean age</i>		
	± SD = 22.5 ± 5.1	
> 18 years	44	9.6
19-29 years	383	83.3
30-39 years	22	4.8
>40 years	11	2.4
<i>Marital Status</i>		
Single	424	92.2
Married	33	7.2
Widow, divorced	3	0.7
<i>Academic Status</i>		
Not student	170	37.0
Student	290	63.0
Primary school	130	28.2
High School	70	15.2
University	90	19.5

curiosity (18.4%), and the influence of family members that smoke narghile (11.8%). About 47.8% of the participants had family members who smoked narghile. The majority of narghile-smokers preferred aromatic narghile tobacco (86.3%) (Table-II).

Nearly half of the narghile smokers believed that narghile smoking was not addictive (50.1%) and 15.3% had no idea about the addictive characteristics of narghile. A minority of the participants believed that communicable diseases could be spread via narghile smoking (23.3%). The majority (89.3%) of narghile-smokers had no intention of quitting (Table-III).

The participants were asked to rate the health hazards of cigarette and narghile on a 10 point visual scale (not harmful = 0 and very hazardous = 10). In all, 74.9% rated cigarette's health hazard between 8.1 and 10 versus 32.4% for narghile. The points given to negative health consequences were lower on all intervals (0-2, 2.1-4, 4.1-6; 6.1-8; 8.1-10) for narghile then cigarettes (Figure-1).

## DISCUSSION

This descriptive study provided preliminary data about narghile smoking as an emerging public health problem in Turkey. In Turkey, the

Table-II: Behaviors of narghile smokers related to narghile smoking (Mean± SD = 27.1 ± 23.2)

Survey item	n	%
<i>Cigarette smoking status (n = 451)</i>		
Non smoker	134	29.7
Ex smoker	40	8.9
Currently smoker	277	61.4
<i>Duration of narghile smoking (months) (n=460)</i>		
1-11	93	20.2
12-23	88	19.1
24-35	117	25.4
>36	162	35.2
<i>Frequency of narghile smoking (n=460)</i>		
Daily	20	4.3
Weekly	209	45.5
Monthly	185	40.2
Yearly	46	10.0
<i>Usual duration of narghile smoking session (n=460)</i>		
<1 hour	86	18.7
1 hour	179	38.9
> 1 hour	195	42.4
<i>Why smoke narghile (n = 450)*</i>		
Peer influence	173	38.4
Curiosity	83	18.4
Family influence	53	11.8
Relaxation	41	9.1
Enjoy the taste	33	7.3
Influence of social environment	18	4.0
Imitation	17	3.8
Instead of cigarette	8	1.8
Others (smoke with alcohol, ambience, traditional issues, leisure time activity, travel to Iran, ...)	24	6.0
<i>Narghile smoking status of family members(n=460)</i>		
Yes	220	47.8
No	240	52.2
<i>Type of narghile tobacco preferred (n=460)</i>		
Aromatic	397	86.3
With alcohol	37	8.0
Non-aromatic	26	5.7

\*Some participants did not answer to the question.

main venues to smoke narghile are cafes. According to news published in a newspaper, there were more than 150 narghile cafes in Ankara and about 5 000 all over the country.<sup>12</sup> Although there has been a ban in Turkey on the sale of tobacco products to people younger than 18 years since 1998, it was observed that 9.6% of our participants were younger than 18 years of age. This finding showed that there was a problem enforcing the current tobacco ban in narghile cafes in Turkey.

Table-III: Perceptions of narghile smokers.

Survey item	(n)	%
<i>Perception of narghile addictiveness (n=459)*</i>		
Yes it is addictive	159	34.6
No it is not addictive	230	50.1
No idea	70	15.3
<i>Belief in the spread of communicable diseases via narghile use (n=459)*</i>		
Yes, they are spread this way	107	23.3
No, they are not spread this way	164	35.7
No idea	188	41.0
<i>Intended to quit narghile smoking (n=460)</i>		
Did not intend to quit	411	89.3
Intended to quit 1 week later	37	8.0
Intended to quit one month later	1	0.2
Intended to quit one month later	11	2.5

\*One participant did not answer to the question.

According to Global Youth Tobacco Survey (GYTS) conducted among the age group of 13-15 years from 20 countries in the Eastern Mediterranean Region (EMR), 15.6% of boys and 9.9% of girls used tobacco products as waterpipe.<sup>4</sup> According to a university survey conducted in Turkey, 35.7% of first year students and 46.1% of third year students ever smoked a narghile.<sup>13</sup> The findings of our study and the university survey clearly showed that narghile smoking was prevalent among young people in Turkey similar to some other countries.<sup>10-19</sup> For example, the percentage of narghile smoking is 45.3% in Aleppo University in Syria, 32.4% in universities of Beirut, Lebanon, 53.6% in four universities of Karachi Pakistan, and 37.9% in a British university.<sup>14-16</sup>

The present study demonstrated that most of the narghile smokers were male, and they were current or former cigarette smokers. Not only cigarette smoking combined with narghile smoking increases the detrimental effects of tobacco, but also tobacco addiction caused by narghile smoking could lead to or relapse cigarette smoking.

Almost half of the participants smoked narghile on a weekly basis, and for nearly half of them, a typical narghile smoking session lasted more than one hour. This means that they regularly visited a narghile cafe once a week and spent a couple of hours in narghile cafes. A typical narghile smoking session costs about 6-12

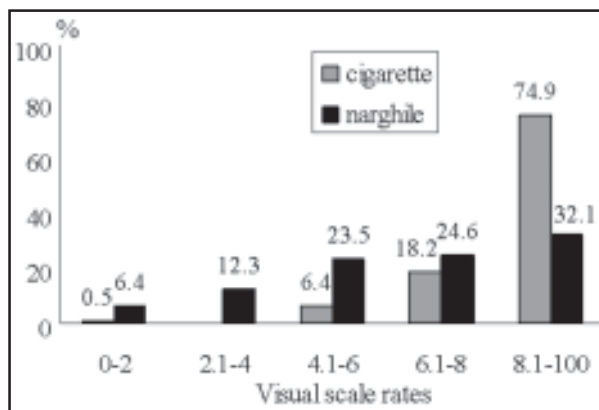


Fig-1: The data of narghile and cigarette smoking health hazard perception scale (%).

US Dollars. It is possible to smoke as a group during one session. Although there are many stores that sell narghile and other products necessary for smoking, young people rarely owns their personal narghile equipment due to the cultural norms for young people about smoking when they are with their families in Turkey. The place where narghile is smoked can differentiate between countries due to several factors. For example the main venues for narghile smoking in Lebanon, Syria or Pakistan are cafes, but it is their home for young people in Britain.<sup>8-10,16</sup> But there is no information how British people prepare narghile at home. Nowadays it is noticed that narghile cafes started a new service in Turkey: it is “home service for narghile”.

The factors identified by the present study that influence an individual’s decision to start narghile smoking were similar to those that influence cigarette smoking in Turkey.<sup>21,22</sup> “Peer influence” & “curiosity” were the main factors reported by the participants that led to narghile smoking. Although 47.8% of participants had a family member that regularly smoked narghile, the findings of the study showed the effect of family members on starting to narghile smoking was limited. Flavored and sweetened narghile tobacco has been hypothesized to be a factor contributing to the recent spread of narghile smoking.<sup>4-6</sup> In fact, the majority of participants of the present study reported preferring aromatic narghile tobacco too. Half of the narghile smokers in the present study reported that narghile smoking was not

addictive. This result was similar to some other surveys conducted in the other countries like Pakistan, but contradicts with the findings about cigarette smokers in Turkey.<sup>1 2-16</sup>

Although scientific findings indicate that some communicable diseases can spread by narghile smoking<sup>3</sup>, four in ten of narghile smokers in the present study had no knowledge about this potential risk, and three in ten thought that this information was wrong.

The vast majority of narghile smokers in the present study had no intention of quitting. In a survey conducted in Syria, 28.4% of the customers of narghile cafes wished to quit.<sup>23</sup> In contrast, 76.9% of first year and 76% of third year university students that smoked cigarettes considered quitting, according to a Hacettepe University Survey conducted in Turkey.<sup>13</sup> This difference was related to the positive perception of narghile smoking reported by our participants, and the lack of information that it is addictive with health hazards.

In the present study, the participants rated the negative health consequences of cigarette and narghile using a 10 point visual scale. The percentage of participants who gave highest points to the narghile on the scale was one third of the participants scored the cigarette as very hazardous. These findings were consistent with those of other studies on the same topic.<sup>12-16,24</sup> Among the students of a university in USA, 52.1% of those sampled thought waterpipes were less harmful than cigarettes whereas in Egypt, 21% of 206 adult male waterpipe smokers reported that they preferred waterpipe use over cigarette smoking because it was less harmful.<sup>19,25</sup>

Narghile(Waterpipe) advertisements on TV, radio, and in printed media are banned in Turkey, but advertisements via the internet continue and are currently the preferred method of advertisement by narghile cafes. Moreover, the number of internet websites that sell narghile tobacco, charcoal, etc. is high. Following the ban on tobacco in cafes in Turkey, which commenced in July 2009, the purchasing of personal narghile might increase, and narghile smokers might begin preparing and smoking narghile at home.

Although the advertisement of tobacco in Turkey has been banned since 1998, during the data collection period of this study, we observed that narghiles and narghile cafes were advertised in posters on the front windows of cafes and on web pages. We wrote a short report based on our observations in order to inform the Minister of Health (MOH) about the problem and our concerns.

The second ban on indoor tobacco smoking in public spaces in Turkey came into force May 19th 2008. This current ban started at cafes, bars, and restaurants one year later in 19 July 2009. According to the MOH, narghile cafes were covered by the law and they stopped serving narghile by 19 July 2009. Owners of narghile cafe requested a special regulation for narghile cafes based on historical and touristic importance of narghile. The Association of Cafe Owners including narghile cafe owners of Izmir went to Council of State to demand the removal of the tobacco ban affirming the liberties of cigarette and narghile smokers. Although it has similar affects with other types of narghile tobacco, the service of herbal narghile tobacco called as "binar" produced from sugar-cane spreads rapidly in narghile cafes after the expansion of tobacco ban in Turkey.

The call for immediate action against narghile does not only assign responsibilities to the government and policy makers but also to health care providers. According to the WHO Study Group on Tobacco Product Regulation, narghile and narghile tobacco should be subjected to the same regulation as cigarette and other tobacco products. Narghiles and narghile tobacco packages should include strong health warnings. Narghile related actions should be included in comprehensive tobacco control efforts, including prevention strategies and cessation interventions. Education of health professionals and the public at large about the risks of waterpipe smoking is essential. Additionally media should be involved in creating awareness against the hazards of narghile smoking.

In conclusion, the narghile smokers were not aware of the potential health risks of narghile smoking and thought that narghile smoking

was less harmful than cigarette smoking. The current ban on tobacco including narghile smoking in narghile cafes in Turkey is crucial for the prevention of a narghile epidemic in Turkey. Additional initiatives which are listed above are needed to be taken by the MOH to increase people's awareness on the health hazards of narghile and to prevent more young people from becoming narghile smokers.

### ACKNOWLEDGEMENTS

We would like to thank Cigdem Esin and Scott Evans for English editing and Erkan Ilhan, Ahmet Avluk, Gökhan Bavli, Murat Biteker, Engin Kirmizigul, Bilgin Kutukcu, Ayse Sencan, Hatice Sule Taskingul, Mehmet Tetikoglu, and Zeynel Abidin Yargic for their contribution to the data collection.

**Abbreviations Used:** GYTS = Youth Tobacco Survey, EMR = Eastern Mediterranean Region, MOH = Ministry of Health

### REFERENCES

- World Health Organization. WHO Report on the Global Tobacco Epidemic, 2008 - The MPOWER package. Geneva: World Health Organization; 2008.
- Anjum Q, Ahmed F, Ashfaq T. *Shisha smoking – an imminent health hazard*. J Pak Med Assoc 2007;57(9):430-1.
- Munckhof WJ, Konstantinos A, Wamsley M, Mortlock M, Gilpin, C. A cluster of tuberculosis associated with use of a marijuana water-pipe. The Int J Tuberculosis and Lung Disease 2003;7(9): 860-5.
- Warren CW, Veronica Lea V, Lee J, Nathan R. Jones NR, Asma S, et al. Change in tobacco use among 13-15 year olds between 1999 and 2008: findings from the Global Youth Tobacco Survey. Global Health Promotion, 2009; Supp (2): pp. 38-90.
- Prignot JJ, Sasco AJ, Poulet E. Alternative forms of tobacco use. Int J Tuberc Lung Dis. 2008;12(7):718-27.(5).
- Soweid, RA. Lebanon: Waterpipe Line to Youth. Tobacco Control. 2005; 14: 363-4.
- Kandela P. Nargile smoking keeps Arabs in wonderland. Lancet 2000;356:1175.
- Tamim H, Terro A, Kassem H. Tobacco use by university students, Lebanon, 2001. Addiction 2003;98:933-939.
- Maziak W, Eissenberg T, Rastam S. Beliefs and attitudes related to narghile (waterpipe) smoking among university students in Syria. Ann Epidemiol 2004;14:646-654.
- Jawaid A, Zafar AM, Rehman T-U, Nazir MR, Ghafoor ZA, Afzal O et al. Knowledge, attitudes and practice of university students regarding waterpipe smoking in Pakistan. The Int J Tuberculosis and Lung Disease 2008; 12(9):1077-1084 (8).
- Law Concerning on the Amendment of Concerning of the Prevention of Harmful Effects of the Tobacco Products. Official Gazete 2008; 19 January: numbered 2676, Legislation number 5727.
- Das G. "No bans on tobacco can take away my silver tube of nargile" Turkish Daily News 2008; April 26.
- Tezcan S, Özcebe H, Subasi N, Uner S, Telatar G. Hacettepe Universitesi öğrencilerinin ruhsal saglik duzeyleri ve madde kullanim boyutlarinin saptanmasi, (Arastirma Raporu) Ankara: Mart, 2006. [Tezcan, S, Özcebe, H, Subasi, N, Uner, S, Telatar,G. Determination of mental health level and drug usage prevalence of Hacettepe University students (Survey Report). Ankara: March, 2006.]
- Maziak W, Fouad FM, Asfar T, Hammal F, Bachir EM, Rastam S, et al. Prevalence and characteristics of narghile smoking among university students in Syria. Int J Tuberc Lung Dis 2004;8:882-889.
- Tamim H, Terro A, Kassem H, Ghazi A, Khamis TA, Hay MMA, et al. Tobacco use by university students, Lebanon. Addiction 2001; 98: 933-939.
- Jackson D, Aveyard P. Waterpipe smoking in students: Prevalence, risk factors, symptoms of addiction, and smoke intake. Evidence from one British university. BMC Public Health 2008, 8:174.
- Varsano S, Ganz I, Eldor N, Garenkin M: Water-pipe tobacco smoking among school children in Israel: frequencies, habits, and attitudes. Harefuah 2003;142(11):736-741, 807.
- Refaat A: Practice and awareness of health risk behaviour among Egyptian university students. Eastern Mediterranean Health J 2004;10:72-81 [http://www.emro.who.int/Publications/EMHJ/1001\_2/Practice.htm].
- Primack BA, Sidani J, Agarwal AA, Shadel WG, Donny EC, Eissenberg TE. Prevalence of and associations with waterpipe tobacco smoking among U.S. university students. Ann Behav Med 2008;36(1):81-6.
- Maziak W, Eissenberg T, Rastam S, Hamal F, Asfar T, Bachir M, et al. Beliefs and attitudes related to narghile (waterpipe) smoking among university students in Syria. Annals of Epidemiology 2004;14(9):646-54.
- Bilir N, Dogan-Guciz B, Yildiz AN. "Behaviours and attitudes of smoking-Ankara, Turkey". (Survey Report). Ankara: 1997. ISBN97594618-1-1.
- Kosku N, Kosku M., Cikrikcioglu U, Özlen-Tumer Z. Knowledge, attitude, and behaviors of Members of Association of Toraks on Cigarette. J Toraks 2003;3:223-30.
- Asfar T, Ward KD, Eissenberg T, Maziak W. Comparison of patterns of use, beliefs, and attitudes related to waterpipe between beginning and established smokers. BMC Public Health 2005;5:19.
- Smith-Simone S, Maziak W, Ward KD, Eisenberg T. Waterpipe tobacco smoking: Knowledge, attitudes, beliefs, and behavior in two U.S. samples. Nicotine & Tobacco Research 2008;10(2):393-8.
- Israel E, El-Setouhy M, Gadalla S. Water pipe (Sisha [sic]) smoking in cafes in Egypt. J Egypt Soc Parasitol 2003;33:1073-85.