



## RESEARCH ARTICLE

# “It’s beyond the pale to smoke hookah”: perceptions of Iranian adolescents on social unacceptability of hookah smoking

KHADIJEH KESHAVARZIAN<sup>1</sup>, ASGHAR MOHAMMADPOURASL<sup>2</sup>, HAMID ALLAHVERDIPOUR<sup>3</sup>, HAIDAR NADRIAN<sup>4</sup>

<sup>1</sup> Department of Epidemiology, Faculty of Health, Tabriz University of Medical Sciences, Tabriz, Iran; <sup>2</sup> Research Center of Psychiatry and Behavioral Sciences, Tabriz University of Medical Sciences, Tabriz, Iran; <sup>3</sup> Research Center of Psychiatry and Behavioral Sciences, Tabriz University of Medical Sciences, Tabriz, Iran; <sup>4</sup> Social Determinants of Health Research Center, Tabriz University of Medical Sciences, Tabriz, Iran

## Keywords

Hookah smoking • Adolescents • High school students • Social unacceptability • Qualitative

## Summary

**Introduction.** Globally, the popularity of hookah smoking, as a social and entertaining behavior, is increasing among adolescents and youths. The present study aimed to explore the perceptions of high school students on Social Unacceptability (Arabic/Persian term = *Qabahat*) of Hookah Smoking (SUoHS) in an Iranian context.

**Methods.** In this qualitative study, 31 student adolescents in Tabriz, Iran, were invited to participate in semi-structured individual interviews and focus group discussions (FGDs). Data were analyzed using interpretative thematic analysis.

**Results.** The unacceptability of hookah smoking was viewed at the “disreputability of hookah smoking and hookah smokers”.

The students also explained SUoHS in the “incivility of hookah smoking and smokers in the society”, “disrespectfulness of hookah smokers and their families”, and “the consequences of hookah smoking”.

**Conclusions.** The SUoHS is rooted in the social values and norms within communities. To decrease hookah smoking levels among adolescents, school health nursing interventions should be tailored to bridge the gap between their recognition of SUoHS and subsequent behavior change through creating group dynamics highlighting the domains of social unacceptability of the behavior.

## Introduction

Tobacco smoking is a preventable risk factor for disease morbidity and mortality [1, 2]. Among the modes of using tobacco, hookah smoking (HS) is a reemerging phenomenon that may increase the risk of oral, esophageal, and pulmonary cancer, as well as reduced pulmonary system function [3]. The word “hookah” is generally used for a particular method of tobacco smoking, in which smoke passes through water before inhalation [4]. Globally, the popularity of HS, as social and entertaining behavior, is increasing [5-8] among adolescents and youths [9, 10], particularly in the Middle East and North African (MENA) countries [11], like Iran [12]. The increased tendency towards HS among adolescents may be associated with their misunderstanding of the harmlessness of the behavior, compared to other forms of tobacco smoking. Considering such increasing popularity, HS is the new mode of tobacco smoking with a lower level of ‘qabahat’ (social unacceptability), compared to other modes of tobacco use, in the 21<sup>st</sup> century [13, 14].

## LITERATURE REVIEW

‘Qabahat’ (qa(e)bāhat) is an originally Arabic term rooted in the term ‘qobh’, which means socially undesirable and unaccepted, aberrant, and deviant [15]. In the Persian language, ‘qabahat’ also means not in accordance with

accepted rules, social norms, or standards [15]. Findings of a study among students in Najaf-Abad County, Iran, have shown that the perception of low Social Unacceptability of Hookah Smoking (SUoHS), compared to other modes of tobacco use, caused the adolescents to easily tend to the behavior [16]. In another study in the U.S., one of the most frequent reasons for the university students’ tendency towards HS was their perceptions on the high levels of social acceptance and popularity for HS [17]. It is usually postulated that HS at home reduces its social unacceptability for children and adolescents and such reduced unacceptability may facilitate the initiation and continuation of the behavior. Jahanpour et al., in a qualitative study, reported that the high popularity and the common use of hookah may have decreased the SUoHS among adolescents and have rendered it a normal and acceptable practice [13]. Sabahy et al. also noted low the SUoHS as a facilitating factor for the inclination of youth toward HS [18].

Despite the above-mentioned speculations in the literature regarding the importance of SUoHS, to our knowledge, no study has yet clearly attempted to define this phenomenon and to make sense of it in terms of the meanings people bring to the concept. Due to the increasing rate of HS among Iranian adolescents and the association of social desirability with their tendency towards HS, we aimed to explore the concept of SUoHS from the perspective of Iranian high school students. We are interested in finding

out how high school students perceive SUoHS. This will inform future researchers on how to consider SUoHS while investigating the cognitive determinants of HS among adolescents. Finding a better understanding of the phenomenon and its possible domains may also provide future researchers with a comprehensive conceptual framework while designing HS cessation programs among adolescents and young populations.

### RESEARCH QUESTION

The following research question guided our study: “How do Iranian high school students explain the social unacceptability of hookah smoking?”

## Methods

### PARTICIPANTS AND DESIGN

This was a qualitative study with a thematic analysis approach conducted to explore the social unacceptability of HS among high school students. The study setting was the high schools in Tabriz, East-Azerbaijan province, Iran. The participants were 31 students (16 boys and 15 girls) at the range of 15 to 17 years of age in Tabriz high schools. The participants were not asked about their history of hookah smoking. To obtain views across a range of social circumstances, the students were selected from different socioeconomic backgrounds, based on their records at the schools. Inclusion criteria for the study were living in Tabriz, studying at grades two and three of the high school (11<sup>th</sup> and 12<sup>th</sup> grades), and the willingness of both the students and their parents to participate in the study. Ethical approval to conduct the study was obtained from the Ethics Committee at Tabriz University of Medical Sciences.

Among five education districts of Tabriz, a district was selected as the setting of work, and the participants were selected from the high schools situated in the district of interest. The first researcher visited the schools and clarified the objectives of the study to the administrators of schools. Then, the students were randomly invited to participate in the study, and if agreed were suggested to have an appointment with the first researcher in a private room at their school. Before setting the appointment, one parent of the students was contacted on the phone and informed of the objectives of the study. In the case of their oral agreement with the participation of their child in the study, the appointment with the student was set. After primary coordination, interviews were conducted in the time and place preferred by the participants. So, the students who were willing to participate in the interviews were included after obtaining informed consent. Before the interviews, the research objectives were first explained to the participants and, written informed consent was obtained from both the students and one of their parents. The interviews were voice recorded with their permission.

### DATA COLLECTION

We developed an interview schedule contained open-ended questions to explore the students' perceptions

Tab. I. The main question and its probing questions that were asked from the participants.

- How do you see the social acceptance and popularity of hookah smoking? Please describe it.
- How do you describe a boy or a girl who is smoking hookah?
- How do you see the family of a person who use hookah?
- What bears in your mind, when you see that your friend is smoking hookah?
- What are the characteristics of a hookah user in your society? Based on your viewpoint, why does he/she smoke hookah? What the reasons may be?
- How would you describe a ring of friends in a coffee shop who are smoking hookah?
- Based on your opinion, how do you explain hookah smoking among women?
- In your idea, what are the outcomes/consequences of hookah smoking? Who gets these consequences? Are they favorable or adverse?
- What would happen if hookah smoking does not exist? How would life change?

of the SUoHS. Firstly, three Focus Group Discussions (FGDs) with 13 participants (4-5 students in each FGD) were conducted to find a general understanding of the students' views of the phenomenon. Then, eighteen students were individually interviewed to dig deeper down into their perceptions of the SUoHS. The main question initially asked from the participants was ‘how would you explain hookah smoking?’, and then some probing questions (Tab. I) were asked according to the interview schedule and the participants' answers. In the two modes of data collection, the probing questions were different and varied from one interview to another. The selection of probing questions for an interview was based on the results discovered during the data analysis of the prior interview. The first researcher (KK), with considerable experience in conducting qualitative interviews with adolescents, conducted the FGD sessions, and facilitated the discussions by asking some probing questions and encouraging all participants to join in the discussions. Another researcher of the study (HN), who did not have any participation in the discussions, supervised the sessions, and wrote down the required notes and comments to promote the discussion process. On average, the FGDs and the individual interviews lasted 1.15 hours and 45 minutes, respectively. All interviews were audiotaped applying a digital voice recorder. With fifteen interviews, we achieved theoretical saturation of the data, and no new code, category, and a theme emerged in the last interview.

### DATA ANALYSIS

We transcribed the interviews verbatim and reviewed the text for accuracy. We then carried out a thematic analysis using the qualitative data analysis software MAXQDA<sub>10</sub> (2011). Individual interviews and FGDs were initially integrated for data completeness and confirmation. We assumed that each interview method reveals different parts

of the SUoHS and thus provides us with complementary views on the phenomenon. We also assumed that such integration may help expand the breadth and the depth of our findings. So, we conducted the individual interviews and the FGDs to explore the personal experiences of the students on the SUoHS and to examine their beliefs and opinions on the phenomenon, respectively. Moreover, during FGDs, three students were unable and/or refused to participate in a focus group. So, as a pragmatic reason to combine the interviews, we invited them to take part in an individual interview.

As suggested by Braun and Clarke [19], the thematic analysis may be approached in two ways; an essentialist/realist way or a constructionist way. Firstly, a qualitative researcher reports the experiences, meanings, and realities of participants, and latterly, the researcher explores the ways that experiences may be affected by a range of discourses within a community. We presumed that the students' views of the SUoHS may be influenced by social determinants, like the history of contacts with the behavior, culture, and socioeconomic status of their families. We, therefore, applied a constructionist framework, with a focus on the latent/interpretative level of the underlying viewpoints, assumptions, and conceptualizations of the students. We read and re-read the transcripts, and drew the initial codes from the data. Then, in close discussion within the research team, we collated the codes into themes and developed a coding frame. All interviews were conducted and analyzed by the first author (KK), and she derived the themes from her preconceptions. When conducting and analyzing the interviews, she had the research question in mind. We, thus, took an epistemological strategy to uncover the adolescents' perceptions of the SUoHS, as a concept with a high degree of subjectivity. To account for inter-rater reliability, a second researcher (HN) randomly selected and coded one in six raw transcripts. We (all authors), thus, checked the agreement with the themes and ensured that both researchers deduced similar themes from the texts. We, eventually, made some minor changes to terminology, although no change was made to the emerging themes.

#### ETHICS APPROVAL

This research was approved by the Ethics Committee at Tabriz University of Medical Sciences (ethical approval code: IR.TBZMED.REC.1396.1067). The participants were told about the aim of the study and were assured of the confidentiality of data. All participants and one of their parents signed a consent form before data collection.

## Results

The students were between 15-17 years of age and were studying either in the 10<sup>th</sup> or the 11<sup>th</sup> grades of high school. During thematic analysis, the predominant theme aroused was termed as "disreputability of hookah smoking and hookah smokers". The students explained the SUoHS as a maladaptive behavior. They also viewed

the unacceptability of behavior at the impudence, impertinence, and rudeness of the hookah smokers. The participants perceived HS as rude and disrespectful behavior. They considered the smokers as individuals that disrespect the people around them while smoking. The results were universal across the students, regardless of their age and gender.

Themes were grouped as follows: *incivility of hookah smoking and smokers, disrespectfulness of hookah smokers and their families, and the consequences of hookah smoking.*

#### INCIVILITY OF HOOKAH SMOKING AND SMOKERS

Based on the students' opinion, the SUoHS was seen in the rudeness and unsociability of the behavior and those who perform it. They believed that the people in the society have a highly negative opinion of hookah smokers. For this theme, three main categories were identified as follow:

- *Behaving against social values and norms:* as participants believed, hookah users behave against the social norms and values and disregard the culture of society. "These people have come to value a thing [hookah smoking] that is, in fact, a disvalue. This behavior is against religious and social values" (participant number 7; p. 7). They believed that hookah smokers were a plague and a burden on society. "I say they're a burden on society because these are the people who do not serve it. They just cause trouble" (p. 6). "I say, you're a plague on society" (p. 5).
- *Violating the others' rights:* the students believed that hookah smokers violate the rights of people in the community. The smokers bother people around them because of the bad smoke and the bad smell of hookah. "Hookah use may disturb others as well. Maybe those around you cannot tolerate it" (p. 6). They also reported that hookah smokers do not respect others and are troublemakers for their society. "This behavior is not respectful; they do not respect others" (p. 7). According to another participant, hookah users may, "harass some people... may insult girls..." (p. 29).
- *Being untrustworthy:* the participants believed that hookah users are untrustworthy and cannot be acknowledged or approved by others. "Maybe these are people we cannot trust anymore" (p. 6).

#### DISRESPECTFULNESS OF HOOKAH SMOKERS AND THEIR FAMILIES

The students considered the SUoHS in the lack of respect and courtesy towards the smokers and their families. This theme was grouped into three categories:

- *Negative attitude towards hookah smokers:* the students perceived HS as a rude behavior, because the smokers were seen as individuals with playfulness, weak willpower, irresponsibility, poor knowledge/experience, and promiscuity. They believed that smokers were bad role models within the community and maybe also attracted to addiction. According to them, hookah users pave the way for ruder behaviors by smoking hookah, as this behavior may mark

the beginning of using narcotics, and addiction. *"Hookah itself is very addictive and one becomes dependent on it by experimenting it even once with friends"* (p. 11). Participants believed that hookah users have lost their identity, do not pursue any clear goal in life, and waste their life. *"First, they have lost their identity. Second, they have lost themselves by doing this"* (p. 5). They also believed that hookah users have weak willpower and they lack the skill of saying no. *"Hookah users may have no willpower. That is, they lack the will not to pursue it [hookah smoking]"* (p. 29). *"These people are playful. They do not care about anything else"* (p. 13).

According to them, hookah users are ignorant and are, unmindfully, proud of their HS. *"One can say that these people are ignorant of what they are doing"* (p. 7). Participants also believed that hookah users are promiscuous, improvident, hooligans, rowdy, and dishonorable, and may do anything. *"Maybe one can refer to them as a hooligan person with improvident and undisciplined behavior"* (p. 28). *"I believe those who use hookah are promiscuous"* (p. 14). Participants considered hookah users as smoky, shameless, liars, criminals, and abusive individuals. In total, they perceived hookah users as a negative role model in society. They also believed that hookah users have a bad personality, and can mislead others. *"These people are considered as smokers in the society"* (p. 11). *"What you expect of a graceful and dignified person in terms of the language they use and the way they dress?"* (p. 6).

- *Deeply disrespectful attitude toward female hookah smokers:* many students believed that female hookah users have forgotten their true nature (as a beauty symbol), messed up their physical and spiritual beauty, and may even have illegitimate relations with others. *"I think she [a female hookah smoker] has forgotten her nature and the goal of her creation"* (p. 7). They presented a more negative attitude toward HS for females, compared to males. They considered these women shameless, unchaste, nasty, notorious, and rowdy. *"When we see some of them are smoking hookah, they seem to be nasty and notorious"* (p. 6). They also believed that these women are Khiabani girls [street girls: a local folk expression used to explain the women (particularly girls) who have run away from their family] who desert their families and home, turn to whorehouses, and go astray. *"These are often girls running from home and having problems with their parents. They've turned to streets and men"* (p. 22).
- *Derogatory attitude toward the family of hookah users:* the students would often report that in the families of hookah users there was not a good parent-child relationship. Due to their familial problems, the parents mistrust their children. *"[It is] a family who never trust their children"* (p. 25). *"their parents may have problems and do not have good relationships"* (p. 29). They also believed that such families do not raise their children well and cannot control them. *"They do not have the culture of parenting, have not raised their*

*children well"* (p. 14). Based on their ideas, these families were either too strict or too lenient. *"They may be families who have imposed too many limitations on their children from the beginning"* (p. 31). *"I think they are careless and do not care about their children at all"* (p. 25).

According to them, such families are unaware and ignorant families who consider HS as a healthy hobby and do not know its harms. *"They think it is a healthy hobby"* (p. 19). They also believed that HS is a normal behavior in the users' families. They viewed these families as promiscuous, shameless, degenerate, ignorant, uncultured, and lowborn families. *"They have not been born in a high-class family"* (p. 14). *"The family of hookah users is too uncultured family"* (p. 28).

### CONSEQUENCES OF HOOKAH SMOKING

Based on the students' ideas, HS was considered to be a socially undesirable behavior because it damages the physical, mental and familial health of the smokers. They also believed that the behavior may damage their social health. The sub-categories are explored in more detail below:

- *Self-harm:* a majority of participants believed that HS was harmful and may cause cardiac and pulmonary diseases and cancer, and may damage one's physical beauty. *"Those who use hookah may be suffered from different diseases, like pulmonary diseases"* (p. 17). *"It makes you lose your physical beauty"* (p. 14). They commented that hookah users are dependent on the behavior, and explained the users as unhealthy individuals with poor mental health who may even attempt suicide. *"Hookah users are depressed guys who may attempt to kill themselves"* (p. 14).
- *Harm to society:* according to students, HS may damage the community health and development. They perceived HS as a behavior that facilitates the spread of different diseases and substance use within the community, and thus endangers community health. *"Hookah endangers our health and destroys the health of our family, community, and society"* (p. 3). Not commonly commented on, some students believed that individuals from different age groups congregate in hookah lounges where fighting, violence, and ethnic groupings are common. The promotion of behavior within society results in the development of hookah lounges, which consequently promote violent behaviors in the community. *"In these places, there are many delinquents, and fights and violence are common, the ethnic grouping is common"* (p. 18).
- *Harm to the family ties:* many students believed that smokers do not pay attention to their family, have misbehavior with their family members, and have weak parent-child ties. *"A characteristic of hookah smokers is that they do not pay any attention to their family"* (p. 28). As they noted, it may also cause detachment between the smoker and his/her family and what he/she was going on. *"It makes you move away from things you like"* (p. 31). *"[hookah smok-*

ers] *actually destroy God's blessing with their own hands*" (p. 7). "*they [hookah smokers] do not respect their parents or do not ask their permission*" (p. 23).

## Discussion

To the best of our knowledge, this was the first qualitative study to explain the SUoHS from the viewpoints of adolescents. The students explained the SUoHS in disreputability and incivility of hookah smokers and their behavior within the society, and the disrespectfulness of smokers and their families. They also perceived the SUoHS in the consequences of behavior. These findings suggest that the concept of the SUoHS originates from the social context of society, and is rooted in the social values and norms related to smoking within communities. The social values affect the attitude and subjective norms of individuals toward the behavior. The present study helps to explain why smoking prevention and/or cessation programs may not lead to behavior change. According to the theory of planned behavior [20, 21] and the health belief model [22, 23], the first step to hookah smokers implementing HS cessation involves them perceiving themselves to be at risk of health problems as a result of smoking. They would be also affected by the significant others around them in terms of either continuing or quitting the behavior. They would then need to believe in their ability to stop smoking. Before these cognitive factors, there may be considerations on the significant role of social factors, like social valuing of the smokers and their behavior. The perception of adolescents on the way that society values their behavior may influence their attitude and subjective norms toward HS. All these factors together may constitute the perception of adolescents on the SUoHS, which may, in turn, influence their intention to practice the behavior. In other words, as a possible presumption, HS may not be prevented or quit if there would be no consideration of the role of the SUoHS.

Based on our data, the students perceived hookah users as untrustworthy individuals who do not respect the rights of others. They believed that HS is against social values and norms. These findings are consistent with those reported by Khalil et al. [24] in a qualitative study in the East Mediterranean region. Their results described HS by women as a behavior that opposes society and social norms. As they suggested, the social context of HS is crucial to understanding the behavior. In more conservative communities where norms and customs are well-defined and confirmed, there may be some social limitations for HS as compared to more liberal societies. Maziak et al. [25] in a study in Syria reported traditions and norms as the main reasons noted by women for not smoking.

Our data indicated that the SUoHS lies in the disrespectfulness of hookah users, particularly female hookah users, and their families. Our participants perceived hookah users as promiscuous, playful, and irresponsible individuals. Similarly, Gholami et al. [26] in a qualitative study in Iran identified that people had a

negative attitude towards hookah users, demonstrating the decreased popularity of the users in society. Our participants also believed that the social unacceptability of this behavior is much stronger for women, compared to men, and explained such women as shameless and promiscuous; a finding consistent with previous research [24], suggesting that being a female hookah user is viewed as cheap and shameful. The SUoHS was also explained in the perceptions of adolescents on the family of hookah users. Based on our data, when HS is common within a family, the social unacceptability of behavior is broken down. In such families, the child may feel free to perform other obscene behaviors, like cigarette smoking and alcohol misuse, within family environment, which may attenuate respectfulness towards parents over time. Roskin and Aveyard [27], in a qualitative study in Canada, identified that regular HS within a family was considered as a normal activity, which may be similar to watching television over time. Another Iranian study among adolescents showed that lack of family supervision increased the odds of HS [16]. Our data also indicated that the SUoHS may be partly due to the consequences of behavior. Students believed that HS was socially undesirable because it could damage the users and their society. In a systematic review [28] on the motives, beliefs, and attitudes towards HS, achieving peace and pleasure was among the main motives for HS. Mohammadkhani and Rezaei [16] also showed associations between HS and hopelessness among adolescents. They also revealed that family conflicts have significant correlations with the tendency towards HS. Similarly, the students in our study contended that HS was undesirable because it weakened users' relationships with their families. Accordingly, they could gradually get away from their families, and have poor and strained relationships with their parents. Jahanpour et al. [13] in an Iranian qualitative study reported relationships between culture and the tendency of adolescents/youths towards HS. According to our participants, the SUoHS was partly seen in the damage that it may cause to the community health and development. They believed that HS is now getting to be considered as an acceptable norm in public places, as it is easily accessible. Such a high level of accessibility within the community may have decreased the SUoHS and has consequently increased the frequency of the behavior in society. In a qualitative study in Malaysia, availability and inexpensiveness were reported as the factors leading to a tendency towards HS [29].

## LIMITATIONS

We were able to include students from a range of socioeconomic backgrounds, however, the findings may not represent the views of students who did not participate in the study and may therefore be biased towards students who are more interested in participating in scientific researches. We triangulated our data in the FGD sessions with the data collected during individual interviews to confirm and cross-validate the findings from different interview methods. However, considering

the methodology, social desirability bias may be possible. To limit this threat, we selected an interviewer with experience in conducting qualitative interviews and focus groups.

## Conclusions

Adolescents in our study described the SUoHS from different dimensions. They perceived the social unacceptability of HS in the disreputability of hookah smokers and their behavior, disrespectfulness and incivility of the smokers and their families, and the consequences of behavior. The SUoHS originates from the social context of society and is rooted in the social values and norms within communities. These social values may affect the attitude and subjective norms of individuals toward the behavior.

To decrease hookah smoking levels among adolescents, school health nursing interventions should be tailored to bridge the gap between their recognition of SUoHS and subsequent behavior change through creating group dynamics highlighting the domains of social unacceptability of the behavior. The results of the present study can serve as a basis for future studies on the role of the SUoHS in adolescents' tendency towards the behavior. Future studies should consider our results to develop relevant indicators/instruments for measuring the SUoHS among adolescents, with the hope to provide sufficient evidence for HS prevention/cessation interventions.

## Acknowledgements

Funding sources: this work received a grant from Tabriz University of Medical Sciences (Grant no: 1396.981/23/1).

The authors thank the research participants, their families, and schoolteachers who made this study possible.

## Conflicts of interest statement

The authors declare no conflict of interest.

## Authors' contributions

Study design: HN, KK, AM, and HA. Study conduct: HN, KK, and AM. Data collection: KK and HN. Data analysis: HN, KK, and AM. Data interpretation: HN, KK, AM and HA. Drafting manuscript: HN and KK. Revising manuscript and content: HN, KK, and AM. Approving final version of manuscript: All authors. HN takes responsibility for the integrity of the data analysis.

## References

- [1] WHO. Global status report on noncommunicable disease 2010. Geneva Switzerland: World Health Organization 2011.

- [2] Moradzadeh R, Mansournia MA, Baghfalaki T, Nadrian H, Gustafson P, McCandless LC. The impact of maternal smoking during pregnancy on childhood asthma: adjusted for exposure misclassification; results from the National Health and Nutrition Examination Survey, 2011-2012. *Ann Epidemiol* 2018;28:697-703. <https://doi.org/10.1016/j.annepidem.2018.07.011>.
- [3] Barbouni, A., Hadjichristodoulou, C, Merakou, K, Antoniadou, E, Kourea, K, Miloni, E, Warren CW, Rahiotis G, Kremastinou J. Tobacco use, exposure to secondhand smoke, and cessation counseling among health professions students: greek data from the Global Health Professions Student Survey (GHPSS). *Int J Environ Res Public Health* 2012;9:331-42. <https://doi.org/10.3390/ijerph9093317>
- [4] Noonan D, Kulbok PA. New tobacco trends: Waterpipe (hookah) smoking and implications for healthcare providers. *J Am Acad Nurse Pract* 2009;21:258-60. <https://doi.org/10.1111/j.1745-7599.2009.00402.x>
- [5] Almerie MQ, Matar HE, Salam M, Morad A, Abdulaal M, Koudsi A, Maziak W. Cigarettes & waterpipe smoking among medical students in Syria: a cross-sectional study. *Int J Tuberc Lung Dis* 2008;12:1085-91.
- [6] Azab M, Khabour OF, Alkaraki AK, Eissenberg T, Alzoubi KH, Primack BA. Water pipe tobacco smoking among university students in Jordan. *Nicotine Tob Res* 2010;12:606-12. <https://doi.org/10.1093/ntr/ntq055>
- [7] Baska T, Pudule I, Tilgale N, Warren CW, Lee J, Lea V, Jones NR. Smoking tobacco in waterpipes among adolescents in Europe: the case of Latvia and Slovakia. *Tobacco Control* 2008;17:432. <https://doi.org/10.1136/tc.2008.027128>
- [8] Primack B, Fertman CI, Rice KR, Adachi-Mejia AM, Fine MJ. Waterpipe and cigarette smoking among college athletes in the United States. *J Adolesc Health* 2010;46:45-51. <https://doi.org/10.1016/j.jadohealth.>
- [9] Jahanpour F, Sharif F, Salsali M, Kaveh MH, Williams LM. Clinical decision-making in senior nursing students in Iran. *International J Nurse Pract* 2010;16:595-602. <https://doi.org/10.1111/j.1440-172X.2010.01886.x>
- [10] Jawad M, Abass J, Hariri A, Rajasooriar KG, Salmasi H, Millett C, Hamilton FL. Waterpipe smoking: prevalence and attitudes among medical students in London. *Int J Tuberc Lung Dis* 2013;17:137-40. <https://doi.org/10.5588/ijtld.12.0175>
- [11] Khattab A, Javaid A, Iraqi G, Alzaabi A, Khedr AB, Koniski ML, Shahrour N, Taright S, Idrees M, Polatli M, Rashid N. Smoking habits in the Middle East and North Africa: results of the BREATHE study. *Respir Med* 2012;106:516-24. [https://doi.org/10.1016/S0954-6111\(12\)70011-2](https://doi.org/10.1016/S0954-6111(12)70011-2)
- [12] Hessami Z, Masjedi M, Sharifi H, Emami H, Kazempour M, Jamaati H. Characteristics of Iranian hookah smokers aged 15 and above: a primary report. *Health Scope* 2016;5:e36011. <https://doi.org/10.17795/jhealthscope-36011>
- [13] Jahanpour F, Vahedparast H, Ravanipour M, Azodi P. The trend of hookah use among adolescents and youth: a qualitative study. *J Qual Res Health Sci* 2015;(4):340-8.
- [14] Sahin SAC. Perceptions of Turkish university students about the effects of water pipe smoking on health. *Asian Pac J Cancer Prev* 2015;16:4615-21. <https://doi.org/10.7314/APJCP.2015.16.11.4615>
- [15] Dehkhoda AA. Dehkhoda Online Dictionary. 2018. Available from: <https://dictionary.abadis.ir/dehkhoda>
- [16] Mohammadkhani SAR JH. Relationship between cigarette and hookah smoking with individual, family and social factors in adolescents. *Journal of Sabzevar University of Medical Sciences* 2016;23:262-80.
- [17] Primack BA, 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;36:81-6. <https://doi.org/10.1007/s12160-008-9047-6>
- [18] Sabahy A, Divsalar K, Nakhaee N. Attitude of university stu-

- dents towards waterpipe smoking: a study in Iran. *Addict Health* 2011;3: 9-14.
- [19] Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3:77-101. <https://doi.org/10.1191/1478088706qp063oa>
- [20] Ajzen I. The theory of planned behavior. *Organizational Behavior and Human Decision Processes* 1991;50:179-211.
- [21] Steinmetz HKM, Ajzen I, Schmidt P, Kabst R. How effective are behavior change interventions based on the theory of planned behavior? *Zeitschrift für Psychologie* 2016. <https://doi.org/10.1027/2151-2604/a000255>
- [22] Shirzadi S, Jafarabadi MA, Allahverdipour H, Nadrian H. Determinants of puberty health among female adolescents residing in boarding welfare centers in Tehran: an application of health belief model. *Med J Islam Repub Iran* 2016;30:432.
- [23] Shirzadi S, Nadrian H, Jafarabadi MA, Allahverdipour H, Hasankhani H. Determinants of mammography adoption among Iranian women: what are the differences in the cognitive factors by the stages of test adoption? *Health Care Women Int* 2017;38:956-70. <https://doi.org/10.1080/07399332.2017.1338705>
- [24] Khalil J, Afifi R, Fouad FM, Hammal F, Jarallah Y, Mohamed M, Nakkash R. Women and waterpipe tobacco smoking in the Eastern Mediterranean region: allure or offensiveness. *Women Health* 2013;53:100-16. <https://doi.org/10.1080/03630242.2012.753978>
- [25] Maziak W, Asfar T, Mock J. Why most women in Syria do not smoke: Can the passive barrier of traditions be replaced with an information-based one? *Public Health* 2003;117:237-24. [https://doi.org/10.1016/S0033-3506\(03\)00070-2](https://doi.org/10.1016/S0033-3506(03)00070-2)
- [26] Gholami OA, Zavareh MSA, Jalilian M, Mirzaei A. Student's positive and negative attitudes towards the hookah tobacco smoking. *Res J Med Sci* 2016;10(Suppl1):813-6.
- [27] Roskin J, Aveyard P. Canadian and English students' beliefs about waterpipe smoking: a qualitative study. *BMC Public Health* 2009;9:10. <https://doi.org/10.1186/1471-2458-9-10>
- [28] Ak1E, Jawad M, Lam WY, Obeid R, Irani J. Motives, beliefs and attitudes towards waterpipe tobacco smoking: a systematic review. *Harm Reduct J* 2013;10:12. <https://doi.org/10.1186/1477-7517-10-12>
- [29] Khor P, Harun NB, Ishak FB, Anuar NA, Karim NA, Azman A, Mahmood TS. Contributory factors to the smoking of shisha among teenagers in the Perak city of Ipoh: a preliminary qualitative survey. *Int J Public Health Res* 2012;2:80-4.

Received on October 12, 2020. Accepted on February 16, 2021.

**Correspondence:** Haidar Nadrian, Social Determinants of Health Research Center, Tabriz University of Medical Sciences, Tabriz, Iran - E-mail: haidarnadrian@gmail.com

**How to cite this article:** Keshavarzian K, Mohammadpourasl A, Allahverdipour H, Nadrian H. "It's beyond the pale to smoke hookah": perceptions of Iranian adolescents on social unacceptability of hookah smoking. *J Prev Med Hyg* 2021;62:E97-E103. <https://doi.org/10.15167/2421-4248/jpmh2021.62.1.1809>

© Copyright by Pacini Editore Srl, Pisa, Italy

*This is an open access article distributed in accordance with the CC-BY-NC-ND (Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International) license. The article can be used by giving appropriate credit and mentioning the license, but only for non-commercial purposes and only in the original version. For further information: <https://creativecommons.org/licenses/by-nc-nd/4.0/deed.en>*