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## Perception and Assumptions of Young Waterpipe Smokers in Mumbai, India

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### Abstract

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#### Background:

Hookah smoking has been on raise all over the world, including India, especially among youngsters. There is growing evidence suggesting the high school children experimenting this form of tobacco.



#### Objective:

The objective of this study was to investigate the characteristics, behavior, and perceptions related to hookah smoking among the hookah smokers in Mumbai.

#### Materials and Methods:

A cross-sectional survey was conducted among 200 randomly selected young adults between the age group of 15–35 years in Mumbai who visited different dental clinics. The questionnaire was distributed as Google Forms online in the month of November and

December 2019 and those who submitted completed responses were included in the study.

### Results:

Only 114 participants returned with the completed forms in the time period of 2 months. The results showed that the majority of participants were between 20 and 24 age, comprising 58% who were having the habit of hookah smoking. Among which 24% females, 76% males had history of hookah habit. Eight percent of males started smoking hookah from very young age. Males (29.89%) shared one hookah pot with four members. Forty percent of the participants stated that they are interested to smoke again because of hookah flavor.

### Conclusion:

Easy availability of newer forms of smoking at online markets could play a role in promoting the use of hookah among youngsters. Most products are being sold without any warnings, and there is no means to control the selling of the products to minors. Educational intervention is urgently needed to create awareness among youth about the harmful effects of hookah smoking.

**Keywords:** Hookah, hookah lounges, tobacco, waterpipe smoking, youngsters

## INTRODUCTION

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A alternative form of tobacco usage-“the hookah or water pipe” appears to be on the rise among youth in India where it is available in diverse flavors (apple, mint, cherry, chocolate, coconut, licorice, cappuccino, watermelon, etc.). Hookah smoking is classically practiced in groups and in cultural gatherings.[1] From ancient days, it is commonly seen in the Middle East countries, China, India, Pakistan, Bangladesh, Turkey, Europe, and North America. In few countries, the use of hookahs was not only a custom, but a matter of pride and prestige. It is estimated that >100 million people worldwide smoke tobacco through hookah pipes daily. Further, studies document that hookah users are 11%–32% in Syria, 33% in a British University, and 40.5% in the US. Several individuals who smoke hookah tobacco are not exposed to combustion products of tobacco. For example, among 30% and 50% of college-aged hookah tobacco smokers do not also practice cigarette smoking. Besides, since hookah tobacco smoke comprises nicotine, which is an addictive, hookah smoking may lead to more usage of cigarettes or supplementary tobacco products.[2,3]

Hookah is also known as narghile, Argileh, shisha, Hubble-bubble, and Goza. The waterpipe device heats the tobacco using charcoal, filters the resulting smoke in a bowl of water, and directs it to a rubber pipe for inhalation. Hookah smoking is harmful as smokers inhale a capacity of smoke equivalent to 100 cigarettes throughout a typical 45–60-min hookah

session.[4] Furthermore, high concentrations of carbon monoxide, tar, and heavy metals are present in hookah smoke. Like cigarettes, hookah is also related to various preventable diseases including coronary heart disease, infertility, adverse pulmonary effects, and cancers of the lung, stomach, and esophagus.[5] Nevertheless, many hookah users believe it to be innocuous. Secondhand smoke from hookahs poses a serious risk for nonsmokers, particularly as it contains smoke not only from the tobacco but also from the heat source (e.g., charcoal) used in the hookah.[4,5,6]

In recent years, there has been a resurgence of hookah use around the world, most notably among young adults and young professionals. In India, the occurrence of hookah smoking is 5%–14%, 2.6% in rural and 0.4% in urban groups.[5,6,7] Hookah may be used singly or with multiple hoses to enable simultaneous smoking by several users or the same mouthpiece passed from person to person. Sharing a hookah may increase the risk of transmission of viruses such as herpes or hepatitis, and other illnesses such as tuberculosis.[8,9,10] It is frequently noted that the youngsters are the vulnerable group prone to hookah use due to their tendency to experiment.[10,11,12]

The Indian government forbids the use of tobacco in public places and places of employment. In the recent past, we can notice an increase in the number of “hookah lounges,” which are profitable recreation centers where individuals may gather to socialize and smoke hookah, usually in the proximity to colleges, universities, and multinational companies, etc.[12,13,14,15]

Although there is ample literature regarding the prevalence of habit of hookah in India, insufficient data are available among young hookah users in Mumbai. The current study investigates the perception, awareness, behavior, and practice of hookah among youth and young adults in Mumbai.

## MATERIALS AND METHODS

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A cross-sectional survey was conducted among 200 randomly selected youth and young adults between the age group of 15–35 years in Mumbai who visited different dental clinics. The questionnaire was distributed as Google Forms online in the month of November and December 2019 and those who submitted completed responses were included in the study. Those who were not willing to give consent to participate were excluded from this study. The questionnaire was completely anonymous survey, and no personal details were recorded. The participants received a full explanation on how to fill and send the questionnaire and answering all the questions was compulsory. All the participants belonged to similar high socioeconomic backgrounds. A revalidated questionnaire was designed to assess the use of hookah among the participants. Specific questions were asked to evaluate their interest of hookah use, including initiation factors, patterns of current hookah use, and to determine its relevance to perceptions and behaviors about hookah. The data were entered in the Microsoft

Excel spreadsheet and analyzed using Statistical Package for the Social Sciences version 15.0 software (SPSS Inc., Chicago, Illinois, USA). Descriptive statistics were obtained, and frequency distribution was calculated for awareness and practices regarding the habit of hookah smoking. The Chi-square was used as a test of significance for statistical evaluation.  $P < 0.05$  was considered statistically significant.

## RESULTS

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The frequency distribution analysis showed that among 200 participants who were sent with the Google Forms, only 114 participants returned with the completed forms in the time period of 2 months [Table 1]. The results showed that the majority of participants were from 20 to 24 age group, comprising 58% who were having the habit of hookah smoking. Female participants who had the habit were 24%, whereas males were 76% who had previous history of hookah habit. It showed that 8% of males adopted to the habit of smoking hookah from very young age, i.e., below 14 years [Figure 1 and Table 2]. Most of the 15–19 age group people started their hookah smoking at very young age (42.9%), 14.3% started their hookah smoking at the age of 10–14 years, and 42.9% of 15–19 age group never started with hookah smoking. Most of 20–24 years age group people (60.6%) started their hookah smoking habit at the age of 15–19 years. Around 53.3% of 25–29 and 33.3% of 30–34 year age group people started their hookah smoking at the age of 20–24 years. Moreover, 35 and above age group (50%) population started their first hookah at the age of 30 and above and it displayed statistically significant association ( $P = 0.001$ ).

### [Figure 1](#)

Distribution of the answers for the question “At what age did u start smoking hookah”

**Table 1**

Distribution of age-groups

Age groups	Frequency (%)
15–19	21 (18.4)
20–24	66 (57.9)
25–29	15 (13.2)
30–34	6 (5.3)
35 and above	6 (5.3)

**Table 2**

Distribution of the answers for the question “If yes, at what age did u start?”

Questionnaire	Answer	Female, <i>n</i> (%)	Male, <i>n</i> (%)	Total, <i>n</i> (%)	<i>P</i>
If yes, at what age did u start?	Never started	14 (51.90)	12 (13.80)	26 (22.80)	0.002*
	10–14	0 (0.00)	7 (8.00)	7 (6.10)	
	15–19	7 (25.90)	46 (52.90)	53 (46.50)	
	20–24	4 (14.80)	16 (18.40)	20 (17.50)	
	24–29	1 (3.70)	2 (2.30)	3 (2.60)	
	30 and above	1 (3.70)	4 (4.60)	5 (4.40)	
	Total	27 (100.00)	87 (100.00)	114 (100.00)	

\* $P \geq 0.05$  Statistically significant

When asked about the frequency of hookah smoking, the participants had varying results 9% of males accepted to have the habit of smoking once a week and 7.5% females had once a week. Eight percent of men had more than once in a week, whereas 3% of females had once in 2 weeks and 8.5% of males had once in 2 weeks. Thirty-eight percent of males had once in a month, whereas 19% had only once in a month [Figure 2].

### [Figure 2](#)

Distribution of answers for the question “How often do you have hookah”?

Most of the males (29.89%) share one hookah pot with four other members in the lounge [ [Figure 3](#)], whereas the majority of the females (51.85%) were not using the same hookah pot to share with others (N/A) which is statistically significant ( $P = 0.015$ ). Many males (39.1%) feel that hookah smoking in the locality is very much affected by the hookah parlor ban, whereas many of the females (51.85%) feel the relation of hookah smoking in locality and the hookah parlor ban is not applicable (N/A) to them, which is statistically significant ( $P = 0.045$ ) [ [Figure 4](#)]. When asked the reason what makes the participants to have hookah again- 40% of our participants are inclined to have again because of flavor. Moreover, 33% of the hookah smokers considered hookah safer than cigarette, whereas 4% of the hookah lovers prefer smoking hookah as they enjoy making different shapes with the hookah smoke.

### [Figure 3](#)

Distribution of the answers for the question “With how many people you share one hookah pot at once?”

### [Figure 4](#)

Distribution of the answers for the question “How much did the hookah parlor ban affect hookah smoking in the locality?”

## DISCUSSION

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The popularity of hookahs lounges or parlors and establishments that rent hookah pipes have increased greatly in the past 10 years in India. The target customers to these lounges are university students and young professionals in the age 18–30 years. A growing number of

youngsters who do not smoke cigarettes are beginning to use tobacco by smoking the hookah.

The most common reasons for the individual's inclination to smoke hookah was their positive viewpoints toward smoking hookah, wrong beliefs about its low risks, presumed lack of addiction, social acceptance, ease of access, and traditional cultural habits.[16] Dani *et al.* in their study documented that nearly 58.3% of the participants perceived hookah use as safer than cigarette smoking,[4] similarly, in our study, 33% of the hookah smokers considered hookah safer than cigarette. Similar results were found among the participants in Jordan, where 1/3<sup>rd</sup> of them considered waterpipe smoking less harmful to oral health than cigarette smoking, as studied by Obeidat *et al.*[17] In the same study, the authors stated that 50% of the female dental university students admitted to smoke at home in the presence of parents.

Combined human absorption data from 117 adults in four studies (from Lebanon, Jordan, Kuwait, and India) analyzed together showed that daily use of the waterpipe produced a nicotine absorption rate equivalent to smoking ten cigarettes/day.[16] Even among subjects who did not smoke the water pipe daily, a single session of waterpipe use produced a urinary cotinine level equivalent to smoking two cigarettes in one day.[9] When asked the reason what makes the participants in our study to have hookah again-40% replied to get interested in smoking hookah because of flavor. While 4% of the hookah lovers prefer smoking hookah as they enjoy making different shapes with the hookah smoke. According to the results of Jradi *et al.*, majority of females in Lebanon were inclined to smoke water pipes when compared to cigarettes.[18] While in a study conducted among students in Syria, it is noted that the high rate of males was considerably habituated to smoke cigarettes as well as water pipes.[19] On the contrary, in our study, almost 70% females of the total participants were not hookah smokers.

In a study conducted at India by Anand *et al.* it was observed that the mean age at initiation of smoking the hookah was 15.7 years.[1] In our study, 8% of males started this habit of hookah smoking below the age of 14 years, and the average age of initiation of habit of hookah smoking by 61% of the participants was between 15 and 19 years age group. Anand *et al.* noticed in their study that 86% of the participants smoked at hookah lounges and (83%) of them shared the pipe most of the time with other 6–7 smokers, and the participants revealed that one single session of hookah smoking lasted for about 30 min.[1] Similar results were noticed in our study where the males were dependent on hookah lounges for smoking hookah and they shared with four smokers, the same pipe and each session lasted about 30–40 min. However, the female participants in our study stated that they were not much affected by hookah parlor bans.

Kakodkar and Bansal in their study described that the mean smoking time of hookah sessions was for 1 h and 19 min which is conflicting to our results where the mean time was only 30–40 min. In the same study conducted in Pune, India, the authors mentioned about

hookah smoking among the family members was 28%.[\[2,20\]](#) In our study, we could not collect the data regarding the family members using pipe smoking. The frequency of smoking hookah once in a week was 9% among males in our study and 7.5% among females, whereas 8% of men admitted to smoke more than once in a week. Contrasting results were noticed in previous studies where 24% of the participants practiced hookah smoking on daily basis whereas 34% on weekly basis. Previous studies done among U. S hookah users, showed 19% of daily smokers and 41% of weekly smokers.[\[21\]](#)

In several countries, hookah use is endorsed by media, hookah retailers, and hookah bars/cafes, as a pleasurable and safe social activity for college students and conveys hookah smoking as a inexpensive and safer alternative to use of addictive drugs or barhopping.[\[15\]](#) Majority of hookah smokers underestimate the health risks and addictive properties of hookah use and they have low knowledge about dangers associated with sharing same water pipe with other smokers.[\[2,20\]](#)

In India, as per the Cigarette and Tobacco Product Act, any form of tobacco smoking in public places, including restaurants, hotels recreational centers, etc., is banned. Currently, there is a ban on hookah parlors in Mumbai. However, sale of the hookah is on the rise in several parts of the country through different routes. Further, tobacco vendors sell easy to assemble hookah water pipes to be assembled at home for convenient use, encouraging hookah smoking.[\[22\]](#) Thus, the young hookah users are amenable to use these easy to assemble hookah water pipes at home. In our study, we noticed that 8% of the male patients were below 15 years of age. As there is early onset among school children in our study, it will be sensible to expect an increase in hookah use in college-age adults in the future. Most of our participants initiated to use the hookah influenced mainly by friends followed by siblings and relatives.

One thought-provoking outcome of this study which is remarkable is that, after the interview, many of the participants mentioned that this questionnaire was an eye-opener and that they were earlier ignorant of the harmful effects of hookah smoking on health and this had put them to deep thinking about quitting the habit. Cigarettes have traditionally been the focus of media campaigns in India. The lack of such promotions on the dangerous effects of hookah smoking may also be contributing to the increase in hookah use. The lawfulness of hookah lounges in India should be examined. Prevention activities such as restricting the sale commercially and banning hookah lounges are necessary to prevent this rising public health concern.

## CONCLUSION

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Hookah use is increasing among adolescents and young adults who are unaware of the tobacco content of hookah and its harmful effects. This study shows that the hookah is attracting adolescents at a very early age and that they were first introduced to its use because



of the presence of hookah lounges in their locality or at family and cultural gatherings. Limitations of this study are that we exclusively examined the perception of tobacco use in hookah and did not query about their tobacco use in other forms with or without hookah use. Although the questionnaire was straightforward and closed-end type in the English language, the nature of the study would have limited the answers given by participants resulting in certain amount of inaccuracy. Furthermore, the sample was convenience sample, which thereby limits the generalization of results.

### What is already known on this topic

1. It is already proven that smoking tobacco causes various health hazards
2. Youngsters are more inclined to experiment in various forms of tobacco
3. Hookah forms are readily available in different parts of the world and are considered as safe as per different cultural beliefs.

### What this study adds

- This study adds the facts that youth are easily attracted to this means of smoking
- Since it is accepted in many cultures as a socializing issue, it is in fact causing more danger of smoking in public
- Strict government/legal guidelines should be issued to ban usage in various parts of the world.

### Financial support and sponsorship

Self.

### Conflicts of interest

There are no conflicts of interest.

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