

# Knowledge, attitude, and practices of medical science students about tobacco use

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## Abstract

**Context:** Tobacco products' consumption among students seems to have increased, which threatens their health as a cultural and social harm.

**Aims:** The present study aimed to determine the knowledge, attitude, and practice of students in Qom University of Medical Sciences about tobacco.

**Setting and Design:** A cross-sectional study was performed in Qom University of Medical Sciences, Iran, from December 2017 to January 2018.

**Material and Methods:** Subjects accommodates 499 individuals who were selected through the simple random sampling. Data were collected using demographic and Global Youth Tobacco Survey (knowledge, attitude, and practice on tobacco) questionnaire.

**Statistical Analysis Used:** Descriptive statistics, mean, and standard deviation were used to describe the status of the individuals. Pearson correlation coefficient and independent *t*-test, Chi-square, and ANOVA were used to analyze the relationships in SPSS-20 software.

**Results:** The mean age of the samples was  $21.32 \pm 3.89$  years. Men were 272 (54.4%), 438 (87.6) were single, and the rest were married. Average student knowledge was 6.65 (2.22), and their positive attitude was 40.16 (11.02). About practice, 76.9%, 93.5%, and 76% of people never used smoke, pipe, and hookah, respectively. *T*-test showed that there is a significant relationship between positive attitude and gender ( $P < 0.001$ ); however, there is no significant relationship between knowledge scores and gender ( $P = 0.068$ ). Chi-square test indicates that the difference between the two groups of girls and boys is not significant compared to the age of start of smoking ( $P = 0.86$ ).

**Conclusion:** Female students' knowledge was slightly higher than male; however, the positive attitude of male students was more than the female students about tobacco. It is necessary that the authorities and counseling centers of the university found underlying causes and work hard to solve the students' problems.

**Keywords:** Attitude, Knowledge, Practice, Tobacco

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## INTRODUCTION

Today, smoking is a global health problem that threatens the health of the social strata, especially the younger generation.<sup>[1]</sup> Today, human society is more contaminated with tobacco use than ever before.<sup>[2]</sup> Tobacco is killing people in a very high amount so that every 10 s, a person dies from tobacco-related illnesses and diseases.<sup>[3]</sup> According to the World Health Organization, one billion people worldwide consume tobacco and 60 trillion people smoke cigarettes; on this basis, smoking-related deaths will receive from 4 million to 10 million deaths annually in the 2025s, of which 7 million deaths will occur in developing countries.<sup>[4]</sup> On the other hand, hookah consumption is prevalent in many countries of the world, especially in the Middle East and Africa.<sup>[5]</sup> Salgado *et al.* (2017) believe that aromatic and fruity tobacco plays an important role in the popularity and increase in hookah consumption among young people.<sup>[6]</sup> Studies on hookah harms have shown their association with increased risk of oral cancers, stomach, esophagus, lung, decreased respiratory function, and reduced fertility.<sup>[7]</sup>

The strategic position of Iran increases the domestic consumption of drugs.<sup>[8]</sup> It seems that tobacco use among different groups of society, including students, has been increased, which threatens them as a cultural and social harm to their health.<sup>[9]</sup> On the other hand, educated people are considered as good models for society, especially for young people, at the time of their study and employment, and smoking by them can be effective in the wrong teaching to others in the community.<sup>[10]</sup>

It can be said that the knowledge, attitude, and obsessive-compulsive thoughts about smoking can be involved in the tendency toward consumption. Research conducted by the “National College Health Risk Behavior Survey” has shown that nearly 74% of students in America smoke or are thinking of smoking.<sup>[11]</sup> A study conducted in China in 2014 on knowledge, attitude, and practice of students about tobacco use showed that all students were aware of the dangers of cigarette but did not have a good attitude.<sup>[12]</sup> While the results of a study in Bangladesh in 2017 showed that there was a strong correlation between smoking and attitudes toward smoke.<sup>[13]</sup> In a study of Shokouhi *et al.*, the mean knowledge of tobacco use in American women and men was higher than the mean knowledge in both Iranian and Chinese men and women, and mean attitudes in Iran were higher than Americans and Chinese.<sup>[14]</sup> However, there are no new, accurate, and similar results about the prevalence of tobacco use among Iranian students. In a study conducted in 2012,

the prevalence of smoking among students was 28.4%.<sup>[8]</sup> However, Fried and Schiller Bahrami’s study (2012) in Iran showed that 23% of individuals were smokers or have experienced cigarette smoking. While knowledge, attitude, and tobacco consumption were different in both genders.<sup>[15]</sup> Fayaz-Bakhsh *et al.* concluded in a study that the mean knowledge of female students about smoking was slightly higher than male students, and they were more likely to use tobacco than female students.<sup>[16]</sup>

In a search to find similar studies, it was found that despite some studies in Iran and other countries about the topic of discussion, the studies that focused on medical students are relatively rare and/or old. Therefore, according to the importance of the subject and its growing trend in medical student, their future role as health-care workers which affects on their community health, their lifestyle, and the quality of services provided by them,<sup>[4]</sup> the necessity of doing this research on them is justifiable. We decided that with this research and with the aim of studying the level of knowledge, attitude, and practice in students of Qom University of Medical Sciences, about tobacco and identification of at-risk groups, we can take steps to identify the factors related to tobacco use.

## MATERIALS AND METHODS

A cross-sectional study was performed in Qom University of Medical Sciences, Iran, from December 2017 to January 2018 which accommodates 499 participants who were selected through the simple random sampling. To sample, the researcher was present in any classroom and selected students by balloting from student name list; the students who were willing to cooperate were selected as samples. Inclusion criteria included the following: students studying at Qom University of Medical Sciences at all levels (associate, bachelor, master, and doctor of medicine) and interest and satisfaction with completing the questionnaire. Exclusion criteria were imperfect completion of questionnaire. In this case, the sample was excluded from the study, and another was replaced. The data collection tool was the Global Youth Tobacco Survey (GYTS) questionnaire. The questionnaire consisted of four parts. The first part included demographic characteristics and included nine questions (age, sex, marriage, field of study, educational level, monthly income, housing situation, family status, and daily life status). The second part related to student knowledge of tobacco use and included 11 questions. For each correct answer, the score was 1, and for each wrong answer, the score was 0. The minimum score for each person was 0, and the maximum score was 11. The third part was the assessment of students’ attitudes toward

tobacco use, which included 18 questions. The questions of it were five Likert options, which were “totally disagree,” “disagree,” “No idea,” “agree,” and “totally agree” with 1, 2, 3, 4, and 5 points, respectively. Items 24, 26, 30, 31, 32, 33, 34, and 35 are scored in reverse order. The minimum score for each person was 18 and a maximum of 90. In other words, each person received a higher score, indicating that she/he was more likely to be smoking. The fourth part related to student practice in tobacco use and included 21 questions, the options were five and in incremental mode. The minimum score for each person was 21 and a maximum of 105. The main revision of this questionnaire was conducted by Torabi *et al.* in 2002.<sup>[17]</sup> The validity of the Persian version of this questionnaire was evaluated by Fayaz-Bakhsh *et al.*, and the Cronbach's alpha in the knowledge domain was 0.88, the domain of attitude was 0.83, and the practice was 0.71.<sup>[16]</sup> To implement, after approval of the plan in the Qom University of Medical Sciences research deputy, this research was approved by the Committee of Ethics of Qom University of Medical Sciences (IR.MUQ.REC.1396.118); the necessary permissions were given and the objectives of the plan were explained to the research samples and written informed consent was obtained; the students were assured that their information would remain confidential, and after the study, the results would be available if they wished. After sample selection, the GYTS questionnaire was completed by students. Data were analyzed using SPSS-20 (SPSS Inc., IBM). To describe, the subjects' status was used descriptive statistics; (mean and standard deviation), also the Pearson correlation coefficient, independent *t*-test, Chi-square and ANOVA were used to analyze the relationships.

## RESULTS

The mean age of the samples was  $21.32 \pm 3.89$ . Of the 499 students, 272 (54.4%) were males and 227 (45.4%) were females. A total of 438 (87.6%) were single and 62 (12.4%) were married. Twenty-seven (4.5%) were associate, 307 (61.4%) bachelor, and 166 (33.2%) were doctor of medicine. Two hundred and four (40.8%) mentioned that they did not have a suitable economic situation, 138 (27.6%) had moderate economic status, and 158 (31.6%) had high economic status based on monthly income. Four hundred and sixty-six (93.2%) had parents and 34 (6/8) had one of the parents. Twenty-two (42.4) lived in dorm, 234 (46.8) father's home, 54 (10.8) personal home, 48 (9.6) people mentioned that had high stress, 165 (33%) were somewhat stressed, 200 (40%) had low stress, and 87 (17.4%) were stress less. The mean of Student's knowledge of tobacco was  $6.65 \pm 2.22$ , and their attitude was  $40.16 \pm 11.02$ .

*T*-test showed that among the demographic factors, only marital status has a meaningful relationship with knowledge ( $P < 0.001$ ); however, the relationship between gender and marriage is significant with attitude ( $P < 0.001$ ,  $P = 0.002$ ). Furthermore, ANOVA test showed that among the demographic factors, only the grade and course have a significant relationship with attitude ( $P < 0.001$ ,  $P = 0.002$ ) and variables such as housing situation, family status and income and stress status with knowledge and attitude had no significant relationship [Table 1].

A larger percentage of male students compared to female students until the study time have consumed tobacco. There was a significant difference between male and female students regarding the use of cigars, pipe, and hookah ( $P < 0.01$ ). In this study, smoking after hookahs was the most important factor in the tendency of Iranian students to smoke. About 76.9% of the participants never smoked (63.5% of men and 93% of women). Sixty-six percent mentioned that one or two had smoking experiences (15.1% of men and 5.3% of women). Meanwhile, 3.4% of the people still keep on to smoke (5.9% of men and 0.4% of women). Based on the results of this study, 91.1% of the participants did not have any experience of cigar smoking and 93.3% of the participants never used the pipe. It was shown that 76% of people never used hookah, 9.9% of people consumed 1–5 times (11.9% of men and 5.3% of women), and 6.7% of people used more than 40 times (11.9% of men and 0.4% of women) [Table 2].

About the age of the start of smoking among that girls and boys who had a smoking experience, ages 18–19 years were more likely than other age groups. Chi-square test indicates that the difference between the two groups of girls and boys is not significant compared to the age of start of smoking ( $P = 0.86$ ).

Chi-square test shows that there is no significant correlation between smoking quitting and gender of students ( $P = 0.17$ ) although men are more successful than women in it.

Pearson correlation coefficient was used to determine the relationship between knowledge and smoking (practice). Pearson correlation coefficient was equal to  $r = -0.12$  and  $P < 0.001$ , i.e., the higher knowledge toward tobacco disadvantages caused less use of it. The value of this coefficient was significant for assessing the attitude of individuals on their performance in relation to smoking for all correlations (smoking, cigarettes, chewing tobacco, pipe, and hookah) ( $P < 0.001$ ).

**Table 1: The relationship between the mean of knowledge and attitude with demographic factors**

Variable	Knowledge score (mean±SD)	P	Positive attitude score (mean±SD)	P		
Gender						
Male	6.5±2.29	0.06	42.41±11.19	<0.001		
Female	6.84±1.86		38.6±10.44			
Marriage						
Single	6.56±2.13	0.01	41.22±11.13	<0.001		
Married	7.29±1.91		36.58±9.28			
Grade						
Associate	6.22±2.65	0.3	36.25±11.14	<0.001		
Bachelor	6.75±2.12		39.85±10.93			
Doctor of medicine	6.53±2		42.83±10.83			
Course						
Medicine	6.39±2.02	0.2	42.46±11.08	<0.001		
Nursing-midwifery	6.5±2.46		44.05±10.25			
Dental	6.89±1.92		43.78±10.18			
Operating room	6.55±2.18		42.2±12.5			
Anesthetics	6.3±1.6		35.95±9.12			
Laboratory	6.92±2.21		36±10.99			
Medical emergency	6.26±2.36		37.46±11.62			
Health	7.04±2.09		39.37±10.39			
Monthly income (million)						
<1	6.66±2.2		0.5		41.21±11.75	0.82
1-1.5	6.4±1.79	40.25±9.18				
1.5-2	6.47±2.26	40.06±9.71				
>2	6.81±2.04	40.37±11.36				
Family status						
Parents are alive	6.62±2.07	0.36	40.5±10.62	0.26		
Death or divorce of one of the parents	6.97±2.59		42.7±15.59			
Housing condition						
Dormitory	6.8±2.21	0.27	41.61±11.01	0.21		
Personal home	6.49±2.03		40.1±11.18			
Father's home	6.74±2.06		39.22±10.19			
Stress condition						
High stress	6.7±2.35	0.17	44.2±12.62	0.09		
Moderate stress	6.93±1.83		39.74±10			
Low stress	6.51±2.09		40.42±10.74			
No stress	6.41±2.48		40.94±12.3			

SD: Standard deviation

**Table 2: Tobacco use pattern among students by gender**

Variable	Female (%)	Male (%)	P	95% CI
Smoking experience	16 (7)	99 (36.5)	<0.001	0.47-0.78
Smokers in the last year	10 (62.4)	82 (84.5)	0.26	0.08-1.1
Smokers in the last month	5 (31.2)	67 (69.8)	0.6	0.15-1.09
The experience of chewing tobacco	2 (0.8)	12 (4.4)	<0.001	0.01-0.15
Experience the cigar drag	0 (0)	44 (16.3)	<0.001	0.18-0.39
Experience the use of the pipe	1 (0.4)	31 (11.5)	<0.001	0.1-0.32
Experience the use of hookah	17 (7.5)	32 (11.87)	<0.001	0.61-0.99
Hookah consumers in the last year	14 (82.4)	93 (91.2)	<0.001	0.31-1.6
Hookah consumers in the last month	9 (52.9)	65 (63.7)	0.18	-0.13-1.04

CI: Confidence interval

## DISCUSSION

According to the results of this study, the knowledge of female students about tobacco was higher than men, and it was observed that as knowledge a person about tobacco

is more, in practice, his/her use of tobacco is less that was consistent with the results of the study of Bahrami and Bahrami<sup>[15]</sup> while was not consistent with the study of Rezakhani Moghadam *et al.* (2013).<sup>[4]</sup> In general, gender (to be male) can be considered a risk factor for drug abuse, smoking, and hookah, while Jacob *et al.* see smoking as a prelude to providing a platform for other substances.<sup>[18]</sup> Regarding the answers given by students to the questions, it was concluded that the attitude of female students was more opposed to tobacco from male students' attitudes, and this difference was significant statistically, which was consistent with the study results of Asif *et al.* and Armstrong *et al.*<sup>[19,20]</sup> The relationship between people's attitude and their practice was significant for all correlations (smoking, cigar, chewing tobacco, pipe, and hookah) and showed that the higher attitude toward tobacco disadvantages caused less use of it. Furthermore, Bandura's social learning theory believes that one's attitude to drugs is the strongest predictor of drug use in adolescents, and adolescents, who think that the benefits of substance use are greater than their negative consequences, are at risk for substance

abuse.<sup>[1]</sup> In this study, marital status was associated with a more negative attitude of students toward tobacco, and the likelihood of smoking in married individuals was lower than that in single people. The study of Taraghijah *et al.* and Mardani *et al.* showed that smoking is less likely in married people.<sup>[9,21]</sup> Accordingly, it can be concluded that marriage is a preventative and protective factor in tobacco use. In psychopathology literature, marriage is also considered as a preventative factor.<sup>[22]</sup> These issues should be more carefully addressed in the institutions and organizations that are planning for the marriage of young people. Gender also had a significant relationship with the likelihood of smoking and gets hooked of students, study results of Armstrong *et al.* confirmed this matter.<sup>[20]</sup> However, no significant relationship was found between the housing situation and economic situation and family with the probability of smoking and get hooked. In the study of Prabhu *et al.*, there was no significant relationship between student's housing situation and smoking status;<sup>[23]</sup> while in a study of Zhou *et al.* (2015) and VanDevanter *et al.*, it was revealed that lack of proper and healthy relationships in the family, low level of parents' literacy, and low income are factors of student tendency toward tobacco.<sup>[24,25]</sup> In this study, the average age of start of smoking among consumers was aged 18–19 years. In similar studies, the age that students starts smoking was 18–24 years while results of Mohammadkhani's study showed that the age of start of smoking and hookah was 12 years.<sup>[21,26]</sup> The reason for the prevalence of hookah consumption in this age group can be due to the desire to obtain social acceptance, the availability of different flavors, and the relatively low cost of hookah.<sup>[27]</sup> This issue should be taken seriously because the low age of a person to start taking hookah and the prolonged exposure of people with nicotine will increase the risk of developing diseases associated with it in the later decades. Accordingly, the increasing consumption of cigarettes and hookah among the various classes of people, especially students, should not be overlooked. On the other hand, it was found in this study that the consumption of hookahs and then cigarettes was higher than of other tobacco products. Some studies have suggested that the causes of the higher prevalence of hookah consumption compared to smoking may be people's misconceptions about the safety of hookahs and their greater social acceptance than cigarettes.<sup>[28]</sup> The notable point found in this study is the tendency in young girls to use drugs, especially tobacco. Although the number of female consumers in this study and similar studies is lower than men, since today's girls are mothers of tomorrow's society and the basis of the formation of families is the female and the mother of the family, even the girls' low tendency toward this material

must be considered more important than boys and the cause and processes of their inhibition of this risky behavior must be taken more seriously.

### Limitations

Due to the sensitivity of the study, the inaccuracy and integrity of individuals in responding and incomplete completion of questionnaires in research can be seen. Therefore, although it was an effort thoroughly to persuade individuals to respond honestly, this issue may be considered as one of the limitations of this research. The present study was conducted in the student population of Qom University of Medical Sciences, that naturally have a higher understanding about tobacco use harms in relation to other disciplines or other people in the community; it restricts this generalization to nonacademic young people and nonmedical students in other areas and hopes that in future studies, these individuals will also include a statistical community to measure their knowledge, attitude, and practice about tobacco use.

### CONCLUSION

The average students' knowledge and attitude toward tobacco was moderate and female students' knowledge was slightly higher than male students' knowledge. However, male students had a more positive attitude toward tobacco than women. Gender, marriage, education, and the field of study were factors associated with knowledge and attitudes to tobacco. The results of such studies can provide effective information to university authorities, health educators, health policymakers, the Ministry of health and medical education to better understand the issue of tobacco use, especially on cultural aspects, in addition to providing effective educational programs that can reduce or prevent tobacco use in the country.

### Conflicts of interest

There are no conflicts of interest

### Author contribution

All authors contributed to this research.

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