

DOI: <https://doi.org/10.36489/saudecoletiva.2020v10i59p4430-4441>

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El consumo de narguilé en medicina académica

ABSTRACT

Objective: To characterize the prevalence and use of hookah among medical students. **Method:** This is a cross-sectional, descriptive, quantitative study carried out with medical students from a private higher education institution in the south of the country. In this context, a structured questionnaire was applied on sociodemographic profile and use of hookah. **Results:** 247 academics participated in the research; 53.4% were female. Of these, 98 (39.8%) reported having used or using the hookah, 39.8% of whom started using it between the ages of 17 and 19; and 57.2% use it for fun; 99% do not consider themselves dependent; 23.5% use illicit substances concomitantly; 22.4% have access in the family environment, 35.7% finance the use for the family's income and 12.1% consent to the use; cough and hypotension were the signs reported during consumption (36.5% and 14.7%, respectively). **Conclusion:** We conclude that the prevalence of hookah use was considerable and emphasize the need for an approach in educational institutions.

ESCRITORES: Smoking; Tobacco Use; Consumption of Tobacco Derived Products; Tobacco for Hookahs; Prevalence.

RESUMEN

Objetivo: Caracterizar la prevalencia y el uso de narguile entre estudiantes de medicina. **Método:** Se trata de un estudio transversal, descriptivo y cuantitativo realizado con estudiantes de medicina de una institución privada de educación superior en el sur del país. En este contexto, se aplicó un cuestionario estructurado sobre perfil sociodemográfico y uso de narguile. **Resultados:** 247 académicos participaron en la investigación; El 53,4% eran mujeres. De estos, 98 (39,8%) informaron haber usado o usar la pipa de agua, de los cuales el 39,8% comenzó a usarla entre los 17 y 19 años; y el 57,2% lo usa para divertirse; El 99% no se considera dependiente; El 23,5% consume sustancias ilícitas de forma concomitante; El 22,4% tiene acceso en el ámbito familiar, el 35,7% financia el uso para el ingreso familiar y el 12,1% consiente el uso; tos e hipotensión fueron los signos reportados durante el consumo (36,5% y 14,7%, respectivamente). **Conclusión:** Concluimos que la prevalencia del uso de narguile fue considerable y enfatizamos la necesidad de un enfoque en las instituciones educativas.

DESCRIPTORES: Fumar; El consumo de tabaco; Consumo de productos derivados del tabaco; Tabaco para narguiles; Predominio.

RESUMO

Objetivo: Caracterizar a prevalência e o uso do narguilé entre acadêmicos do curso de medicina. **Método:** Trata-se de um estudo transversal, descritivo, quantitativo realizado com acadêmicos do curso de medicina de uma instituição de ensino superior privada do Sul do país. Nesse contexto, foi aplicado um questionário estruturado sobre perfil sociodemográfico e uso do narguilé. **Resultados:** Participaram da pesquisa 247 acadêmicos; 53,4% do sexo feminino. Destes, 98 (39,8%) referiram ter feito ou fazer uso do narguilé, sendo que 39,8% iniciaram o uso com idades entre 17 e 19 anos; e 57,2% o usam por diversão; 99% não se consideram dependentes; 23,5% utilizam substâncias ilícitas concomitante; 22,4% tem acesso no próprio meio familiar, 35,7% custeiam o uso pela renda dos familiares e 12,1% consentem sobre o uso; tosse e hipotensão foram os sinais referidos durante o consumo (36,5% e 14,7%, respectivamente). **Conclusão:** Conclui-se que a prevalência do uso de narguilé foi considerável e enfatizam a necessidade de uma abordagem nas instituições de ensino.

DESCRIPTORIOS: Tabagismo; Uso de Tabaco; Consumo de Produtos Derivados do Tabaco; Tabaco para Cachimbos de Água; Prevalência.

RECEIVED ON: 09/15/2020 APPROVED ON: 10/06/2020



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INTRODUCTION

Smoking is a chronic disease characterized by the dependence on nicotine present in tobacco products, and continues to be an important public health problem considered as the main isolated preventable cause of illness and early death in the world.⁽¹⁻³⁾ According to the World Health Organization (WHO), tobacco kills more than 8 million people a year and most deaths are the result of direct consumption of the product.⁴ Evidence points out that tobacco consumption has been considerably widespread in several countries in the world and that the majority of individuals start smoking in adolescence or even before 20 years of age. Early tobacco use is related to several factors, with emphasis on how the individuals' sociodemographic conditions (age, sex and religion); conflicting family relationships, as well as the influence of smoking parents and siblings, lack of support, participation and monitoring of the family in activities; social relations as an influence of friends; and behavioral factors such as the use of illicit drugs and initiation of sexual activity.⁵ There are several ways to consume tobacco, but smoking it is the most common practice and can be done through the use of pipes,

cigars, cigarettes and / or hookah, which is also called a water pipe.⁶ The hookah was invented in India by a doctor named Hakim Abul Fath, who suggested passing the smoke before being inhaled in a small container with water, as a safer and less harmful to human health process. This assumption stimulated the spread of popular knowledge, that hookahs would be more advantageous than other tobacco products. However, scientific evidence currently available no longer supports this hypothesis. Thus, the illegitimate popular belief, coupled with advertisements that encourage the use of hookah, plus easy access to the equipment and its products, the numerous attractive devices to use such as the inclusion of essences with flavors and aromas of smoke, and socialization measures consumption are attractive that justify indiscriminate use, especially among young people.⁸ As a result, the number of adherents to the use of the equipment has grown substantially and has become epidemic among adolescents, generating an alert for the World Health Organization (WHO) and medical society.⁹ Currently, there is evidence that at Universities, academics seek well-being and socialization through the use of substances and equipment such as hookah, since in this period they are exposed to several stressors.¹⁰ To

answer the research question: What is the prevalence and characteristics of the use of hookah among medical students? And, to fill a knowledge gap in order to produce information to assist in the development of prevention and health education strategies aimed at hookah users, this study was conducted, which aimed to characterize the prevalence and use of hookah among medical school students.

METHOD

This is a cross-sectional, descriptive study with a quantitative approach carried out with medical students from a private Higher Education Institution (HEI) located in a medium-sized municipality in the southern region of the country, from February to April 2019. In the period of data collection, 988 students were enrolled from the first to the sixth grade of the IES medical course (380 in the 1st year; 220 in the 2nd year; 100 in the 3rd year; 96 in the 4th year; 96 in the 5th year and 96 in the 6th year). To select the research subjects, the probabilistic sampling process of the uniform stratified type was carried out. For the composition of the sample, the selection criteria used were 25% of the total number of students in each grade of the course (namely: 95 1st year students, 55

2nd year students, 25 3rd year students, 24 4th year students, 24 5th grade students and 24 6th grade students). Then, through simple random sampling, participants in each series were recruited. To compose the sample, academics duly enrolled in the respective grades and over 18

years of age were included. There were no sample losses, totaling a sample of $n = 247$ students. For data collection, a structured questionnaire was used with 16 objective and multiple choice questions about the sociodemographic profile and the use of hookah among medical school students.

Subsequently, the data were analyzed statistically in Microsoft Office Excel 2016. The descriptive analysis was presented using tables with absolute frequency (n) and relative frequency (%). The study respected the ethical aspects of resolutions 466/2012 and 510/2016 of the National Health Council, 11 with approval by the Ethics and Research Committee under opinion number 3.076.436 and as set out in the Brazil Platform number CAAE 03711318.8.0000.5539. The subjects' participation was validated after acceptance, reading and signing the Informed Consent Form (ICF).

RESULTS

247 medical students participated in the study, of which 53,4% were female and 46,6% were male; aged between 18 and 20 years (49,8%), 21 and 22 years (23,1%) and, 23 years or more (27,1%). Of the total of academics who made up the sample, 98 (39,8%) reported having made or made use of the hookah. Of this, 39,8% started using it between the ages of 17 and 19 and 29,6% between the ages of 14 and 16. However, when asked about the frequency with which they use the equipment, 60,2% said it was rare and 57,2% justified the use at a time of fun/leisure. Still, 99% of these students did not consider themselves dependent on the use of the hookah and 23,5% reported using illicit substances concomitantly with this consumption. Regarding the access of academics to materials and equipment suitable for the use of hookahs, 22,4% stated that they had the artifacts at home, 13,3% frequented tobacco shops and 64,3% stated that they obtained it in other ways, such as example loaning the equipment through friends. The cost of hookah use by 35,7% of students was supported by family income (table 1).

Regarding the possible signs and symptoms that hookah users could present during its use, 36,5% of the students reported hypotension, 14,7% cough and 24,5% none of the suggested symptoms. It should be noted that in this question

Table 1. Characterization of the use of hookah among medical students at a private university. Maringá / PR, 2019.

Características	N	n (%)
Fazem uso do narguilé	247	
Sim		98 (39,8)
Não		149 (60,2)
Idade de início do uso	98	
11-13 anos		04 (4,1)
14 -16 anos		29 (29,6)
17-19 anos		39 (39,8)
20-22 anos		20 (20,4)
23-25 anos		06 (6,1)
Frequência do uso	98	
Todos os dias		02 (2,0)
Raramente		59 (60,2)
Somente nos fins de semana		16 (16,4)
Somente em festas		19 (19,4)
Outro		02 (2,0)
Motivo do uso	98	
Alívio		01 (1,0)
Prazer		28 (28,6)
Diversão		56 (57,2)
Pressão social		01 (1,0)
Mais de uma opção		12 (12,2)
Origem do equipamento para o uso	98	
Próprio		22 (22,4)
Tabacarias		13 (13,3)
Outra procedência		63 (64,3)
Renda para custear o uso	98	
Trabalho		02 (2,0)
Renda familiar		35 (35,7)
Amigos		29 (29,6)
Outros		27 (27,6)
Mais de uma opção		05 (5,1)

Source: author himself, 2019.

the student could check more than one option if he considered it relevant (table 2). Finally, it is observed that when asked about the acceptance of family members in relation to the use of the hookah 40,9% of the students did not know respond, while 25,9% reported that family members did not accept the use of the hookah, 13% stated that they did not talk about the subject and 12,1% knew and accepted the use (table 2).

DISCUSSION

According to the prevalence of hookah use among the participants in this study, approximately 40% of the students used or used the equipment at some point in their lives. A study similar to the one con-

ducted in 2013 in the United States brings similar data on the prevalence of hookah use among students, in which it estimated a frequency of experimentation of 46,4% and continuous use of 28,4% in the period of one year between the 1.023 participants.¹² In Brazil, a study carried out at a private university in Curitiba / PR that investigated the prevalence of tobacco products among university students in the dentistry course, showed a prevalence of approximately 25% of tobacco use among students, with the hookah proved to be the most consumed product in almost 67% of the participants.¹³

Another study conducted in 2018, which used data from the National School Health Survey (PeNSE) of 2012 and 2015 and aimed to identify the frequency and

factors associated with the use of hookahs and other tobacco products among Brazilian schoolchildren, showed that in Brazil In 2015, the hookah was the most used product among students (71,6%). Furthermore, it also showed that studying at a private educational institution was a positive factor for the consumption of tobacco and other derivatives.¹⁴ The high prevalence of hookah use, especially among young people, can be justified by the strong dissemination of the use of the equipment in Brazil in the last decades and by the attractive advertisements encouraging its consumption, the easy access to the equipment and the fact that it is considered a means of socialization among young people.⁸ Given this context, associated with the increase in the use of hookahs among Brazilians, in 2015, on the National Day to Combat Smoking, the campaign had the theme of Hookahs and Smoking Initiation, with a warning about the dangers of smoking. According to the Ministry of Health in a period of five years analyzed, the percentage of adherence to the hookah more than doubled, mainly in males.¹⁵ Regarding the beginning of the use of the hookah among the participants of this study, the students reported having started, mostly, between the ages of 14 and 19 years old (approximately 70% of the total sum), that is, this age group of age coincided with the transition period between high school and entering higher education. These findings corroborate with evidence brought by the literature, showing that most individuals start tobacco use in adolescence or even before 20 years of age.¹³ Still, when asked about the frequency of using the hookah, more than 60% said they use it sporadically (rarely).

A study carried out in 2019, with academics from the University Center of Brasília (UniCEUB), on the prevalence and profile of students who used hookah, found that more than 60% of the participants had already tried the product, and approximately 36% rarely used it of the equipment for about 20 minutes.¹⁶ The frequency with which young people use the hookah for the consumption of tobacco products

Table 2. Association of hookah use and the main symptoms related to hookah consumption. Maringá/PR, 2019.

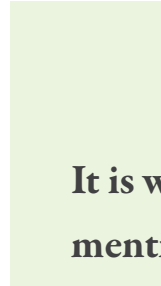
Características	N	n (%)
Dependência do uso	98	
Sim		01 (1,0)
Não		97 (99,0)
Uso de substância ilícita concomitante	98	
Sim		23 (23,5)
Não		75 (76,5)
Sinais e sintomas apresentados durante o uso*	143*	
Hipotensão		52 (36,3)
Taquicardia		11 (7,7)
Pigarro		07 (4,9)
Cefaléia		10 (7,0)
Lesões na mucosa bucal		01 (0,7)
Dispneia		06 (4,2)
Tosse		21 (14,7)
Nenhum dos sintomas		35 (24,5)
Aceitação familiar sobre o uso	247	
Aceitam		30 (12,1)
Não aceitam		64 (25,9)
Falam abertamente sobre o uso		20 (8,1)
Nunca se referiram ao assunto		32 (13,0)
Não responderam		101 (40,9)

Source: author himself, 2019.

* The academic could check more than one option.

is worrying, because even though the use of the equipment is rare, the evidence indicates that a puff on the equipment is similar to the volume of smoke inhaled with a single cigarette, that is, the hookah is more harmful to health and in a single session can be equivalent to smoking 20 to 30 cigarettes.¹⁷ In this study, when the participants were asked about the reasons that lead them to use the hookah, 57% justified or associated it with a moment of leisure and fun. Taking this argument into account, evidence shows that the main motivations that attract young people to hookah are due to the fact that it offers a variety of flavors and aromas and is not considered, by many users, as a way of smoking tobacco.¹⁶ This makes the practice of using hookah favors socialization, socializing with friends and moments considered to be relaxing, as has been pointed out in other studies.¹⁸ Regarding the access of academics to materials and equipment suitable for the use of hookahs, it was observed that more than 35% have it in an easier way through tobacco shops or by the family environment itself. However, more than 64% get the hookah by other means not mentioned. A study carried out with dentistry students states that students were able to buy or consume hookahs easily in gas stations, bars and newsstands.¹³ Therefore, health and safety authorities in the municipalities must intervene in the aforementioned commercial environments, through health education actions aimed at hookah users regarding their harm to human health. In addition, inspection actions would be important to monitor the consumption of illegal substances along with the use of the hookah.

In Brazil during the period 2003 to 2015, a study used the use of population surveys supporting evidence-based public policies. The studies brought results from the National School Health Survey and the National Health Survey (PNS) of 2013, which guided the regulation of the Anti-Smoking Law, such as the presidential decree on tobacco-free environments, the increase in taxation and the establishment of prices tobacco, the interminister-



It is worth mentioning that the implementation and maintenance of these measures is fundamental for advances in the prevention of health problems...

rial ordinance that included hookah in the regulation and ban in smoke-free environments, in 2014.²¹ It is worth mentioning that the implementation and maintenance of these measures is fundamental for advances in the prevention of health problems, allowing a strategy such as the inspection of tobacco-free environments, attention to trends and fads of new products. tobacco initiation among young people, as one of the public health objectives.²¹ Still regarding the accessibility to the equipment, 35,7% of the academics reported that the cost for the use of the hookah and its products is based on the family income of the participants, that is, in part the family members are aware of the use by the person responsible. Additionally, when asked about the opinion of family members in relation to the use of the equipment, 25,9% stated that they did not accept it, 13% stated that they did not discuss the subject and 12,1% accepted the use without hindrance. Given this, it is evident the need to discuss this topic in the family environment and guide

them as to the future damage that the use of the hookah can bring to health, as it is known that the consumption of tobacco via hookah is also associated with a greater risk of developing chronic diseases, especially pulmonary, periodontal, lung cancer and nicotine dependence.^{8,23} The nicotine present in tobacco products causes physical and psychological dependence in its users.¹⁷ When the participants in this study were asked about the dependence or not on the use of the hookah, 99% of those who had already used it did not consider themselves dependent on the equipment. However, a similar study that aimed to verify the prevalence of hookah use/experimentation and associated factors in students at a university also in southern Brazil showed that individuals who smoked hookah for the first time before the age of 18 and who used flavored tobacco, were more likely of stayed in longer hookah sessions.²²

These data reveal, subliminally, that the consumption of hookah also leads to smoking addiction, even if users do not recognize it. In addition to the significant increase in hookah consumption, another worrying factor is the association of illegal substances and alcohol consumption, concomitantly with its use. The consumption of these substances has been increasing among young university students, who eventually find themselves in a phase of cognitive and affective conflicts and are faced with an enabling environment for this. This study showed that almost 24% of the students who used the hookah claimed to use other illicit substances concurrently. It is a fact that generates concern, given that drugs alter the level of consciousness, leading individuals to become involved in sex without a condom, violence, in addition to causing problems in the family environment and chemical dependence.¹⁶ In this study, hookah users reported symptoms that accompany the consumption of the product and those that follow it, showing that it even causes toxicity to the body. Symptoms such as hypotension (36,5%) and cough (14,7%) were the most frequent. A study carried out in 2017 that

identified the prevalence and profile of students who used hookah from Faculdades Integradas Padre Albino (FIPA), showed that participants also reported dizziness, headache, weakness, nausea, dyspnoea and vomiting during and after hookah consumption. During the use of the hookah it was found that, in addition to not burning coal, there is incomplete combustion of tobacco, since it happens at a temperature close to 500 °C (below the combustion temperature of ordinary cigarettes), this temperature high favors the release of concentrations of toxic pro-

ducts, which are inhaled by users (both active and passive smokers). About 300 chemicals were identified in the smoke of the hookah, and 82 toxic substances, 23 carcinogens, in addition to the addictive nicotine were quantified.¹⁵

CONCLUSION

This study brought significant contributions on the prevalence and characteristics of the use of hookahs among medical students. It is understood that this theme is of great importance for public health, in view

of the increasing prevalence of the use of hookah among young people and also the numerous scientific evidences that address the harm it brings to physical, psychological and familiar. Therefore, it is extremely important to approach the subject in educational institutions, at all levels, and make students aware of the damage that the use of hookah causes in the body in the short, medium and long term. The results obtained in this study have great social relevance, however, as limitations it is pointed out that the cross-sectional study makes it impossible to delineate causal relationships. ■

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