

Smoking Prevalence Among Medical Residents in Tunis

Prévalence du tabagisme chez les résidents en médecine

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SUMMARY

Introduction : Smoking is a significant risk factor for non-communicable diseases and premature death, with a high prevalence in Tunisia. Despite their awareness of smoking's risks, many medical professionals in Tunisia continue to smoke. This study aims to evaluate the prevalence and characteristics of smoking behaviors among medical residents in Tunisia.

Methods: A descriptive cross-sectional study was conducted using an online questionnaire distributed via Google Forms to medical residents across Tunisia from February to March 2022. The questionnaire collected data on demographics, professional details, smoking cessation training, opinions about smoking and personal smoking behaviors.

Results: A total of 302 residents participated, with a mean age of 28±2 years and a female representation of 65.2%. Smoking prevalence among the residents was 29.5%. Among the participants, 7% were former smokers, 9% occasional smokers, and 13.5% permanent smokers. The majority of former smokers started during medical school and cited symptoms, health risks, and economic reasons as motivations for quitting. Among current smokers, smoking frequency increased during evenings, shifts, and exam periods. Permanent smokers exhibited higher levels of nicotine dependence, and symptoms related to smoking were reported by 68.5% of them. Therapeutic means such as electronic cigarettes and nicotine substitutes were used by some residents in their cessation attempts.

Conclusion: The study highlights the concerning prevalence of smoking among medical residents in Tunisia. There is a pressing need for targeted smoking cessation initiatives within the medical community to address this issue and promote a healthier, smoke-free environment.

KEYWORDS

Smoking- medical residents- nicotine dependence

RÉSUMÉ

Introduction : Le tabagisme est un facteur de risque important de maladies non transmissibles et de décès prématurés, avec une prévalence élevée en Tunisie. Malgré leur conscience des risques liés au tabagisme, de nombreux professionnels de la santé en Tunisie continuent de fumer. Cette étude vise à évaluer la prévalence et les caractéristiques des comportements tabagiques chez les médecins résidents en Tunisie.

Méthodes: Il s'agit d'une étude transversale descriptive menée à l'aide d'un questionnaire en ligne distribué via Google Forms aux résidents en médecine à travers la Tunisie de février à mars 2022. Le questionnaire a collecté les données démographiques, les détails professionnels, les opinions sur le tabagisme et les comportements personnels en matière de tabagisme.

Résultats: Au total, 302 résidents ont participé, avec un âge moyen de 28 ± 2 ans et une prédominance féminine de 65,2 %. La prévalence du tabagisme parmi les résidents était de 29,5 %. Parmi les participants, 7 % étaient d'anciens fumeurs, 9 % des fumeurs occasionnels et 13,5 % des fumeurs permanents. La majorité des anciens fumeurs ont commencé pendant leurs études de médecine et ont cité les symptômes, les risques pour la santé et les raisons économiques comme motivation pour arrêter de fumer. Parmi les fumeurs actuels, la fréquence du tabagisme augmentait le soir, pendant les gardes et les périodes d'examen. Les fumeurs permanents présentaient des niveaux plus élevés de dépendance à la nicotine et des symptômes liés au tabagisme ont été signalés par 68,5 % d'entre eux. Des moyens thérapeutiques tels que la cigarette électronique et les substituts nicotiques ont été utilisés par certains résidents dans leurs tentatives de sevrage.

Conclusion: L'étude met en évidence la prévalence préoccupante du tabagisme parmi les résidents en médecine en Tunisie. Il existe un besoin urgent d'initiatives ciblées d'abandon du tabac au sein de la communauté médicale pour résoudre ce problème et promouvoir un environnement plus sain et sans fumée.

MOTS-CLÉS

Tabac-Résidents
En médecine-
Dépendance à la
nicotine

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INTRODUCTION

World Health Organization (WHO) defines smoking as the occasional or permanent use of tobacco or tobacco products (1). Smoking is the second leading risk factor (9%) for the development of mass non-communicable diseases (NCD) (cardiovascular diseases, chronic obstructive pulmonary disease, malignant diseases, etc.) and premature death globally (2).

In Tunisia, the prevalence of smoking and its related mortality rates are significant public health issues. According to the Tobacco Atlas, approximately 24% of the adult population in Tunisia smokes and 19% of all deaths in Tunisia are caused by tobacco use (approximately 12,669 deaths annually) (3).

Even though doctors and medical students know the consequences of smoking and have an essential role in encouraging patients to quit smoking, some physicians continue to smoke.

Historical data reveals that in 1996, 38% of students at the medical universities of Tunisia were smokers (4). More recently, a 2023 study indicated that 14.1% of medical residents suffering from depression had smoking habits (5).

Our study aims to assess the prevalence of smoking behaviors among medical residents in Tunisia.

METHODS

1. Population and Questionnaire

We included residents who agreed to complete an online questionnaire between February and March 2022. The questionnaire was distributed via a Google Form link (<https://forms.gle/FxyS4hArZbhUKrww5>) to a group of medical residents in Tunisia.

The questionnaire was divided into four sections:

1. An introduction explaining the study's purpose, data confidentiality, and the anonymity of participants.
2. Demographic and professional details of the respondents.
3. Training on smoking cessation and residents' opinions about smoking.
4. Smoking behaviors of the respondents.

The residents have been classified as Non-smoker (does not smoke), Former smoker (has quit smoking), Occasional or intermittent smoker (non-daily smoker), and Permanent smoker: daily smoker.

Depending on the respondent's smoking status:

- For former smokers, we collected information on the type of tobacco used, age when smoking started, pack-years, years since quitting, timing of smoking initiation relative to starting medical studies, motivation for quitting, cessation aids used, and number of quit attempts before successfully quitting.
- For current smokers, we assessed smoking frequency and classify them as either occasional or regular smokers.
- Occasional smokers provided details on when they started smoking, type of tobacco, pack-years, smoking frequency, when they smoke more frequently, smoking at the faculty or hospital, cessation attempts, and cessation aids used.
- Regular smokers were asked about when they started smoking, type of tobacco, pack-years, daily cigarette consumption, periods of increased smoking, daily spending on tobacco, symptoms from smoking, smoking at the faculty or hospital, cessation attempts, Fagerström test for nicotine dependence, and their motivation to quit smoking.

2. Definitions

The Fagerström Test is a clinical tool for assessing the degree of nicotine dependence through six questions. Dependence is considered: none if the score is 0 to 2, low if 3 to 4, moderate if 5, high dependence if 6, and very high from 7 to 10. (6)

3. Statistical analysis

Statistical analysis was performed using Excel and SPSS software, focusing on frequencies, averages, standard deviations, and ranges for qualitative and quantitative data.

RESULTS

1. Study population

We received 302 responses to the questionnaire. Mean age was 28 ± 2 years old, with extremes ranging from 23 to 38 years. The gender ratio was 0.65 with 65.2% women (197 residents). 259 residents had a medical specialty (85.76%) and 14.24% (43) a surgical one.

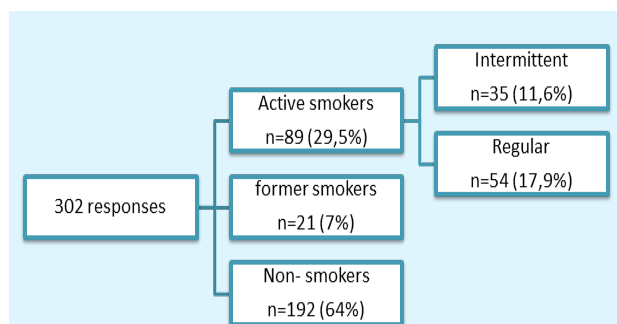


Figure 1. Smoking status of the residents

3. Characteristics of former smokers

The mean age was 19 ± 2.5 years old, with extremes ranging from 15 to 23 years. Among the 21 former smoking residents, 15 started smoking during medical school.

Figure 2 summarizes the year of medical studies during which the residents started smoking.

28.6% of the residents who started smoking during medical studies abstained from responding.

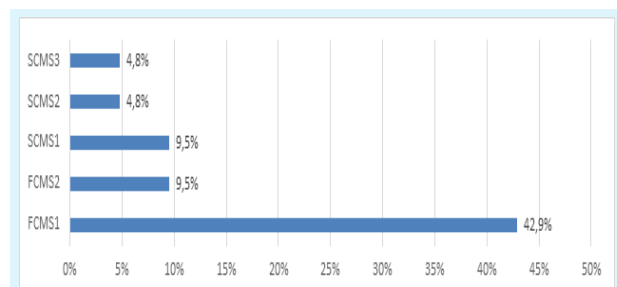


Figure 2. The academic year during which the resident began smoking
SCMS: Second cycle of medical studies, FCMS: First cycle of medical studies.

Cigarettes were the most consumed type of tobacco as shown in Figure 3.

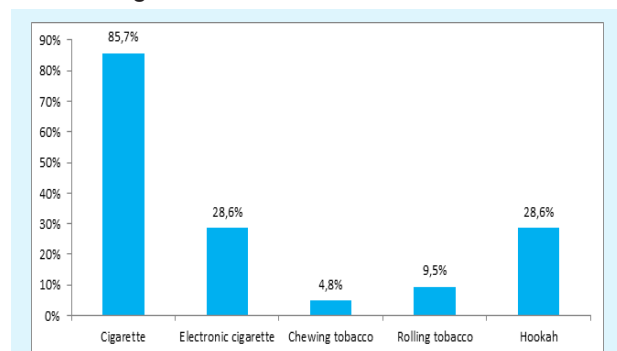


Figure 3. Type of tobacco consumed by former

The mean pack-year number was 7, with extremes ranging between 1 and 25 pack-years. The average number of years of cessation is 3.35 ± 2 years, with extremes ranging from 0 to 11 years.

Various reasons for quitting smoking were stated: symptoms related to tobacco use (65%), health risks of tobacco (55%), economic reasons (20%), restrictions imposed at home (15%) and at work (5%), and the experience of tobacco-related illnesses in friends or relatives (5%).

Among the 21 residents who successfully quit smoking, five used therapeutic means: electronic cigarettes (23.8%), and nicotine substitutes (9.5%). The mean attempts number before successful smoking cessation was 3.19 ± 2.5 times.

All the residents who stopped smoking reported feeling better after quitting.

4. Characteristics of active smoking residents

4.1. Occasional smokers

The mean age at which residents began smoking was 21.29 ± 4.31 , with extremes ranging from 9 to 29 years old. Twenty-seven residents started smoking during medical studies, accounting for 77.1% of the cases.

Figure 4 shows the smoking frequency of the occasional smoking residents.

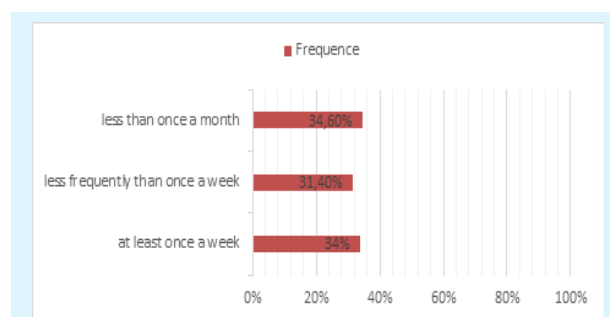


Figure 2. Smoking frequency of the occasional smoker resident

Smoking habits increased during evenings (57%), on shifts (46%), with alcohol (40%), and during exams period (11.4%), primarily using traditional cigarettes (91.4%).

Nineteen residents tried to quit, with attempts ranging from 1 to 100, where 100 represents countless attempts.

4.2. Permanent Smokers

The mean age at the beginning was 19 ± 3 years old. 38 residents started smoking during their medical studies, which accounts for 70.4% of cases.

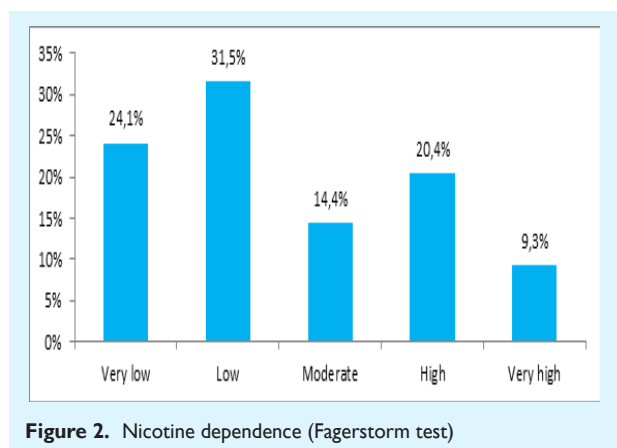
All smoked traditional cigarettes, five also smoked hookah, one used rolling tobacco, and six electronic cigarettes.

The mean pack consumption years was 6.84. Tobacco use increased during shifts (7%), while alcohol consumption (78%), during evenings (76%), and exams period (74%).

Among the permanent smoker residents, 68.5% had experienced tobacco-related symptoms ($n=37$): decreased taste (44%) and smell (32%), persistent cough (28%), palpitations (17%), gastric pains (15%), and decreased libido (4%).

27% of the permanent smoker residents had tried to quit smoking ($n=39$). The average number of attempts at smoking cessation was 2 ± 1 . Residents who attempted smoking cessation ($n=18$) used therapeutic means: nicotine replacements ($n=7$) and electronic cigarettes ($n=12$).

Figure 5 shows the degree of nicotine dependence of the smoking residents.



DISCUSSION

Smoking is a significant public health issue that affects not only the general population but also medical professionals (7). Our study aimed to assess the prevalence of smoking behaviors among medical residents in Tunisia. The main results of our research showed a high prevalence of smoking among medical students in Tunisia reaching 29,5 %.

The main limitations of our study were the relatively small

sample size, subjective responses obtained through the self-administered questionnaire

Our study benefited from the inclusion of residents across all four medical universities. We used an electronic self-administered questionnaire via Google Forms, facilitating the distribution and data collection.

1. Prevalence

In our study, we found a smoking prevalence of 29.47% among the residents. This is comparable to the general prevalence in European countries, which was reported at 29.2%. However, it's significantly higher than in the Americas, where the prevalence stands at 20.3% (8).

When looking at trends over time in Tunisia, smoking rates have risen steadily from 14.2% in 2013 to 22.1% in 2016, and up to 26% in 2020 (9-11). In contrast, rates in other Arab and African countries remain lower, with Egypt reporting a 13% prevalence and Saudi Arabia at 18.4% (12-13).

These results highlight varying smoking habits across different regions and over time.

2. Factors increasing the smoking rate

In our study, smoking rates increased under certain conditions. Evening smoking was reported by 57% of participants, likely due to downtime or social activities (14). Shift work also led to increased smoking for 46% of the group, aligning with evidence that work stress contributes to higher smoking rates (15). During exams, 11.4% smoked more, indicating that academic stress is a relevant factor (16).

3. Quitting

In our study, 7% of residents successfully quit smoking.

They shared different reasons: most commonly, symptoms related to tobacco use (65%), and knowing the health risks of tobacco (55%). Some also reported restrictions imposed at home (15%) and at work (5%), and the experience of tobacco-related illnesses in friends or relatives (5%). These reasons were found in a study conducted in China, also pregnancy was another important reason to quit smoking (17).

Among the 21 residents who successfully quit smoking, five used therapeutic means: electronic cigarettes (23.8%), and nicotine substitutes (9.5%). This result aligns with the previous study in which willpower represented the most efficient factor to quit smoking followed by nicotine substitutes and electronic cigarettes (17).

CONCLUSION

Our study sheds light on the prevalence of smoking behaviors among medical residents in Tunis, which was high and alarming.

Moving forward, collaborative efforts between healthcare institutions, public health authorities, and professional organizations are imperative to promote smoking cessation initiatives and foster a smoke-free culture within the medical community.

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