


Prevalence and Attitudes Towards Tobacco Consumption Among Workers at Axxis Hospital de Especialidades, Quito – Ecuador

Prevalencia y actitudes acerca del consumo de tabaco en los trabajadores de Axxis Hospital de Especialidades, Quito - Ecuador

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ABSTRACT

Background: Tobacco causes more than eight million deaths annually, seven million due to direct use and 1.2 million due to indirect exposure. In 2020, 118 million people in the Americas consumed tobacco, with a prevalence of 11.5% in Ecuador.

Objectives: To determine the prevalence of tobacco use among healthcare professionals at Axxis Hospital de Especialidades.

Methods: An observational, cross-sectional study was conducted. The study population consisted of workers from all units of the Axxis Hospital de Especialidades in June 2024.

Results: The sample consisted of 239 completed surveys. The mean age was 37 years, and most of the respondents were female (68 %). The prevalence of smoking in the sample under study was nearly 20% (8.3 % active smokers and 10.5 % former smokers). The individuals began to smoke between the ages of 15 and 19, accounting for 56 % of cases. When asked about their intention to quit smoking, 73 % expressed a strong desire to quit, 60 % planned to do so within the next six months, and 53 % within the next 15 days.

Conclusions: We conclude that the prevalence of smoking among workers at the Axxis hospital is low, with a low dependence on tobacco and a high willingness to quit smoking.

Keywords: Tobacco; Dependence; Healthcare workers

RESUMEN

Introducción: El tabaco causa más de ocho millones de muertes anuales, siete millones por uso directo y 1,2 millones por exposición indirecta. En 2020, 118 millones de personas en América consumían tabaco, con una prevalencia del 11,5 % en Ecuador.

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Objetivos: Determinar la prevalencia de hábito tabáquico en los profesionales de la salud en Axxis Hospital de Especialidades.

Materiales y métodos: Se realizó un estudio observacional, transversal. La población de estudio lo constituyeron los trabajadores de todas las unidades de Axxis Hospital de Especialidades en el mes de junio del 2024.

Resultados: La muestra estuvo constituida por 239 encuestas respondidas. La edad promedio fue de 37 años, la mayor parte de encuestados fueron de género femenino con un 68%. La prevalencia de tabaquismo en la muestra estudiada fue casi un 20% (8,3% de ellos fumadores activos y 10,5% exfumadores). El inicio del consumo de tabaco estuvo en el rango de 15-19 años, con el 56%. Cuando se preguntó sobre la intención de dejar de fumar, el 73% respondió que tiene un alto interés por dejar de fumar, el 60% se proponía hacerlo en los siguientes 6 meses y un 53% dentro de los siguientes 15 días.

Conclusiones: Concluimos que la prevalencia en tabaquismo de los trabajadores de Axxis hospital es baja, existe una baja dependencia al tabaco con un alto deseo por dejar de fumar.

Palabras clave: Tabaco; Dependencia; Trabajadores de la salud

INTRODUCTION

Tobacco consumption is known to be associated with various diseases and causes high morbidity and mortality. According to the WHO (World Health Organization), tobacco causes more than eight million deaths annually, seven million related to direct use and 1.2 million due to indirect exposure. In 2020, the prevalence of tobacco use in the Americas was estimated at 118 million people, while in Ecuador, it was calculated to be 11.5%.¹

Smoking is a significant risk factor for many chronic diseases, including many types of cancer, chronic respiratory diseases, cardiovascular diseases, and metabolic disorders such as diabetes. Therefore, smoking has been recognized as the single most important preventable cause of morbidity and premature mortality.

A key aspect of controlling this condition is the role of healthcare professionals, who are essential in health promotion and disease prevention, including smoking cessation. They provide counseling on the risks of smoking and offer strategies to reduce tobacco use. However, a portion of healthcare professionals themselves engage in tobacco consumption.

Thus, tobacco control policies depend largely on the commitment of healthcare workers, specifically their attitudes and behavior toward smoking, both personally and professionally.² Since 2004, Ecuador has been a signatory to the WHO Framework Con-

vention on Tobacco Control, requiring the country to adopt policies aimed at protecting present and future generations from the potential environmental, health, social, and economic devastation caused by tobacco consumption, its derivatives, and exposure to tobacco smoke.³

The primary objective of this research is to analyze the prevalence of conventional and electronic tobacco use in a tertiary care level hospital in the city of Quito, Ecuador. A previous study conducted in the city of Cuenca found that 32.4% of physicians were smokers, with a higher prevalence among males.⁴

This study will provide an objective view of tobacco consumption among healthcare professionals that will contribute to the development of effective strategies to reduce its prevalence in the hospital environment.

OBJECTIVES

General

To determine the prevalence of tobacco consumption among healthcare professionals at Axxis Hospital de Especialidades.

Specific

Establish the prevalence of patients who smoke or used to smoke.

Compare prevalence indicators according to occupation.

Characterize tobacco consumption among smokers.

Analyze the degree of dependence in smokers.

Assess the person's willingness to quit smoking.

METHODS

An observational, cross-sectional study was conducted. The study population consisted of workers from all units of the Axxis Hospital de Especialidades in June 2024. Through the use of a survey, an anonymous questionnaire was provided which lasted approximately five minutes, and was sent digitally to all hospital workers.

The inclusion criterion was to be medical or non-medical staff working at Axxis Hospital. The exclusion criterion was failure to respond to the survey.

The variables studied included:

-Demographic variables: Age, gender, occupation.

-Variables regarding tobacco consumption: Dependence measured by the Fagerström test and time to the first cigarette, age of initiation, reason for initiation, type of tobacco consumed.

-Variables regarding the attitude towards smoking: Considering smoking as a disease, a habit, or as not being harmful to health; motivation to quit smoking.

-Variable regarding perceived risks of electronic and conventional cigarettes

Statistical analysis

The baseline characteristics of the patients were described using standard statistical methods. Continuous variables were compared using the Student's t-test or the Mann-Whitney test, as appropriate. Categorical variables were compared using the Chi-Square test or the Fisher's exact test when necessary.

The analyses were performed using the statistical software JASP, Version 0.17.2.1 5.

P-values < 0.05 were considered statistically significant.

RESULTS

The sample consisted of 239 completed surveys. The mean age was 37 years, and most of the

respondents were female, as shown in Figure 1 (67.8%). The distribution of respondents by discipline was as follows: physicians 34.31%, administrative staff 25.5%, nurses 13.39%, nursing assistants 8.37%, and the rest belonged to other categories, shown in Figure 2. The distribution of smoking status is presented in Figure 3. The prevalence of smoking in the studied population was 18.8%, with 11.30% in men and a lower impact in women, at 7.53%. Of this total, 8.3% were daily or occasional smokers.

From the study group, a total of 45 people have been or are currently exposed to tobacco consumption. Of these, twenty-five respondents (55.56%) have quit smoking, which is a positive finding in terms of reducing smoking in this population. However, eleven people (24.44%) are still occasional smokers, while nine people (20%) smoke daily. Overall, 44.44% of the respondents continue to smoke, either occasionally or daily. These results highlight the importance of maintaining and strengthening strategies of smoking prevention and cessation to reduce its prevalence in this population.

The following table shows the distribution of smokers and former smokers across different age groups. The highest proportion of former smokers is in the 36 to 40-year-old range (15.56%). The percentage of daily smokers is relatively low in general, with the highest prevalence among those aged 26 to 30 and 31 to 35 years (4.44%). The highest concentration of occasional smokers is in the 26 to 30-year-old range (8.89%). The age range with the highest total proportion of smokers



Figure 1. Distribution of respondents according to gender

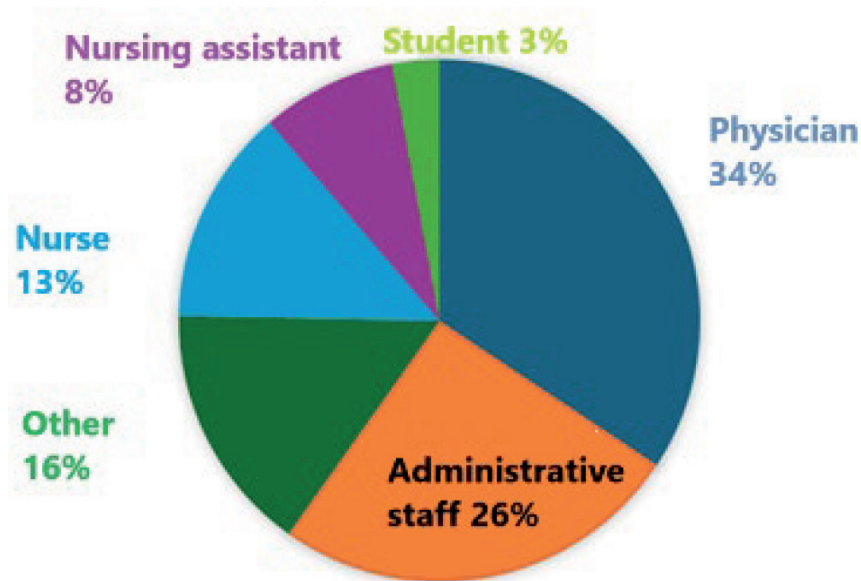


Figure 2. Distribution of respondents according to their occupation

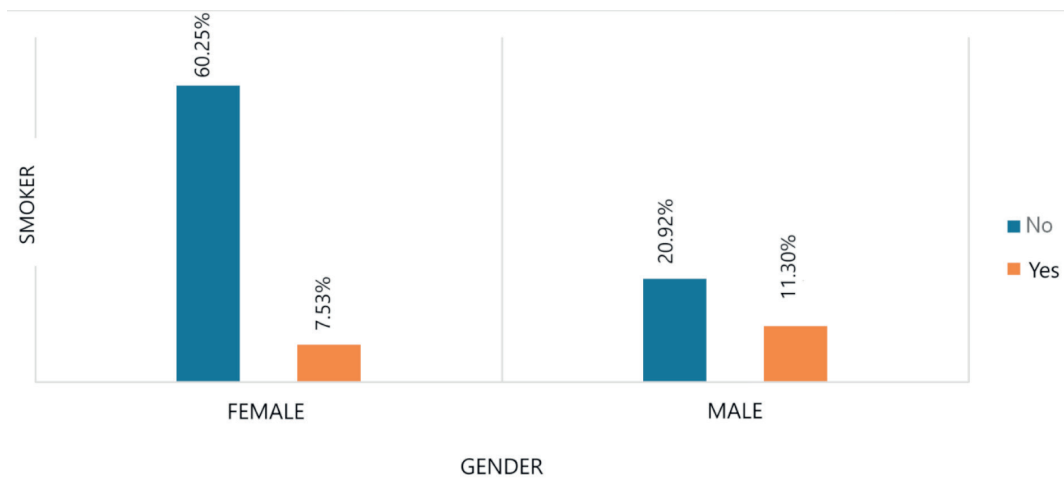


Figure 3. Distribution of smokers according to gender

is 26 to 30 years (17.78%), followed by the 41 to 45-year-old range (17.78%).

Smoking in all its forms was higher among physicians (46.67%), and lower among administrative staff (31%), accounting for 23% in other areas. Despite their knowledge of tobacco-related risks, physicians had the highest percentages of both former and active smokers. Administrative staff also showed high smoking rates, while students

and nursing assistants had the lowest prevalence. The main reason why the population started consuming tobacco was peer influence, accounting for 78%. Daily smokers began to smoke between the ages of 15 and 19, accounting for 55.56% of cases. Men are not only the majority of daily smokers but also tend to start smoking at a younger age, especially between 15 and 19 years old, while women who smoke appear to have started later, after the age of 20 (Table 4).

TABLE 1. Prevalence of smoking among workers at Axxis Hospital de Especialidades according to gender and age

Rango de Edad	Non-smoker	Former smoker		Daily smoker		Fumador ocasional	
		Females	Males	Females	Males	Females	Males
range 16-20 years	0.42%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
range 21-25 years	7.95%	0.42%	0.00%	0.00%	0.00%	0.00%	0.84%
range 26-30 years	23.85%	0.42%	0.42%	0.42%	0.42%	0.42%	1.26%
range 31-35 years	14.64%	0.84%	0.00%	0.00%	0.84%	0.42%	0.00%
range 36-40 years	10.88%	1.67%	1.26%	0.00%	0.42%	0.00%	0.42%
range 41-45 years	5.44%	0.84%	1.67%	0.00%	0.42%	0.42%	0.00%
range 46-50 years	7.11%	0.42%	0.84%	0.00%	0.42%	0.42%	0.00%
range 51-55 years	2.93%	0.00%	0.00%	0.00%	0.00%	0.00%	0.42%
range 56-60 years	5.44%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
range 61 or older	2.51%	0.84%	0.84%	0.00%	0.84%	0.00%	0.00%
Overall total	81.17%	5.44%	5.02%	0.42%	3.35%	1.67%	2.93%
					8.37%		

TABLE 2. Distribution of smokers and former smokers according to their age range

Age range	Former smoker	Daily smoker	Occasional smoker	Overall total
range 21-25 years	2.22%	0.00%	4.44%	6.67%
range 26-30 years	4.44%	4.44%	8.89%	17.78%
range 31-35 years	4.44%	4.44%	2.22%	11.11%
range 36-40 years	15.56%	2.22%	2.22%	20.00%
range 41-45 years	13.33%	2.22%	2.22%	17.78%
range 46-50 years	6.67%	2.22%	2.22%	11.11%
range 51-55 years	0.00%	0.00%	2.22%	2.22%
range 61 or older	8.89%	4.44%	0.00%	13.33%
Overall total	55.56%	20.00%	24.44%	100.00%

TABLE 3. Prevalence of smoking according to occupation

Occupation	Former smoker	Daily smoker	Occasional smoker	Overall total
Administrative activities	15.56%	6.67%	8.89%	31.11%
Nursing assistant	2.22%	0.00%	0.00%	2.22%
Nurse	4.44%	0.00%	0.00%	4.44%
Student	0.00%	0.00%	2.22%	2.22%
Physician	28.89%	11.11%	6.67%	46.67%
Other	4.44%	2.22%	6.67%	13.33%
Overall total	55.56%	20.00%	24.44%	100.00%

This study showed that 56% of surveyed smokers smoke their first cigarette 60 minutes after waking up. Meanwhile, in the former smokers' group, this percentage increases to 83% within the same time range. Most of the evaluated smokers have low to moderate nicotine dependence, with scores ranging from 0 to 3 points. Only smoker 143 exhibits high dependence, scoring 8 points, due to heavy smoking, difficulty quitting, and continuing to smoke even when sick. Smoker 153 has moderate dependence, with a score of 4, as shown in Figure 5. A total of 88.89% of smokers consume between 1 and 11 cigarettes per day, indicating that most smokers in this group have relatively low to moderate cigarette consumption. Meanwhile,

11.11% of respondents smoke between 21 and 30 cigarettes per day, representing a minority of high-consumption smokers.

The study found that 18% of daily smokers reported having used electronic cigarettes, while 73% indicated that they used conventional cigarettes. Additionally, 9% of respondents reported using cannabis. These results highlight the prevalence of conventional cigarettes over other forms of consumption, such as electronic cigarettes and cannabis.

Regarding the perception of electronic cigarettes and their harmfulness among current smokers, 22% believe they are less harmful than conventional cigarettes. Furthermore, 62% of respondents

TABLE 4. Frequency of daily smokers according to gender and age of initiation

Age of smoking initiation	Females	Males
10-14 years	0.00 %	11.11 %
15-19 years	0.00 %	55.56 %
Older than or equal to 20 years	11.11 %	22.22 %
Overall total	11.11 %	88.89 %

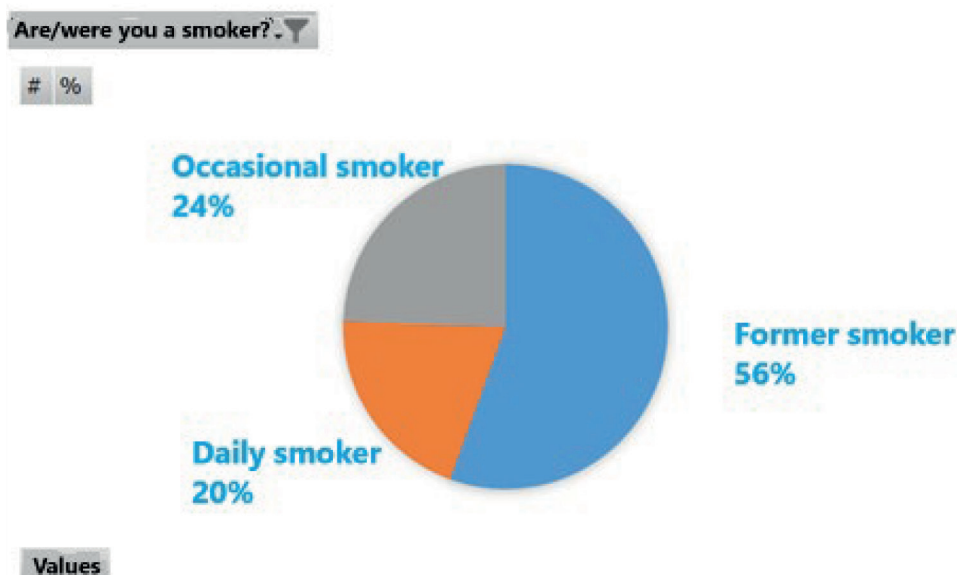


Figure 4. Distribution of people according to their tobacco consumption

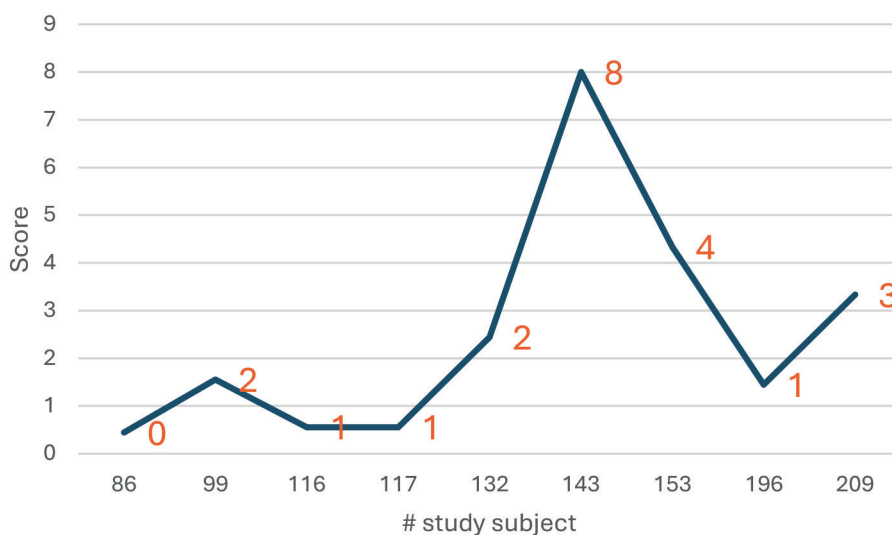


Figure 5. Physical dependence in daily smokers: Fagerström test results

TABLE 5. Distribution of frequencies for smoking the first cigarette of the day and difficulty smoking in restricted areas

Do you find it difficult not to smoke in places where it is prohibited (e.g., movie theaters)?	How long does it take for you to smoke your first cigarette of the day after waking up?	Frequency	Percentage
No	6-30 min	3	37.500
	mayor de 60 min	5	62.500
	menor de 5 min	0	0.000
	Ausente	0	0.000
Yes	6-30 min	0	0.000
	mayor de 60 min	0	0.000
	menor de 5 min	1	100.000
	Ausente	0	0.000

considered smoking a bad habit, while 29% of healthcare professionals viewed tobacco use as a chronic disease. However, 9% of people surveyed believe that tobacco consumption is not harmful to health.

The study also revealed that 77.78% of participants (7 out of 9) have attempted to quit smoking at least once, reflecting a strong motivation to quit this bad habit. Regarding the frequency of cessation attempts, it was found that 14.29% of respondents attempted to quit twice; 28.57% tried three times, and 57.14% (4 out of 7) have attempted to quit smoking five or more times.

This last finding suggests that, although these individuals show strong persistence, they also face significant barriers to achieving successful cessation. These challenges may be related to factors such as nicotine dependence or the lack of adequate professional support.

When analyzing the type of support received during cessation attempts, 71.43% of smokers tried to quit on their own, without seeking help from healthcare professionals. In contrast, the remaining 28.57% sought professional support during their attempts; this group mainly consisted of people who had made five or more attempts.

Regarding the use of pharmacological treatments, it was observed that 71.43% (5 individuals) of those who attempted to quit did not use medication, and all those attempts were made without professional support. On the other hand, 28.57% (2 individuals) who used medication for cessation did so under the supervision of a healthcare professional.

When asked about their intention to quit smoking, 73% of respondents expressed a strong desire to quit, 60% planned to do so within the next six months, and 53% within the next 15 days.

DISCUSSION

Smoking is a major public health issue. In Ecuador, 15 people die each day due to tobacco consumption. 13% of the population aged 18 to 69 are smokers, with a higher prevalence among men (23%) than women (4%). Additionally, 3 out of 10 adolescents between the ages of 13 and 15 have smoked at least once in their lives.⁵

This study found that nearly 20% of the studied population were smokers or former smokers, a significantly lower percentage compared to the study conducted by Juranik et al,⁶ where 35% of respondents were active smokers and 5.8% were former smokers. When compared to another study conducted in the province of Azuay by Sánchez and Lisanti, which reported a smoking prevalence of 32%, our study still reflects a lower percentage. The low prevalence of tobacco consumption is one of the most encouraging findings of our study, especially when compared to data from Latin America, with a study conducted in Argentina⁷ among medical students and graduates which reported 27% of smokers and 52% of former smokers. However, the prevalence of tobacco use in two similar studies conducted in Spain was 11.7% in a 2015 study on primary care health professionals, medical specialists, and nursing staff, and 6% in a 2023 study on members of the Spanish Society of Pulmonology and Thoracic Surgery. This suggests that Spanish healthcare professionals are beginning to serve as role models for society as non-smokers.

Surprisingly, in our study, the prevalence of smoking among physicians was higher than among administrative staff. This may seem unlikely, as physicians should set an example for their patients and be fully aware of the health risks associated with tobacco use. Published data from Casals et al¹⁰ show the following smoking rates for healthcare

professionals in Catalonia: more than one third of nurses (35.1%), nearly one-quarter of physicians (24.5%), and one-fifth of pharmacists (20.4%) are smokers. The literature suggests that disadvantaged populations smoke more than others. To some extent, doctors may also be considered a disadvantaged group due to their cumulative risk factors for smoking. They face a heavy workload, often exceeding 40 hours per week. This excessive stress can even contribute to depressive disorders, which are also risk factors for smoking. Additionally, many doctors work night shifts, disrupting their circadian rhythm, which may further increase smoking behavior. A study by Donovan¹¹ revealed that nurses working in psychiatric care (47.4%) and coronary care (33.3%) have the highest smoking rates. Therefore, we suggest promoting healthy habits such as maintaining a balanced diet, engaging in regular physical activity, and ensuring sufficient sleep for the purpose of managing the anxiety inherent in the medical profession and contributing to overall well-being.¹⁰⁻¹³

According to specialized literature, most smokers adopt this habit before the age of 20. In our sample, 56% of smokers started smoking between the ages of 15 and 19, a finding similar to that of Sánchez⁴ and Minervini.¹⁴

Although the overall prevalence of smoking has declined in recent years in several countries, as shown by Ranchal¹⁵ who documented a 53.4% decrease in smoking rates between 1986 and 2016, partly due to stricter legislative measures, 9% of our respondents still consider tobacco to be harmless to health. This perception, also observed by Pold,¹⁶ indicates that male smokers were six times more likely to agree that smoking is not as dangerous as experts claim and seven times more likely to believe that smoking does not harm a person's health if the person maintains a healthy lifestyle.

If we consider tobacco dependence, more than half of smokers—56%—light their first cigarette more than an hour after waking up. Overall, respondents showed low scores on the Fagerström test, indicating a mild physical dependence on nicotine. These findings are very similar to those observed in a study conducted on nursing staff by Schottlender¹⁷ et al. When compared to a study conducted within the Spanish Society of Pulmonology and Thoracic Surgery, published by Solano et al,¹⁸ 69% of participants reported smoking their first cigarette more than an hour after waking

up—a higher percentage compared to our study. This difference may be due to the fact that thoracic specialists have greater knowledge about this topic and place significant importance on serving as role models for the general population by being non-smokers.

Based on these results, measures should be developed to reinforce smoking bans in the workplace, provide education and training on tobacco use and cessation, and offer intensive support and treatment options for those who wish to quit. Such intervention would be very timely, as a large proportion of participants expressed a strong desire to quit smoking in the near future.

CONCLUSIONS

The analysis of smoking prevalence among Axxis Hospital workers reveals important findings. Although the actual smoking prevalence stands at 8.3%—a percentage that may be considered low compared to the general population (11.5%)—it remains high for a healthcare workforce that should exhibit lower consumption due to their role as behavioral models for their patients. It is concerning that tobacco use persists even within a group that is expected to promote healthy habits.

Since healthcare professionals play a crucial role in the process of smoking cessation—both as advisors and role models for the population—it is essential to continuously assess their habits and attitudes toward tobacco. Despite the low tobacco dependence and strong desire to quit smoking observed in this group, we believe it is imperative to keep emphasizing the reduction of tobacco use among healthcare professionals, who should lead by example in promoting healthy lifestyles.

To conclude, although smoking prevalence among Axxis Hospital workers is low, it is necessary to continue promoting initiatives to further reduce tobacco consumption among healthcare professionals, given their responsibility and key role in public health.

Conflict of interest

The authors of this work have no conflicts of interest to declare in relation to this publication.

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