

# Examining Smoking Patterns Among Medical Doctors in a Central Portuguese Hospital: A Comparative Cross-Sectional Analysis of Changes Over 15 Years

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## Abstract

**Introduction:** Tobacco dependence remains a global healthcare concern, and the attitude of healthcare professionals toward smoking plays a pivotal role in long-term prevention and smoking cessation programs.

**Objectives:** This study aims to analyze the smoking habits of medical doctors in a central Lisbon hospital in 2014, comparing the results between medical and surgical specialties. The findings are also compared with a similar study conducted in 1999.

**Design and Setting:** A voluntary and anonymous questionnaire was distributed to all physicians over 4 months, covering sociodemographic data, smoking habits characterization, attitudes toward smoking, the significance attributed to the smoking cessation program in the hospital, and awareness of the 2008 country law.

**Participants:** All medical doctors working in the central hospital between January 1, 2014, and June 30, 2014.

**Outcome Measures:** Primary outcome measures included characterizing the smoking habits of medical doctors. Secondary outcomes involved comparing results between surgical and medical groups and with those obtained in a similar 1999 study.

**Results:** Out of 423 distributed surveys, 171 responses were obtained, with a female predominance (58.6%). The response rate increased from 19.0% in 1999 to 40.4%. While the prevalence of smokers among doctors decreased overall in 2014 (21.0% vs. 14.6%), there was a significant increase in female smokers (35.0% to 52%). Knowledge of the ban on smoking in public places was universal. The medical group had more responders (48.9% vs. 29.5%) but also more smokers (16.8% vs. 6.1%), with a higher degree of dependence (4.6 vs. 3.2) and more attempts to quit smoking (56.0% vs. 50.0%).

**Conclusion:** Understanding the smoking habits of medical professionals helps identify risk groups in the hospital and informs the development of more specific and effective smoking cessation strategies for the future.

**Keywords:** Tobacco dependence; Premature mortality; Smoking cessation; Occasional smoker

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## Introduction

Tobacco use stands as a leading cause of preventable morbidity, disability, and premature mortality, exerting a considerable burden on healthcare services worldwide. According to the World Health Organization (WHO), smoking claims nearly 6 million lives annually, equating to one person every six seconds, with 6% and 12% of all female and male deaths attributed to this habit [1-3].

The global concern for tobacco dependence underscores its significance in healthcare, necessitating active involvement from professionals in smoking prevention within their daily practice [2-7]. Previous research has emphasized the critical role of healthcare professionals' attitudes toward smoking in shaping effective, long-term prevention and cessation programs [3-9].

In Portugal, stringent regulations on smoking in enclosed public spaces have been in force since 2008. In 2010, tobacco-related fatalities in the country reached 11,800. By 2012, over a quarter of the population aged 15 to 64 were tobacco consumers [4-12]. Most Portuguese individuals initiate smoking between the ages of 12 and 20, influenced by peers, curiosity, and a willingness to experiment. Recent data signal a rise in tobacco use among school students, emphasizing the need for monitoring and reversal of this trend. Despite this, smoking is not universally perceived as a serious health risk in Portugal. These facts underscore the imperative to invest in robust prevention and control measures for this significant national public health issue [3-17].

Healthcare professionals who smoke may exhibit less sensitivity toward promoting smoking cessation measures in their patients, often adopting a more passive stance toward the dependence problem. Studies indicate that as smoking rates decline among physicians, a similar reduction is anticipated in the general population. Recent data reveal a higher prevalence of smokers in surgical specialties, highlighting the need for targeted interventions [1-17].

This study aims to estimate smoking prevalence among medical doctors at Hospital Egas Moniz (Centro Hospitalar Lisboa Ocidental), Portugal, in 2014. It seeks to characterize their smoking habits, comparing medical and surgical specialties, and compares the results with a similar study conducted in 1999 under comparable conditions.

## Material and Methods

This observational study was conducted at Hospital Egas Moniz, part of Centro Hospitalar Lisboa Ocidental, which includes Hospital São Francisco Xavier and Hospital Santa Cruz. Data were collected exclusively at Hospital Egas Moniz to maintain consistency with a previous 1999 study and allow for meaningful data comparison.

Collaborating with the hospital's chief directors, a voluntary and

anonymous paper-format tobacco questionnaire was distributed to all physicians across 26 specialties (19 medical specialties and 8 surgical specialties). Data collection occurred over four months, starting in March 2014 and concluding in June. The study encompassed all medical doctors, totaling 423 in 2014 and 214 in 1999, as confirmed by the human resources department after obtaining Ethics Committee approval. All aspects of medical confidentiality were strictly upheld [15-17].

The questionnaire covered smoking habits, attitudes toward smoking, awareness of the 2008 country law, and the importance attributed to the smoking cessation program existing in the hospital. Occasional smokers were defined as those who consumed tobacco only in social circumstances, but this definition was not explicitly included in the questionnaire. The Fagerström Test assessed nicotine dependency among smokers and occasional smokers, while motivation to quit smoking was evaluated using the Richmond Test.

The study adopted the same data collection method employed in 1999, allowing for a comparative analysis of results within the same hospital. Statistical analysis was conducted using IBM SPSS Statistic 23.0 for MAC OS X, employing the Student's T test for group comparisons and the Chi-square test for categorical variables. Statistical significance was accepted at  $p < 0.05$ . The authors remained available throughout the study period to address any queries related to the questionnaire.

## Results

In 2014, out of the 423 surveys distributed, 171 responses were obtained, yielding a response rate of 40.4%. Among respondents, 58.6% were women, and 43.6% were aged 40 years and above. The average age to start smoking in 2014 was 19.9 years. Universal awareness (100.0%) of the ban on smoking in public places was observed, regardless of smoking status or socio-demographic profile. The prevalence of smokers in 2014 among medical professionals was 14.6%, with a slight female predominance (52.0%). Cigarettes were the preferred method of smoking (92.0%). Never-smokers constituted 74.2%, also with a female predominance but a slightly lower average age (41.2 vs. 44.7 years). The primary reasons cited for starting smoking were social life (24.0%), work stress (22.0%), and other reasons (54.0%) (Table 1). Among smokers, 56.0% attempted to quit, but only 8.0% sought medical support. While all considered the Smoking Cessation Hospital Program important, only 44.0% expressed a desire to attend it [18].

A comparison between medical ( $n=131$ , 61.8%) and surgical ( $n=49$ , 38.2%) specialties in 2014 revealed a higher response rate in medical specialties (48.9% vs. 29.5%). Gender prevalence significantly differed by specialty ( $p < 0.05$ ), with a higher percentage of females in medical specialties (58.0%) and males in surgical specialties (59.2%). The onset age for smoking habits was

**Table 1:** Comparing the smoking habits of Hospital Egas Moniz between 1999 and 2014.

Study Year	1999			2014			P-Value
Response Rate	19%			40.40%			*0.021
Smokers	21%			14.60%			0.561
	Female	Male		Female	Male	-	
	35%	65%		52%	48%	-	
Occasional Smokers	6%			2.40%			0.689
Ex-Smokers	29%			8.80%			0.321
No-Smokers	44%			74.20%			0.193
Nicotine Dependence (Fagerstron test)	Low	Medium	High	Low	Medium	High	-
	10%	55%	35%	64%	24%	12%	-
Motivation for cessation (Richmond Test)	Low	Medium	High	Low	Medium	High	-
	34%	49%	17%	51%	30%	19%	-
*: Significant at 0.05.							
P-Values correspond to the comparison of the two categories: 1999 and 2014 group by indicators of compliance using the Pearson's Chi-Square Test.							

higher among the surgical group (20.3 vs. 19.8 years,  $p < 0.05$ ). The medical group had more smokers (16.8% vs. 6.1%), with a higher degree of dependence (4.6 vs. 3.2) and more attempts to quit smoking (56.0% vs. 50.0%).

The percentage of non-smokers was comparable in both medical and surgical groups (74.6% vs. 80.3%). Surgical specialties exhibited a higher rate of ex-smokers (10.2% vs. 7.4%,  $p < 0.05$ ). While both groups considered the Smoking Cessation program important, only 36.0% of doctors in medical specialties and 48.0% in surgical specialties expressed a willingness to attend it.

Among the specialties with the highest smoking prevalence were Pathology (23.4%), Endocrinology (16.8%), Internal Medicine (16.8%), and Psychiatry (10.4%).

Comparing 2014 to 1999, the response rate increased from 19.0% to 40.4% ( $p < 0.05$ ). The percentage of smokers decreased from 21.0% to 14.6%, with a reversal in gender prevalence (35.0% female smokers in 1999 to 52.0% in 2014). Occasional smokers decreased (6.0% vs. 2.4%), ex-smokers decreased (29.0% vs. 8.8%), but never-smokers increased (44.0% vs. 74.2%). Nicotine dependence was lower in 2014 (64.0% with low dependence vs. 10.0% in 1999), but motivation for smoking cessation was also lower in 2014 (51.0% vs. 34.0%) [19].

## Discussion

The prevalence of smokers among physicians at Hospital Egas Moniz in 2014 was 14.6%, lower than the national prevalence in Portugal for the same year (estimated at 25.0%) and lower than observed in 1999 (21.0%). Universal awareness of Portuguese smoking legislation was reported by all physicians, suggesting a positive impact on tobacco control.

Although the response rate to the questionnaire was low, the personalized follow-up by the authors likely contributed to an increase from 19.0% in 1999 to 40.4% in 2014. The observed significant increase in female smokers (35.0% in 1999 to 52.0% in 2014) emphasizes the need for increased attention and preventive measures for this specific group.

In 2014, the average starting age for smoking was 19.9 years, with a majority having a low degree of nicotine dependence (64.0%). However, motivation for smoking cessation was lower in 2014 (51.0%) compared to 1999 (34.0%). While all smokers considered the Smoking Cessation Hospital Program important, only 44.0% expressed a desire to attend it. Additionally, only 8.0% of those attempting to quit sought medical help, highlighting the need for enhanced cessation support for healthcare providers [11-19].

Analyzing medical and surgical specialties, surgical specialties exhibited a higher response rate, more male prevalence, a higher onset age for smoking, and lower smoking prevalence. Both groups considered the Smoking Cessation program important, but a lower percentage expressed a willingness to attend medical specialties (36.0% vs. 48.0%).

## Conclusion

The study reveals a decrease in smoking prevalence among medical doctors between 1999 and 2014, suggesting the positive impact of anti-smoking legislation and other strategies. The observed increase in female smokers and the lower motivation for smoking cessation in 2014 indicate the need for targeted interventions, particularly for women.

Understanding the smoking habits of healthcare professionals helps identify risk groups, and the results underscore the

importance of establishing specific and effective smoking cessation strategies for the future. The study highlights the necessity for attitudinal changes among health professionals to achieve tobacco eradication.

## Conflict of Interest

No conflicts of interest have been declared.

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