


Research Article

# Study of Knowledge, Attitudes and Practices Related to Smoking Among Health Professionals in Public Hospitals in the Department of Dakar in 2021

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## Abstract

**Introduction:** In Senegal, previous studies showed a prevalence of smoking among health professionals of between 11.6 and 12.8%. The general objective was to study smoking among health professionals in public hospitals in the department of Dakar. This was a cross-sectional study with a descriptive and analytical aim, the data collection phase of which took place from October 11 to November 23, 2021. The study population consisted of medical and paramedical staff. We collected 262 cases, i.e. a non-participation rate of 12.67%. **Results:** The average age of the health workers surveyed was 28.19 %. There were 148 men women with a sex ratio of 1.30. Thus, 68.3% were single. During our study, the health workers at Abass NDAO Hospital were 110 (42%), 80 (30.5%) at the Principal Hospital in Dakar and 72 (27.5%) at HOGGY. The majority of the workers surveyed (69 cases, 26.3%) were DES or 7th year medical students. The least represented professional category was that of nursing assistants. Thus, 3.4% of the health workers surveyed were current tobacco users compared to 10.2% (26 health workers) who were former users. The average age at which these workers first used tobacco was  $16.5 \pm 2.5$  years. Within the study population, 86% (225 workers) had never used tobacco. Smoked tobacco was the only form used by the subjects surveyed. The average consumption of smoked tobacco was  $3.5 \pm 0.51$  times per day. However, the last attempt to quit was more than a year ago for the majority (5/7) of consumer health workers. The main reason for this attempt (failed) was awareness of the dangers of tobacco consumption (5/7). The main reason (05/07) that justified their tobacco consumption was stress management. All the workers surveyed were unanimous on the dangers of tobacco consumption on health. The consequences of tobacco most cited by the health workers surveyed were lung cancer (224 responses or 85.5% of respondents), COPD (205 or 78.24%) and strokes (165 or 62.98%). Male health workers were more likely to have good knowledge about smoking than female health workers. The agents thus surveyed had for 73.7% (i.e. 193 people) of them an insufficient or weak attitude towards smoking. **Conclusion:** At the end of our study and in light of the conclusions reached, we make the following suggestions to the health authorities: To organize communication-education sessions during World Tobacco Day.

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## Keywords

Smoking, Knowledge, Attitudes, Practices, Professionals, Health

## 1. Introduction

Smoking has been a major public health problem for several years. Worldwide, nearly 1.3 billion people consume tobacco, more than 80% of whom live in low- and middle-income countries. In Senegal, according to the results of the GATS survey, half a million (6.0%) adults consume tobacco products, with 11% of men compared to 1.2% of women. Smoking tobacco remains the main form of consumption with a proportion of 5.4% who smoke [1]. This form of consumption is highest among people aged 45-64 (8%) and those aged 25-44 (6.7%). Among these smokers, 4.9% smoke daily compared to 0.5% who are occasional smokers. Smoking initiation occurs early, before the age of 15, especially in rural areas (36.7%) compared to 15.9% in urban areas. The average cigarette consumption is 9.4 cigarettes per day among daily users [2]. Few surveys have been initiated to assess the phenomenon of smoking in hospitals in general and among health professionals in particular in view of their importance in the fight against tobacco. According to a study carried out in four large hospitals in Dakar in 2007, the prevalence of smoking among professionals was 12.8%. Paramedical staff smoked more than doctors (14% against 12.2%). The average age of smokers was 37.4 years with an early initiation to smoking [3]. This practice has several health consequences for consumers. Indeed, several noble organs are altered, the severity of which is proportional to the quantity consumed and the number of years of consumption. Tobacco would kill one smoker in two with a mortality rate higher than that of all other diseases. It is thus the first preventable cause of mortality in the world [2]. Tobacco causes more than 8 million deaths each year, including around 1.2 million involuntary non-smokers (passive smoking). Tobacco consumption is a risk factor for the occurrence of non-communicable diseases (NCDs) (hypertension, cancers, etc.), the treatment of which is expensive (for states and individuals) [4].

Several factors influence tobacco consumption. According to a study conducted in Senegal in 2015, the initiating factors for smoking among health professionals were mainly the search for pleasure (41.2%) and the influence of those around them (36.5%) [3]. In Casablanca, a study conducted on smoking in hospitals in 2002 revealed that 63.7% of smokers justified this habit by the search for pleasure [5]. It seems obvious that the data currently available on smoking among health workers in Senegal is obsolete. Added to this is the need for information on the real motivations and the various direct and indirect factors influencing this practice within this category of workers. In order to carry out this study, the

conceptual framework below was developed presenting the different aspects and components taken into account.

### 1.1. Hypotheses of the Study

In view of the scientific work carried out on the issue of smoking among health professionals in Africa in general and in Senegal in particular, the hypotheses of this study are as follows:

1. The prevalence of tobacco use among healthcare professionals remains high;
2. Working conditions significantly influence tobacco consumption among these professionals.

### 1.2. Objectives of the Study

The general objective is to study smoking among health professionals in level 3 public hospitals in the department of Dakar. More specifically, it will involve:

- 1) Determine the prevalence of smoking among health professionals;
- 2) Determine the smoking habits of smoking subjects;
- 3) Assess the level of knowledge of health professionals on smoking;
- 4) Assess the attitude of health professionals towards smoking;
- 5) To determine factors associated with smoking among healthcare professionals.

### 1.3. Type of Study

This was a cross-sectional study with analytical aims, the data collection phase of which took place from October 11 to November 23, 2021.

### 1.4. Study Population

The study population consisted of primary targets (medical and paramedical staff from selected health facilities) and secondary targets.

Primary targets

Medical staff: The study took into account general practitioners, specialist physicians and interns.

Paramedical staff: The study included laboratory staff, radiology department staff, nurses, midwives and nursing assistants.

Secondary targets

The general directors of health facilities, The managers of the hospital hygiene service of health facilities.

Inclusion criteria: were included in the study, medical and paramedical staff working in the emergency, surgery, pulmonology, cancerology and maternity departments in the selected health facilities, the general directors of the said health facilities, the managers of the hospital hygiene service of the health facilities included in the study.

Non-inclusion criteria:

Anyone who did not give their free and informed consent was not included in the study.

## 1.5. Sampling Methods and Techniques

Several sampling methods and techniques were used depending on the study targets. The health facilities considered in this study are level 3 public health establishments. The DAKAR department has six (06). Three public health establishments (i.e. 50% of the total workforce) among the six (06) were selected by simple random choice. These were the Abass NDAO Hospital Center (CHAN), the Dakar Main Hospital (HPD) and the Grand Yoff General Hospital (HOGGY).

The medical and paramedical staff of these establishments were selected by a non-probabilistic method through the technique of volunteering. The services concerned are emergency, surgery, pulmonology, maternity, the biomedical analysis laboratory and radiology.

Data collection techniques and tools

To collect quality data from the study targets, questionnaire survey and interview techniques were used.

## 2. Results

### 2.1. Overall Results

#### 2.1.1. Epidemiological Data

Out of a total of 300 survey forms distributed, 262 reached us and were retained, representing a non-participation rate of 12.67%. The average age of the health workers surveyed was 28.19 4.972 years with extremes of 20 and 52 years. Our population consisted of men (148) and women (114) with a sex ratio of 1.30.

#### 2.1.2. Knowledge of Health Professionals About Smoking

All the agents surveyed were unanimous on the dangers of tobacco consumption on health. However, 85.8% of them were unable to give at least half of the correct answers concerning the consequences on the health of consumers. The date of World No Tobacco Day was not known by 80.9% of the agents surveyed. Table 1 presents the distribution of the participants in the study according to their knowledge of smoking.

**Table 1.** Distribution of the 262 health workers surveyed according to their knowledge of smoking.

Variable	Effective	Percentage (%)
Smoking is acute or chronic intoxication caused by the consumption of tobacco.		
Yes*	256	97.7
No	6	2.3
Tobacco causes strong addiction among consumers through the substances it contains.		
Yes*	260	99.2
No	2	0.8
Tobacco consumption is dangerous for health		
Yes*	262	100
No	0	0
Smoking reduces a smoker's life expectancy by at least 10 years compared to non-smokers		
Yes*	221	84.4
No	41	15.6
Tobacco use leads to cardiovascular complications		
Yes*	261	99.6
No	1	0.4
Health consequences of tobacco consumption		
At least 06 answers*	37	14.1
Less than 06 answers	225	85.8
There are laws that prohibit smoking in hospitals.		
Yes*	206	79.5
No	53	20.5
To help a person stop smoking, psychological intervention is enough.		
Yes	70	26.7
No*	192	73.3
Quitting smoking is frequently associated with temporary discomfort among users.		
Yes*	225	86.2
No	36	13.8
When is World No Tobacco Day each year?		
May 31*	50	19.1
Other date or "don't know"	212	80.9

The sign (\*) in the table to indicate the correct answers to be considered in determining the level of knowledge

## 2.2. Analytical Results

### 2.2.1. Factors Associated with the Level of Knowledge About Smoking

The level of knowledge of the agents surveyed in this study depended on factors such as gender, age, having a close relative who uses tobacco, medical history, work site, qualifica-

tion, number of years of experience and number of hours worked per day. Male health workers were more likely (OR=7.7 with p-value=0.000) to have good knowledge about smoking than female health workers. Table 2 presents the factors associated with the level of knowledge of agents about smoking.

**Table 2.** OR, confidence interval and significance of factors at the level of knowledge of health workers on smoking.

Variable	GOLD	95% CI	p-value
Sex			
Masculine/Feminine	7.7	4.6; 12.8	0.000
Age	1.09	1.07; 1.10	0.000
Having an immediate relative who uses tobacco			
Yes/no	15.05	7.55; 19.24	0.000
No medical history			
No/yes	26.67	8.42; 84.44	0.000
Work site			
Abass Ndao/HOGGY	6.86	3.91; 12.01	0.000
HPD/HOGGY	19	6.95; 52	0.000
Qualification			
General practitioner/nursing assistant	14.5	3.46; 60.77	0.000
Specialist doctor/Nursing assistant	-	-	0.980
DES or 7th year/Nursing assistant	10.5	4.54; 24.26	0.000
Nurse/Caregiver	18.33	5.74; 58.60	0.000
Midwife/Nursing assistant	25	3.38; 184.5	0.002
Laboratory technician or biologist/nursing assistant	6.25	2.17; 17.96	0.001
Medical Imaging Technician/Assistant Caregiver	2.33	0.90; 6.07	0.08
Number of years of experience in the position	2.86	2.27; 3.60	0.000
Number of working hours per day	1.37	1.29; 1.56	0.000

### 2.2.2. Factors Associated with the Attitude of Agents Towards Smoking

The attitude of the workers surveyed in this study depended on factors such as gender, age, having a close relative who smokes, medical history, work site, qualification, number of years of experience and number of hours worked per day.

Male health workers were more likely (OR=2.08 with p-value=0.000) to have good attitudes towards smoking than female health workers.

Table 3 presents the factors associated with agents' attitudes towards smoking.

**Table 3.** OR, confidence interval and significance of factors associated with health workers' attitude towards smoking.

Variable	GOLD	95% CI	p-value
Sex			
Masculine/Feminine	2.08	1.48; 2.94	0.000
Age	1.03	1.02; 1.04	0.000
Having an immediate relative who uses tobacco			
Yes/no	2.70	2.04; 3.58	0.000
No medical history			
NO /YES	2.77	1.7; 4.5	0.000
Work site			
Abass Ndao/HOGGY	3.23	2.08; 5.02	0.000
HPD/HOGGY	2.48	1.53; 4.02	0.000
Qualification			
General practitioner/nursing assistant	0.93	0.46; 1.89	0.866
Specialist doctor/Nursing assistant	2.2	0.76; 6.32	0.140
DES or 7th year/Nursing assistant	3.31	1.89; 5.79	0.000
Nurse/Caregiver	4.27	2.22; 8.24	0.000
Midwife/Nursing assistant	3.33	1.34; 8.30	0.001
Laboratory technician or biologist/nursing assistant	2.62	1.16; 5.93	0.002
Medical Imaging Technician/Assistant Caregiver	3	1.09; 8.25	0.030
Number of years of experience in the position	1.31	1.18; 1.46	0.000
Number of working hours per day	1.12	1.08; 1.12	0.000

### 2.2.3. Factors Associated with Smoking Among Healthcare Professionals

Smoking among the agents surveyed in this study depended on factors such as gender, age, having an immediate relative who consumes tobacco, medical history, work site, qualification, number of years of experience and number of hours

worked per day. Having an immediate relative who consumes tobacco (OR = 0.01 with p-value = 0.000) reduces the agent's susceptibility to consume it.

Table 4 presents the factors associated with smoking among health workers.

**Table 4.** OR, confidence interval and significance of factors associated with smoking among health workers.

Variable	GOLD	95% CI	p-value
Sex			
Masculine/Feminine	0.05	0.02; 0.106	0.000
Age	0.89	0.87; 0.91	0.000
Having an immediate relative who uses tobacco			

Variable	GOLD	95% CI	p-value
Yes/No	0.01	0.002; 0.33	0.000
No medical history			
NO /YES	0.08	0.03; 0.18	0.000
Work site			
Abass Ndao/HOGGY	0.02	0.01; 0.08	0.000
HPD/HOGGY	0.04	0.01; 0.12	0.000
Qualification			
General practitioner/nursing assistant	-	-	0.999
Specialist doctor/Nursing assistant	-	-	0.999
DES or 7th year/Nursing assistant	0.02	0.002; 0.11	0.000
Nurse/Caregiver	0.02	0.002; 0.13	0.000
Midwife/Nursing assistant	0.08	0.02; 0.35	0.001
Laboratory technician or biologist/Assistant	0.16	0.06; 0.46	0.001
Caregiver			
Medical Imaging Technician/Caregiver	0.053	0.007; 0.39	0.004
Number of years of experience in the position	0.2	0.14; 0.29	0.000
Number of working hours per day	0.66	0.60; 0.72	0.000

### 2.3. Multivariate Analysis

Following the multivariate analysis, the factors identified associated with smoking among the health professionals surveyed were the work site and qualification as shown in Table 5.

**Table 5.** Factors associated with smoking among healthcare professionals from the final multiple logistic regression model.

Variable	GOLD	95% CI	p-value
Work site			
Abass Ndao/HOGGY	0.1	0.02; 0.46	0.003
HPD/HOGGY	0.41	0.09; 2.10	0.300
Qualification			
General practitioner/nursing assistant	-	-	0.999
Specialist doctor/Nursing assistant	-	-	0.999
DES or 7th year/Nursing assistant	0.03	0.004; 0.26	0.001
Nurse/Caregiver	0.04	0.004; 0.27	0.001
Midwife/Nursing assistant	0.31	0.05; 1.89	0.206
Laboratory technician or biologist/nursing assistant	0.33	0.1; 1.07	0.007
Medical Imaging Technician/Assistant			
Caregiver	0.17	0.02; 1.55	0.117



### 3. Discussion

The prevalence of tobacco use among health workers surveyed in this study (2021) is 3.4%. This rate was 11.6% in 2004 from the study by Toure et al. [6] on medical and paramedical staff in Fann, Senegal. It is interesting to note that during our work, we identified that 10.6% of the people surveyed were smokers a year ago or more compared to 13.3% obtained in 2004 [6]. These figures are similar to those obtained (11.7%) by a study conducted by researchers in Spain in 2015 [7]. However, studies such as the one conducted in 2016 in Cyprus reveal higher prevalences (28.2% of health workers) [8]. This difference in results could be explained by the sample size, the sites considered and the period. However, this observed decrease in prevalence would not systematically mean an overall decrease in tobacco consumption among health workers. If this were the case, this progress remains salutary and could be explained by several reasons, mainly the improvement in the level of knowledge and political commitment in the fight against smoking (an increase in the fight in Senegal in recent years).

In addition, the average age of onset of tobacco use during the study conducted in 2004 at the CHN of Fann in Senegal was 15.3 years while in the present study (2021), the average age of consumption is 16.5 years. Other studies have revealed a higher average age of onset of tobacco use reaching  $21.1 \pm 5.1$  years as obtained by a study conducted in 2018 among health professionals in Palestine [9]. Each of these studies was conducted with the sociocultural characteristics specific to each country. This could justify this notable difference. The precocity of initiation of tobacco use in Senegal compared to other countries such as Palestine is a great concern. The attitude of health workers towards smoking is linked to gender, age, medical history of a relative, work site, level of qualification, number of years of experience per day. Thus, health workers who had close relatives who used tobacco were more likely to have good knowledge ( $OR=15.05$ ;  $p\text{-value}=0.000$ ), good attitudes ( $OR=2.70$ ;  $p\text{-value}=0.000$ ) and conversely less likely to use tobacco ( $OR=0.01$ ;  $p\text{-value}=0.000$ ). These results are also contrary to those obtained by the study conducted in 2016 in Cyprus which revealed that people who had a close relative who used tobacco were three times more likely to indulge in tobacco use ( $OR=3.03$ ;  $p\text{-value}=0.000$ ) [8]. As for age, the older the health workers surveyed were, the more likely they were to have good knowledge ( $OR = 1.09$ ;  $p\text{-value} = 0.000$ ) and good attitudes ( $OR = 1.03$ ;  $p\text{-value} = 0.000$ ) towards smoking. At the same time, the tendency to consume tobacco decreased ( $OR = 0.89$ ;  $p\text{-value} = 0.000$ ). On the other hand, according to the study conducted in Palestine in 2018, the more the age increased among health workers, the more they were inclined to consume tobacco. Health workers over 45 years old were seven (07) times more likely to consume tobacco than those under 25 years old [9]. In the same order

of the results of our study, the GATS survey revealed that the consumption of smoking tobacco was the highest among 45-64 year olds (8.0%) but also among 25-44 year olds (6.7%) [5]. Unfortunately, few studies in Senegal exist on the factors associated with smoking among health workers to allow the comparison of results. However, these results obtained by the present study (which will serve as basic data for future studies and the planning of future policies) thus reveal characteristics specific to the context of Senegal that should be taken into consideration in the different strategies and policies to fight tobacco. Several studies like ours have revealed differences in consideration of smoking among health workers according to their qualification [10, 11].

### 4. Conclusion

This study ultimately revealed that the significant factors that determine smoking among the health workers surveyed were the workplace and qualification. These results thus provide initial guidance when it comes to identifying the relevant levers in the fight against smoking in hospitals in general and among health professionals in particular.

### Abbreviations

GATS    Global Adult Tobacco Survey

### Author Contributions

**Papa Gallo Sow:** Conceptualization, Formal Analysis, Methodology, Project administration, Writing – original draft

**Assane Diop:** Investigation, Methodology, Validation

**Boubakcar Gueye:** Methodology, Project administration

**Martial Coly Bop:** Formal Analysis, Methodology, Project administration, Validation

**Aboubakry Dramé:** Conceptualization, Formal Analysis, Methodology, Supervision

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### Conflicts of Interest

The authors declare no conflicts of interest.

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