

Active Screening and Smoking Cessation Assistance for Patients at the Yalgado Ouédraogo University Hospital Center of Ouagadougou

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Abstract

Introduction: In Burkina Faso, hospital studies on smoking and smoking cessation are few and far between, despite the fact that smoking-affected patients with serious pathologies need treatment both for their pathologies and for smoking. The aim of the study was to screen for smoking and factors associated with smoking cessation in the pneumology, cardiology and neurology departments of the CHU-YO.

Methods: This was a descriptive and analytical cross-sectional study with prospective collection of outpatients and inpatients from March 27, 2023 to May 25, 2023 in these three departments of the CHU-YO. Data were analyzed using EPI INFO software version 7.2.5.0.

Results: A total of 2523 patients were interviewed and 198 of them were included, representing a hospital smoking prevalence of 7.2%. Among them, 20.3% were ex-smokers, 31.9% (48/) current smokers, and 47.8% former smokers. The average age of smoking initiation was 25 ± 11.2 years with ranges from 10 to 65 years and the average duration of smoking was 24.8 ± 16.6 years. Among current smokers, 57.9% had a moderate dependence on cigarettes according to the Fagerström score. The pathologies most encountered in these patients depending on the services were hypertension (27.3%), stroke (9.3%) and tuberculosis (5.6%). The Richmond motivation score showed that our patients had good motivation (37.9%) and they explained their desire to quit by the desire to be in good health. The factors associated with smoking cessation were other associated substances and hypertension.

Conclusion: This study shows that we need to continue and reinforce awareness-raising and multidisciplinary management.

Keywords: Screening; Tobacco; Dependence; Motivation; Smoking Cessation

Introduction

Smoking is the regular use of tobacco and its products, leading to intoxication and dependence [1]. On a global scale, smoking is the leading cause of preventable death. Its prevalence was 1.3 billion people in 2020, of which 80% came from developing countries [2]. Indeed, tobacco consumption has increased due to the rise in demand and the favorable regulatory environment in these countries [3]. In

Burkina Faso, the prevalence of smoking was 13.6% according to the 2021 STEPS survey [4]. In order to reduce tobacco consumption, the country participated in the Framework Convention on Tobacco Control (FCTC) of the World Health Organization, which was adopted in 2006 [5]. Article 5b of this convention, which addresses the need to build anti-tobacco infrastructure, was implemented in Burkina Faso through the creation of the tobacco cessation support unit, operational since July 17, 2017 [6]. The pathologies directly attributable to smoking are cardiovascular, respiratory, and neurological diseases. For greater effectiveness, society as a whole must commit to the fight against tobacco. And within society, a professional group must play a distinct role, as it operates in a particular sector: that of health [2]. However, few healthcare professionals inquire about smoking habits in patients in order to initiate immediate care.

Aim of the Study

We are conducting this work with the aim of providing comprehensive care for smoking patients received in the pulmonology, cardiology, and neurology departments of the Yalgado Ouédraogo University Hospital Center in Ouagadougou, and from there, the rest of the countries.

Patients and Study Methods

The study and data collection framework

Our study was conducted at CHU Yalgado Ouédraogo in the departments of pulmonology, cardiology, and neurology.

The type and period of the study

It was a cross-sectional study with descriptive and analytical aims that took place from March 27 to May 25, 2023.

The study population

Included in our study were all current smokers, former smokers, and/or past smokers who were seen in outpatient consultations or hospitalized in the three departments and who consented to participate in the study.

Were not included, the non-autonomous patients (unable to answer our questions) and the non-consenting patients.

The study variables

The information collected from the patients included:

- Sociodemographic variables: Sex, age, profession, education level, and place of residence;
- Clinical variables: Functional signs, present pathologies;
- Variables related to tobacco consumption: Smoking status, type of tobacco consumed, number of cigarettes per day, age of initiation, duration of consumption, associated psychoactive substances (alcohol, coffee, cola, cannabis);
- Variables related to smoking cessation: Tobacco dependence assessed by the Fagerström test (0 to 3: low or no dependence; 4 to 7: moderate dependence; 7 to 10: high dependence), motivation for smoking cessation tested by the Richmond scale (0-6: low or moderate motivation, 7-9: good motivation, 10: very good motivation), initiation of smoking cessation [8,9].

Sampling and data collection

We conducted systematic screening of smoking patients, followed by an individual interview with each smoking patient seen in consultation in the mornings and/or hospitalized in the afternoons during our study period. Data collection forms were necessary to gather information consisting of items on sociodemographic data, clinical characteristics, variables related to tobacco consumption, and variables related to smoking cessation.

The processing and statistical analysis of the data

The data were entered and analyzed using Epi Info software version 7.2.5.0. Logistic regression was used to determine the factors associated with the acceptability of smoking cessation with a statistically significant difference if the p-value was less than 5%.

Ethical consideration

The study was conducted after obtaining authorization from the director of the CHU YO. Also, we ensured during the study:

- The respect of anonymity on the self-administered questionnaire;
- The informed consent of each respondent;
- And the prior explanation of the study's objectives.

Operational definitions

- **Smoking:** Regular use of tobacco and tobacco products leading to intoxication and dependence.
- **Current smoker:** Any person who currently smokes any tobacco product daily or occasionally.
- **Ex-smoker:** Any person who was a smoker previously but has stopped consuming for at least a year.
- **Former smoker:** Any person who was previously a smoker but had completely quit smoking for at least one year before the study [7].
- **Richmond Test:** It is a standard instrument used to assess the patient's motivation to quit tobacco use [8].
- **Fagerström Test:** It is a test used to screen and quantify the level of tobacco dependence during smoking. It is possible to use this test to tailor the management of smoking cessation [9].

Results

Prevalence of smoking

A total of 2523 patients were interviewed during our study period. The majority of our patients, 58% (1464), came from cardiology, 25.5% (644) from neurology, and 16.4% (415) from pulmonology. The hospital prevalence of smoking was 7.2% (198) in our sample, with 2% in pulmonology, 3.6% in cardiology, and 1.6% in neurology. A total of 182 smokers meeting our inclusion criteria were included in this study.

Figure 1 illustrates the selection of our study population.

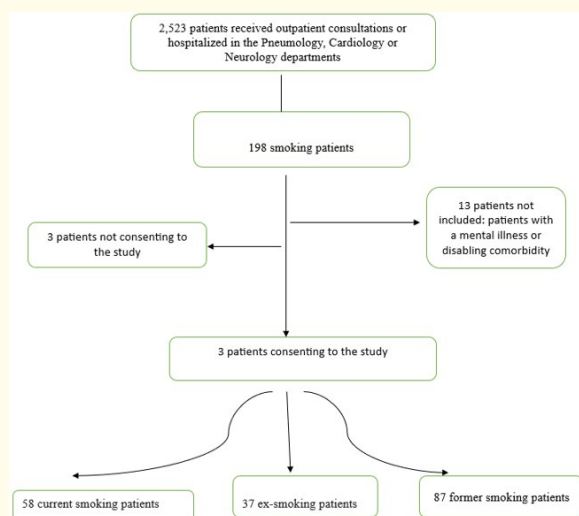


Figure 1: Flowchart illustrating the selection of our population.

Sociodemographic characteristics of the study population

The average age of the smoking patients was 57.1 ± 15.7 years with extremes of 18 and 93 years. The age groups of 40 to 60 years and 60 to 80 years represented 39.6% and 40.7%, respectively. The male sex represented 86.8% of our sample, resulting in a sex ratio of 6.5 in favor of men, and 67.6% of smoking patients had a remunerative activity. According to the level of education, patients with a primary education level represented 29.7%, and those with a secondary education level represented 29.1%. More than half (63.2%) of our study population (115/182) resided in urban areas. Table 1 provides the main sociodemographic data of our patients.

General characteristics	Numbers N = 182	Average	Percentages (%)
Age	-	57,1 [18-93]	-
Sex			
Man	158		86,8
Wife	24		13,1
Profession			
Salary	123		67,6
Pupil or student	02		1,1
Housewife	14		7,7
Retired	41		22,5
Unemployed	02		1,1
Level of education			
Not in school	58		31,8
Primary	54		29,7
Secondary	53		29,1
Superior	17		9,3
Zone of residence			
Rural	67		36,8
Urban	115		63,2

Table 1: Sociodemographic characteristics of smoking patients.

Characteristics of smoking among our patients

The average age of smoking initiation was 25.0 ± 11.2 years with extremes ranging from 10 to 65 years, and the average duration of consumption was 24.8 ± 16.6 years with extremes ranging from 1 to 65 years. Among our smoking patients, 31.9% were current smokers, 20.3% were former smokers, and 47.8% were ex-smokers. Among these patients, 79.1% (144) smoked cigarettes and 20.8% (38) chewed tobacco.

More than half of the smoking patients (74.03%) consumed other substances such as alcohol (48.4%), coffee (25.8%), cola (20.9%), and cannabis (3.3%).

Table 2 presents the characteristics of smoking in our study population.

Characteristics of smoking	Numbers (N = 182)	Average	Percentage (%)
Smoking status			
Current smoking	58	-	31,9
Smoking ex	37	-	20,3
Former Smoker	87	-	47,8
Type of tobacco consumed			
Cigarette	144	-	79,1
Chewed tobacco	38	-	20,9
Chicha	03	-	1,6
Pipe	01	-	0,5
Age of initiation		25,0 [10 - 65]	-
Duration of consumption (years)		24,8 [1 - 65]	-

Table 2: Characteristics of smoking in smoking patients.

The simplified Fagerström score revealed that out of 38 current smokers (57.9%), had a moderate dependence on cigarettes. Indeed, 39.5% of them consumed between 11 and 20 cigarettes per day, and 55.3% of them smoked their first cigarette between 5 and 30 minutes after waking up (Table 3).

Characteristics of smoking	Numbers (N = 38)	Percentages (%)
Number of cigarettes/day		
Less than 10	9	23,7
11 to 20	15	39,5
21 to 30	11	29
More than 30	3	7,8
Time to take the first cigarette		
Less than 5 minutes	1	2,6
5 to 30 minutes	21	55,3
30 to 60 minutes	11	28,9
More than an hour	5	13,2
Level of dependency		
No dependency	9	23,7
Moderate dependence	22	57,9
High dependence	7	18,4

Table 3: Assessment of tobacco dependence.

Motivation for smoking cessation

According to the Richmond score, 39.7% of current smokers had a moderate motivation to stop using tobacco, 37.9% had a good motivation, and 22.4% had a low motivation. More than a quarter (26.4%) of our population accepted smoking cessation, with 5.5% of them being against this cessation. The reasons mentioned by 70.8% of these patients for this cessation were the desire to regain their

health. Out of 48 current smokers who decided to stop consuming tobacco, 41.6% were determined not to smoke or chew for one to four weeks to come, and 31.3% had decided to start the cessation immediately.

Pathologies encountered in our patients

The pathologies encountered were mainly cardiovascular pathologies (50%), neurological pathologies (22.7%), and pulmonary pathologies (21%). According to the departments, there were 25.7% of hypertension, 4.7% of dyspnea in cardiology; 4.2% of tuberculosis, 4.2% of pneumopathies in pulmonology, and 7.9% of strokes and 4.2% of sensory-motor polyneuropathy in neurology.

Factors associated with smoking cessation

The criterion for selecting variables in the univariate analysis was $p \leq 20\%$. The variables that met this criterion were the consumption of associated substances (p -value = 0.0153), the presence of dyspnea (p -value = 0.048), and hypertension (p -value = 0.026). In multivariate analysis, the univariate variables found, introduced, and having a statistically significant association at the 5% threshold for smoking cessation were the presence of other associated substances (p -value = 0.006; OR = 12.5) and the absence of hypertension (p -value = 0.009; OR = 0.1).

Discussion

Smoking, a true public health problem, is at the center of medical news. It is the main risk factor for non-communicable diseases and causes the premature death of more than five million people per year worldwide, whether through cancers, cardiovascular accidents, chronic bronchitis, or bronchitis in children exposed to passive smoking [10].

Hospital prevalence of smoking

The hospital prevalence of 7.2% found in our study is comparable to that found in another study conducted in a hospital setting in Ouagadougou [11]. This low rate compared to the national prevalence of 13.6% could be explained by the clinical condition of our patients. Indeed, many patients stop smoking as soon as they fall ill. Also, the self-reported nature of smoking status could also minimize this prevalence. These rates, even though they seem high, remain below those found by other authors. Indeed, Janah., *et al.* in Morocco in 2015 and Tavolacci., *et al.* in France in 2009 found a smoking prevalence of 38.7% and 34.6%, respectively [12,13]. This difference could be explained on the one hand by the fact that tobacco consumption is an integral part of the sociocultural traditions of Maghreb countries and on the other hand by the fact that in France, the majority of patients had mild pathologies [10,12].

Sociodemographic characteristics of the patients

The average age of 57.1 ± 15.7 years found in our patients differs from that of other African authors, notably Ouédraogo., *et al.* [11] in Burkina Faso (42.2 ± 9.6 years), Koffi., *et al.* in Côte d'Ivoire (41.3 years) [14]. The most affected age group (40 to 60 years) can be explained by the hospital-based nature of the work. This age group has a high prevalence of cardiovascular risk factors, and tobacco further exposes consumers in this age range to pathologies requiring medical care. The male predominance (86.8%) found in our study has been reported in other studies conducted in Burkina Faso [4,11,15]. The sociocultural beliefs in Africa that portray a negative image of women who smoke would explain these results. However, this trend is reversed in developed countries. Indeed, in France in 2016, Rakover., *et al.* found a female predominance (58.3%) which can be justified by the empowerment of women and the promotion of feminism in these countries [16].

Among our patients, 67.6% of them were active smokers. Our results are similar to those of Ouédraogo., *et al.* in 2019 in Burkina Faso (69.7%) on one hand, and on the other hand to those of Koffi., *et al.* in Côte d'Ivoire (65%) (35% salaried and 30% informal sector) [11,14]. In the study by Rakover., *et al.* in France, the patients who were active professionally were fewer in number (53.7%) [16]. Indeed,

the predominance of patients active in the socio-professional sphere could be explained by their age (40 to 60 years) on one hand; but on the other hand, by the fact that maintaining a tobacco dependence requires a minimum of financial means, especially since in our regions, one could easily develop a tobacco dependence. Indeed, the cigarettes sold in Africa are said to be richer in nicotine than those sold in Europe [17].

In our series, the majority of our patients had a primary (29.6%) or secondary (29.1%) level of education. Other authors such as Ouédraogo., *et al*, Koffi., *et al*. and Rakover., *et al*. reported 40.3%, 18.9%, and 46.7% of patients with a secondary education level, respectively [14,16]. Radhouane., *et al*. indicated that the more educated an individual was, the less they consumed tobacco ($p < 0.001$) [18]. Efforts should be intensified to raise awareness against smoking among uneducated populations while adopting educational programs on the harms of smoking starting from primary and secondary school.

Characteristics of smoking

During our study, 182 patients were screened for tobacco use, with 31.9% being current smokers. This rate is higher than that found in the STEPS 2021 survey in Burkina Faso (11.7%) and lower than that of Ouédraogo., *et al*. in 2015, which found 67% current smokers and 37% former smokers [4,11]. This difference could be related to the methodology adopted in these studies.

The most consumed type of tobacco was cigarettes at 79.1% (all male) and chewing tobacco at 20.9%. However, all the women in our study chewed tobacco. Maïga., *et al*. in 2019 and the STEPS 2021 report in Burkina Faso found that the most consumed type of tobacco was cigarettes (respectively 99.5%, 93.2%) [4,19]. The age of initiation of smoking in our regions and the circumstances favoring smoking (lack of employment, trend effect...) lead the majority of smokers to turn to cigarettes, which are inexpensive in our areas. The STEPS 2021 survey also reported a proportion of 87% of patients chewing tobacco [4]. This could indicate that chewing tobacco in our societies has always been part of cultural beliefs, presenting it as having medicinal virtues; unlike cigarettes, which, when smoked by women, give it a bad reputation.

The observation that the majority of our patients smoked (63.2%) less than 20 cigarettes per day is corroborated by other African authors [14]. The socio-economic context of our patients and especially the fact that they are seeking care could justify a reduction in cigarette consumption [20].

The average duration of tobacco consumption (24.8 ± 16.6 years with extremes ranging from 1 to 65 years). This demonstrates the importance of anti-tobacco efforts in our healthcare facilities and in the community through screening and smoking cessation support.

Indeed, according to the STEPS 2021 survey in Burkina Faso, the average age of initiation of smoking was 14.5 years, with extremes ranging from 12.5 to 16.5 years [4]. We must redouble our efforts because the best prevention against a drug dependency like tobacco is to prevent its consumption by young people [21]. It is necessary to stop exposing the youngest by especially avoiding sending them to buy tobacco and/or by prohibiting the sale of tobacco in detail at all points of sale.

The majority (57.9%) of smoking patients had a moderate dependence on cigarettes according to the simplified Fagerström score, as was the case in another study conducted in our country [9]. Indeed, the majority of our patients smoked fewer than 20 cigarettes per day. The low socio-economic status of the majority of our patients would explain why dependence cannot be maintained in the long term [20]. The consumption of other substances such as alcohol (48.3%), coffee (25.8%), cola (20.9%), and cannabis (3.3%) was found. Other studies also illustrate this co-addiction to smoking among the majority of respondents, such as the one by Ouédraogo., *et al*. in Burkina Faso in 2019, where co-addictions to smoking corresponded successively to alcohol (58.79% and 65.83%), coffee (44.24% and 50.93%), and tea (38.18% and 49.37%) [11]. Similarly, in the work of Le Faou., *et al*. in France, the most represented co-addictions were cannabis

(13.8%) and alcohol (17.2%) [22]. Indeed, alcohol, coffee, and cola are substances commonly consumed in the daily lives of Burkinabé people. Alcohol remains one of the substances always available in beverage outlets and at prices accessible to everyone regardless of age, even though there are laws regulating the distribution of alcoholic beverages. Even though in our series, the rate of tobacco-cannabis co-addiction is underrepresented, it is indeed present in Burkina Faso as shown by the study of Ouédraogo, *et al.* (92.3%) [11]. The illegal nature of drugs in our country may be the cause.

Tobacco is a dangerous product, responsible for numerous diseases and affecting almost all organs [23]. The common pathologies in our series were represented in 50% by cardiovascular pathologies, 21% by pulmonary pathologies, and 22.7% by neurological pathologies, with a respective predominance of hypertension (27.6%), tuberculosis (5.6%), and stroke (9.3%).

Several studies have demonstrated the impact of smoking on the human body. Active smoking kills through cardiovascular diseases (heart attacks, angina, peripheral artery disease, strokes...), respiratory diseases (chronic obstructive pulmonary diseases-COPD), cancers (lung, bladder, throat, mouth, colon, pancreas...) [24,25]. The study by Ouédraogo, *et al.* showed that hypertension and tuberculosis were factors associated with smoking in patients living with HIV [11]. Although our results are different, they reflect the predominance of these pathologies in the Burkinabé hospital setting.

Motivation, acceptability of cessation

In our study, 37.9% of our patients had a good motivation for smoking cessation according to the Richmond score. Out of 58 current smokers, 48 had accepted cessation (82.8%). This could be justified by the presence of pathologies.

Indeed, in our series, the majority of patients (70.8%) explained their decision to quit by the desire to regain their health, which is similar to several data in the literature. The direct consequence of this decision to quit was manifested by 41.6% of the patients in our study who were determined to stop consuming tobacco within one to four weeks, and 31.3% had decided to start the cessation process immediately. As for the patients who did not want to quit smoking, 70% of them explained it by their strong dependence on this substance. Our results regarding the willingness to quit are similar to those of Le Faou, *et al.* where half of the patients accepted smoking cessation through smoking cessation support either within the hospital (31%) or externally (20.7%), while 48.3% of patients refused any support [9]. In the study by Maïga, *et al.* the various reasons motivating cessation were primarily health protection (85.8%) or “setting a good example for the children” (72.3%). [19].

Factors associated with smoking cessation

Multivariate logistic regression analysis in our study revealed that factors associated with the acceptability of smoking cessation included the consumption of associated substances (p-value $\leq 0.006\%$; 12.5 [2.06 - 75.87]) and the absence of hypertension (p-value ≤ 0.009 ; 0.1 [0.15 - 0.56]). This could be explained by the fact that patients who consume other substances might replace the sought-after effect of tobacco with the effect of these substances. However, in the study by Radhouane, *et al.* in Tunisia [18], the multiple logistic regression model revealed that being over 45 years old (OR: 4.6; p < 0.001), being from the city (OR: 4.2; p < 0.001), and having a university education (OR: 2.8; p < 0.01) were the determining factors for quitting smoking. In the work of Rakover, *et al.* in France [18], after a multivariate logistic regression, only the number of previous cessation attempts and the number of follow-up consultations increased the chances of cessation among patients. As for smokers of fewer than 10 cigarettes per day, they increased their chances of 1-month abstinence [16]. The difference in context and the realities of the study populations could explain these differences.

Finally, our study had limitations. Indeed, the self-reported answers of the patients during the interview (absence of CO test) did not allow for the verification of the truthfulness of their statements. Moreover, some patients demanded a financial enumeration in exchange for their responses. Also, the services selected for the study were not representative of the hospital or the general population, which does

not allow us to extrapolate these results to the rest of the general population. However, the study was successfully conducted and we were able to compare our results with those of other authors.

Conclusion

Smoking remains a common habit among patients in our hospital context. Active smoking patients had a moderate dependence and were motivated to quit for health reasons. The factors associated with smoking cessation were the consumption of other substances and hypertension. We conclude from this study the importance of the doctor and healthcare worker in general in the fight against smoking. It would be useful to conduct studies on the effective cessation of patients screened and referred to the smoking cessation unit.

Conflicts of Interest

None.

Bibliography

1. Venetz J. "Le tabac, sa composition, son utilisation". *BCV* 62 (1944): 108-115.
2. WHO. "Tabac" (2022).
3. Le rôle des professionnels de la santé dans la lutte anti- tabac. Comment lutter contre l'épidémie de tabagisme. Guide OMS. JMST (2005).
4. Ministère de la santé. Rapport de la deuxième enquête nationale sur la prévalence des principaux facteurs de risque communs de maladies non transmissibles au Burkina Faso. Burkina Faso (2022): 229.
5. OMS. Lutte contre le tabac au Burkina Faso: Le Ministère de la Santé et l'OMS outillent les journalistes dans la lutte antitabac | OMS | Bureau régional pour l'Afrique (2022).
6. Balima JT. Inauguration d'un centre de sevrage à Ouagadougou un espoir pour les fumeurs du Burkina Faso - Médiaterre (2022).
7. World Health Organization. WHO STEPS surveillance manual: the WHO STEPwise approach to chronic disease risk factor surveillance / Noncommunicable Diseases and Mental Health, World Health Organization (2005): 490 Pages.
8. Evaluation de la motivation Test de Richmond R *et al* (2023).
9. Test de Fagerstrom simplifié.pdf (2023).
10. J Hicham., *et al.* "Est-ce que le fumeur connaît les méfaits du tabac?" *Journal of Functional Ventilation and Pulmonology* 17.6 (2015): 1-53.
11. Ouédraogo G., *et al.* "Prévalence et facteurs associés au tabagisme chez les personnes infectées par le VIH au Burkina Faso". *Journal of Functional Ventilation and Pulmonology* 9.28 (2018): 21-28.
12. Janah H., *et al.* "La tuberculose pulmonaire et le tabac: à propos de 100 cas". *Pan African Medical Journal* 19 (2014): 202.
13. Tavolacci MP, *et al.* "Prévalence et caractéristiques socio-sanitaires des fumeurs invétérés en Haute-Normandie". *Cairn.info. SFSP Santé Publique* 21.6 (2009): 583-593.
14. Koffi N., *et al.* "Connaissances, attitudes et comportements des patients vis-à-vis du tabagisme en milieu africain à Abidjan (Côte d'Ivoire)". *Revue de Pneumologie Clinique* 60.4 (2004): 217-222.

15. Ouédraogo G., *et al.* "Caractéristiques des tabagiques reçus en consultation d'aide au sevrage tabagique au Centre Hospitalier Universitaire Yalgado Ouedraogo (Ouagadougou - Burkina Faso)". *Revue de Pneumologie Clinique* 32 (2019): 32-39.
16. Rakover A., *et al.* "Consultations de tabacologie pendant le mois sans tabac: profil des fumeurs et sevrage". *Revue des Maladies Respiratoires* 38.5 (2021): 443-454.
17. Mokhtar Hamdi Cherif. "Problématique du tabac en Afrique francophone et perspectives régionales de l'OTAF". *Global Health Promotion* 12.4 (2005): 45-47.
18. Radhouane F., *et al.* "Tabagisme en Tunisie: comportements et connaissances". *Bulletin of the World Health Organization* 80.5 (2002): 350-356.
19. Maïga S., *et al.* "Caractéristiques du tabagisme des fumeurs de la ville de Ouahigouya - Burkina Faso". *Journal of Functional Ventilation and Pulmonology* 39.13 (2019): 1-68.
20. Comité National du Recensement Institut National de la Statistique et de la Démographie. 5ème RGPH Cinquième Recensement Général de la Population et de l'Habitation du Burkina Faso (2022).
21. Ouédraogo A., *et al.* "Le tabagisme parmi les personnels de santé d'un hôpital au Burkina Faso" (2024).
22. Le Faou AL and Scemama O. "Faisabilité d'un dépistage systématique des comportements addictifs chez les patients hospitalisés". *SFSP Santé Publique* 18 (2006): 7-21.
23. Ferguson JA., *et al.* "Predictors of 6-month tobacco abstinence among 1224 cigarettesmokers treated for nicotine dependence". *Addictive Behaviors* 28.7 (2003): 1203-1218.
24. Martinet Y., *et al.* "Le contrôle du tabac". *Journal of Functional Ventilation and Pulmonology* 2.3 (2011): 1-78.
25. R Doll., *et al.* "Mortality in relation to smoking: 50 years' observations on male". *British Medical Journal* 328.7455 (2004): 1519.

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