Prevalence of and Attitudes towards Smoking among Spanish Health Professionals

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Key Words

Smoking prevalence · Smoking attitudes · Health professionals

Abstract

Background: The MPOWER strategy encourages suitable monitoring of the tobacco epidemic among health professionals in all countries. **Objective:** To analyse the prevalence of and attitudes towards tobacco use among Spanish health professionals. **Methods:** A study was conducted based on an online survey. The study population consisted of health professionals (primary care physicians, specialist physicians and nurses). The questionnaire used included questions about tobacco consumption, knowledge of and attitudes towards smoking. The sample size was calculated according to a database with 9,500 e-mail addresses and listings of health centres and hospitals all over Spain. Statistical analysis was done using the SPSS software programme. **Results:** The study group comprised a total of 612 health professionals: 322 were women (52.6%), 196 were nurses and 416 were physicians. 11.7% of health professionals were smokers (9.6% regular smokers and 2.1% occasional smokers) and 41.3% were ex-smokers. Within the group of daily smokers, differences

were observed between the nurses and the physicians: 11.2 versus 8.9% ($p = 0.009$). Smoking was recognized as a chronic disorder by 58.2% of health professionals, and 54.6% knew that the most effective intervention to help quit is a combination of psychological and pharmacological treatment. 56% of health professionals always asked their patients about their tobacco consumption. **Conclusions:** 11.7% of Spanish health professionals are smokers. We found that they have low knowledge about strategies to quit smoking and that there is a low level of therapeutic intervention on smokers.

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Introduction

Tobacco use is the leading cause of death in developed countries. Each year, around 6 million deaths occur worldwide as a result of tobacco use [1]. The MPOWER strategy describes the main methods recommended by the WHO to control tobacco use. Each letter in the strategy's name represents one of these methods: Monitor the epidemic, Protect the health of non-smokers from air polluted by tobacco smoke, Offer help to smokers to quit

smoking, Warn the population about the risks associated with tobacco use, Enforce bans on tobacco advertising, sponsorship and promotion, and Raise taxes on tobacco [2].

There is no doubt that the prevalence of and attitudes towards tobacco use among health professionals are crucial in achieving a suitable management of this disease. Health professionals have traditionally been considered to fulfil three roles: being a role model, educator and care provider [3]. Though it is indeed important for all health professionals to systematically advise all their patients who are smokers to quit using tobacco, it is no less important for them to be role models for society and be non-smokers. Furthermore, it is not enough to refrain from smoking and always advise patients to quit using tobacco. It is also necessary to help all smokers who seem ready to make a serious attempt to quit succeed in doing so.

Studies agree that a significant reduction in the prevalence of tobacco use among the group of health professionals in a given country is the inevitable first step in bringing about a significant reduction in the prevalence of tobacco use in that country's general population [1].

The MPOWER strategy encourages suitable monitoring of the tobacco epidemic in each group in the relevant countries. In Spain, there have been some studies that analysed the prevalence of and attitudes towards tobacco use among health professionals [4, 5]. The first study was conducted in 1998 and showed that 38.9% of the health professionals interviewed were smokers (34.7% of physicians and 43.2% of nurses were regular cigarette users) [4]. The other study was conducted between 1999 and 2008, the SUN project, and it was a prospective cohort study that investigated the smoking prevalence among 3,272 physicians and 2,541 nurses [5]. In this cohort, smoking prevalence was assessed at baseline and biannually with mailed follow-up questionnaires. The main findings of this study were that 48.5% of nurses were smokers and 5.1% were ex-smokers, while 33.1% of physicians were smokers [5].

The main objectives of our study were to analyse the prevalence of and attitudes towards tobacco use among Spanish health professionals.

Methods and Study Design

The study was conducted from March 25, 2014, to June 15, 2014, based on an online survey posted on a website and accessible to participants through an e-mail link. The survey took 10 min to complete. The participants were between 25 and 65 years of age.

The study population consisted of health professionals (primary care physicians, specialist physicians and nurse professionals) from the Spanish National Health System (SNS) [6].

Drawing from a database with 9,500 e-mail addresses and listings of health centres and hospitals all over Spain, a total of 1,919 invitations were sent in order to be able to cover the specialist physician quotas according to the SNS. In total, 612 health professionals ultimately participated in the study (32%). The proportionality of the medical specialties was maintained [6]. The rest did not respond to or refused the invitation before the quota was reached.

With this sample of 612 professionals (416 physicians and 196 nurses) and without prior knowledge about the prevalence of tobacco use among health professionals in Spain, assuming maximum uncertainty ($p = q$, tobacco use prevalence of $p = 50\%$), the estimated sample precision was 3.96% (4.8% for physicians and 7.0% for nurses).

The questionnaire used included questions on age, sex, professional group, current tobacco use and characteristics thereof if applicable (number of cigarettes consumed daily, degree of physical dependence on nicotine, phase in the Prochaska and DiClemente model, and degree of motivation to quit smoking). The degree of physical dependence on nicotine was assessed using the FTND (Fagerström Test for Nicotine Dependence) questionnaire. The questionnaire also included questions on knowledge of and attitudes towards tobacco use (knowledge that tobacco use is a chronic disease and type of interventions that professionals apply with regard to their patients' tobacco use).

Analysis

Statistical analysis was done using the SPSS software programme. For descriptive analysis, categorical variables were analysed using contingency tables (frequencies and percentages) and continuous variables were analysed using summary statistics (mean and standard deviation). Comparative analyses were done using the χ^2 test for categorical variables and Student's t test and ANOVA for continuous variables. Differences were considered to be statistically significant when $p < 0.05$.

Statement of Ethics

The survey was approved by the Spanish Respiratory Society (SEPAR) ethics committee and, according to Spanish law, followed current regulations on the protection of personal data.

Results

Socio-Demographic Characteristics

The study group comprised a total of 612 health professionals. Among them, 322 were women (52.6%), 196 belonged to the nurse group and 416 were physicians. In the physician category, 155 were primary care physicians and 261 were specialist physicians. In total, 53.1% worked in primary care and 37.4% worked in a hospital setting. Table 1 shows the socio-demographic characteristics of the group analysed and the difference between physicians and nurses according to age.

Table 1. Socio-demographic characteristics of the health professionals interviewed

	Physicians (n = 416, 68.0%)	Nurses (n = 196, 32.0%)	Total (n = 612, 100%)
<i>Sex</i>			
Men	247 (40.4)	43 (7.0)	290 (47.4)
Women	169 (27.6)	153 (25.0)	322 (52.6)
<i>Age</i>			
<40 years	62 (10.3)	40 (6.5)	102 (16.7)
40–44 years	63 (10.3)	39 (6.4)	102 (16.7)
45–50	83 (10.3)	38 (6.2)	121 (19.8)
>50 years	208 (34.0)	79 (12.9)	287 (46.9)
Mean age $\pm$ SD, years	49.5 $\pm$ 8.4	47.2 $\pm$ 8.6	p = 0.002
<i>Work setting</i>			
Primary care			325 (53.2)
Specialty centre			22 (3.6)
Hospital			228 (37.4)
Clinic			37 (5.9)
<i>Years of experience</i>			
<10 years			50 (8.2)
10–20 years			224 (36.6)
21–30 years			230 (37.7)
>30 years			108 (17.5)

Values are shown as n (%), unless otherwise indicated.

Prevalence and Characteristics of Tobacco Use

In total, 11.7% of the health professionals were smokers (9.6% were regular smokers and 2.1% were occasional smokers), and 41.3% of them were former smokers. Within the group of daily smokers, differences were observed between the nurses and the physicians: 11.2 versus 8.9% ($p = 0.009$). Similarly, significant differences were observed between these groups with respect to number of cigarettes smoked daily: physicians averaged 9 cigarettes per day, whereas nurses averaged 11 cigarettes per day ($p = 0.03$). No differences were observed between the two sexes for these variables (tobacco use and number of cigarettes consumed daily) in either the nurses or the physicians (table 2).

It should be noted that 57% of the healthcare workers who were smokers were in the contemplation phase and only 16.7% of them were in the preparation phase. There were no differences between the physicians and nurses in this regard. It should also be noted that 54.2% of healthcare workers who were smokers consumed their first cigarette of the day 1 hour after waking up, and only 5.6% of them did so within 5 min after waking up. There were no

Table 2. Prevalence and characteristics of tobacco use

	Health professionals	Physicians	Nurses	p
<i>Prevalence</i>				
Daily smokers	9.6	8.9	11.2	0.009
Occasional smokers	2.1	2.2	2	–
Former smokers	41.3	38	48.5	0.009
Non-smokers	46.9	51	38.3	0.009
<i>Characteristics</i>				
Number of cigarettes daily	10	9	11	0.033
Motivation (score)	5.6	5.8	5.4	–
Importance (score)	8.6	8.5	8.9	–
<i>Phase of quitting</i>				
Pre-contemplation	22.2	26.1	15.4	–
Contemplation	56.9	56.5	57.7	–
Preparation	16.7	10.9	26.9	–
Action	4.2	6.5	–	–
<i>Time to first cigarette</i>				
<5 min	5.6	–	15.4	–
5–30 min	27.8	28.3	26.9	–
31–60 min	12.5	13	11.5	–
>60 min	54.2	58.7	46.2	–

Values are shown in percentages, unless otherwise indicated.

significant differences between the two groups of professionals in this regard (table 2).

Health professionals' motivation to quit smoking as well as the importance attributed to it were analysed using a visual analogue scale from 0 to 10, where 0 meant 'not important at all' or 'not motivated at all' and 10 meant 'very important' or 'very motivated'. The results showed that both groups of professionals give a great deal of importance to quit smoking (8.5 points in the physician group and 8.9 points in the nurse group). Despite this, however, they show little motivation to quit smoking (5.8 points in the physician group and 5.4 points in the nurse group; table 2).

Knowledge about Tobacco Use

A total of 58.2% of the health professionals believe that tobacco use is a chronic disease. No significant differences were observed between the two groups in this regard. However, it should be pointed out that 34.7% of the nurses believe that tobacco use is a bad habit, while up to 26.9% of the physicians hold this same belief (table 3). Moreover, it is striking that in the physician group,

Table 3. Knowledge about smoking

	Health profes- sionals	Physicians	Nurses	p	Physicians		p	Nurses		p			
					smoker	non- smoker		smoker	non- smoker				
<i>What is smoking?</i>													
A chronic disease	58.2	61.5	51	0.084	34.8	64.9	0.001	46.2	51.8	0.741			
A bad habit	29.4	26.9	34.7		45.7	24.6		34.6	34.7				
A routine	1.3	1.4	1		n.s.	2.2		1.4	–		1.2	n.s.	
A behavioural problem	11.1	10.1	13.3		17.4	9.2		19.2	12.4				
<i>Smoking is harmful to health</i>													
Completely agree	98	98.8	96.4	0.099	93.5	99.5	<0.001	96.2	96.5	0.899			
Quite agree	1.6	1.0	3.1		6.5	0.3		3.8	2.9				
Neither agree nor disagree	0.2	0.2	–		n.s.	–		0.3	–		–	n.s.	
Completely disagree	0.2	–	0.5		–	–		–	0.6				
<i>What is the most effective intervention to help smokers quit?</i>													
A combination of drugs and psychological support	54.6	54.8	54.1	0.825	52.2	55.1	0.608	61.5	52.9	0.153			
Will power	36.8	37	36.2		43.5	36.2		34.6	36.5				
Psychological support only	7.4	6.7	8.7		n.s.	4.3		7	n.s.		–	10	n.s.
Drug treatment only	1.2	1.5	1		–	1.6		3.8	0.6				
Values are shown in percentages. n.s. = Not significant.													

Table 4. Interventions for smoking cessation

	Health profes- sionals	Physicians	Nurses	p	Physicians		p	Nurses		p
					smoker	non- smoker		smoker	non- smoker	
<i>How often do you ask your patients about their tobacco use?</i>										
Always	55.7	58.4	50	0.001	52.2	59.2	0.065 n.s.	50	50	0.534 n.s.
Often	33.5	28.8	43.4		32.6	28.4		38.5	44.1	
Occasionally	8.8	9.9	6.6		6.5	10.3		11.5	5.9	
Never	2	2.9	–		8.7	2.2		–	–	
<i>How often do you advise your patients to quit?</i>										
When the patient is not experiencing any symptoms or suffering from any diseases associated with tobacco use										
Always	21.25	22.6	18.4	0.163 n.s.	15.2	23.5	0.061 n.s.	23.1	17.6	0.849 n.s.
Often	31.2	31.5	30.6		37.0	30.8		23.1	31.8	
Sometimes	28.1	26	32.7		26.1	25.9		38.5	31.8	
Rarely	12.3	11.5	13.8		4.3	12.4		11.5	14.1	
Never	7.2	8.4	4.6		17.4	7.3		3.8	4.7	
When the patient has tobacco-related symptoms or diseases										
Always	83.7	84.4	82.1	0.011	78.3	85.1	0.034	92.3	80.6	0.018
Often	10.9	8.7	15.8		6.5	8.9		3.8	17.6	
Sometimes	2.4	3.6	1.5		10.9	2.7		–	1.8	
Rarely	2.5	1.4	0.5		–	1.6		3.8	–	
Never	0.5	1.9	–		4.3	1.6		–	–	
Values are shown in percentages.										

non-smokers have significantly better knowledge of this point than smokers (table 3). Moreover, physicians who are non-smokers completely agree that smoking is harmful for one's health significantly more frequently than physicians who are smokers.

It is important to note that only 54.6% of all health professionals recognise that the most effective intervention to help smokers quit is a combination of drug treatment and psychological support. By contrast, 37% of them think that will power is the best treatment. No significant differences were observed between the physician and the nurse group in this regard (table 3).

Attitudes towards Tobacco Use

Only 56% of all the health professionals always ask their patients about their tobacco consumption, and 42.3% of them do so often or occasionally (table 4).

Table 4 shows how often the different health professionals advise their patients to quit using tobacco, depending on the presence or absence of disease associated with its use. It should be noted that only 21% of the health professionals always advise their patients to quit even if the patients do not have any diseases related to tobacco use. Almost 20% of health professionals never or rarely advise their patients to quit smoking. It is important to note that physicians who are non-smokers advise patients who have smoking-related disorders significantly more frequently to stop smoking than physicians who are smokers. Nevertheless, in such cases, in the nurse group, smokers advise patients to stop smoking significantly more frequently than non-smokers.

Discussion

The most striking data in this study indicate that the prevalence of tobacco use among Spanish health professionals is low (11.1% among physicians and 13.2% among nurses), that health professionals who are smokers consume an average of 10 cigarettes per day, that they have a low degree of nicotine dependence and that, although they believe it is very important for one's health to quit smoking, they do not seem very motivated to quit smoking. Furthermore, only 58% of Spanish health professionals recognise tobacco use as a chronic disease, and 35% of them continue to think that tobacco use is a bad habit. The study also found that 56% of the professionals always advise their patients to quit smoking. Only 54% of them recognise that the most effective intervention to help smokers quit is a combination of drug treatment and psy-

chological support. By contrast, 37% of them think that will power is the best treatment to quit smoking. Another important finding of our study is that more physicians who are non-smokers believe that smoking is a chronic disorder and that it is harmful for one's health than those who are smokers. Also, another interesting fact that we have found in our study is that, when patients have smoking-related disorders, physicians who are non-smokers advise them to stop smoking more frequently than those who are smokers. However, in these cases, in the nurse group, smokers advise patients more frequently to stop smoking than non-smokers.

The low prevalence of tobacco use is one of our study's most encouraging findings. Bearing in mind that the prevalence of tobacco use found in a similar study conducted in Spain in 1998 was 38.9% among physicians and 43.2% among nurses, it may be said that Spanish health professionals are starting to be role models for society as non-smokers [4]. Moreover, if these findings are compared with the data from the latest 'Encuesta Nacional de Salud' (Spanish National Health Survey) on the prevalence of tobacco use in the general Spanish population, it may be observed that the smoking rate among health professionals is more than 12 points below that in the general population (general population 24%; health professionals 11.7%) [7]. A recent study analysed how the rate of tobacco use in a group of workers at two Catalan hospitals evolved from 2001 to 2011. The study found that the smoking rates in physicians decreased from 25.9% in 2001 to 18.8% in 2011 ($p = 0.005$) and the smoking rates in nurses decreased from 35.1 to 25.6% ($p = 0.005$) [8]. There may be several explanations for this significant reduction: greater awareness and improved knowledge about this subject. However, we believe that the approval and subsequent development since 2006 of the current Spanish legislation regulating tobacco consumption has played a key role [9, 10]. It should be pointed out that two studies conducted in 2001 and 2003 found very high rates of tobacco use among Spanish health professionals [11, 12]. In a study on physicians and nurses by the Autonomous Community of Madrid, Fernández Ruiz and Sánchez Bayle [11] found prevalence rates of around 47% for nurses and 37% for physicians. Similarly, another study, though published in 2006, analysed a sample obtained in 2003 of 6 Spanish hospitals. It found that the rate of tobacco use among the physicians at these hospitals was 52.2% [12]. It may be deduced by comparing the data from our study to the data from a study by Reyes Urueña et al. [8] that a reduction in the prevalence of tobacco use among Spanish health professionals started to become

evident from the time the Spanish legislation regulating tobacco use was implemented [9, 10, 13].

Our study also analysed Spanish health professionals' knowledge about tobacco use. The results in this regard were disheartening. Only 58% of them believe that tobacco use is a chronic disease, while 35% believe that it is a bad habit. These beliefs stand in stark contrast to the definition of tobacco use given by Spanish and international scientific institutions [1, 14–16]. All of them agree that tobacco use is a chronic disease. In fact, in the latest edition of the WHO International Classification of Diseases, tobacco use was defined as a chronic disease and given the classification code F17 [17]. Moreover, it is important to note that physicians who smoke have less knowledge about smoking as a chronic disorder than those who do not smoke. This lack of training also became clear when the health professionals' knowledge about the treatment of tobacco use was investigated: 37% of them continue to think that the most effective treatment for tobacco use is will power. International and Spanish scientific institutions agree that the most effective treatment to help smokers quit is a combination of psychological support and drug treatment [14, 15]. Yet, more than 40% of the Spanish health professionals interviewed were not aware of this scientific reality.

The '5 As' strategy is recognised as a type of intervention in tobacco use that is more effective and has a higher cost-benefit ratio [14, 16]. This strategy calls upon health professionals to intervene in the tobacco use of all the patients they see through the following activities: ask whether the patient is a smoker or not, advise the patient that he or she should quit smoking, assess whether the patient wants or does not want to quit smoking, assist the patient in quitting smoking and arrange follow-up to manage his or her process of quitting tobacco use [14, 16]. Two fundamental components of this strategy are to ask all patients seen by different health professionals about their tobacco use and to always advise them to quit [14, 16]. Therefore, it is surprising to find that 44% of the health professionals in our study do not regularly ask the patients they see about tobacco use and that only 21% of them advise their patients who are smokers to quit using tobacco even if they are not suffering from any tobacco-associated diseases. In fact, 20% of Spanish health professionals never advise their patients who are smokers to quit smoking if they do not suffer from diseases associated with tobacco use. Moreover, it is important to note that physicians who do not smoke advise their patients with smoking-related disorders to quit more frequently than physicians who smoke.

There are several possible explanations for these data. One is a lack of training in the areas of prevention, diagnosis and treatment of tobacco use. Another is a lack of awareness among health professionals of this subject. This lack of awareness is higher in those who smoke compared with those who do not smoke. It is essential to take a broad approach to training on tobacco use during the pre- and post-graduate periods. The official educational programmes of all health professionals should include suitable theoretical training in prevention, diagnosis and treatment of tobacco use, complemented by the development of practical skills in smoking cessation strategies. Instruction in said knowledge and skills should be compulsory and given the utmost importance. We believe that the students of the various health professions today are receiving too much theoretical and practical training in certain diseases that are much less common in regular clinical practice and responsible for far fewer deaths than tobacco use.

Our study has some limitations that we must point out. The characteristics of the sample analysed are similar to those of the population of Spanish health professionals. However, it is possible that our sample does not reliably represent said professionals. Also, the data presented here were collected through an online survey, and there is a chance that the data are not adequately representative of the reality analysed, as they have not been validated. Also, it is important to note that 47% of the health professionals who were interviewed were over 50 years of age. This could cause a bias, since smoking prevalence is normally higher in younger and middle-aged people than in older people [18]. Nevertheless, the studied sample is representative of all Spanish physicians and nurses [19].

In conclusion, the prevalence of tobacco use among Spanish health professionals and their attitudes towards and knowledge about tobacco use were studied. It was found that, although the smoking rates have dramatically declined in the last few years, it remains necessary to improve matters related to their attitudes towards their patients' tobacco use and their training in prevention, diagnosis and treatment of tobacco use.

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