Publication Types: Research

Prevalence of smoking among dentists in Catalonia - Spain (2006). Literature review of smoking cessation practices in the dental office

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Received: 22/05/2007
Accepted: 03/09/2008

Indexed in:
-Index Medicus / MEDLINE / PubMed
-EMBASE, Excerpta Medica
-SCOPUS
-Indice Médico Español
-IBECS

Casals-Peidró E, Otero-Romero S, Cuenca-Sala E. Prevalence of smoking among dentists in Catalonia - Spain (2006). Literature review of smoking cessation practices in the dental office. Med Oral Patol Oral Cir Bucal. 2008 Oct1;13(10):E671-7.

http://www.medicinaoral.com/medoralfree01/v13i10/medoralv13i10p671.pdf

Abstract

Objective: The objective of this study was to collect data on the prevalence of smokers among Catalonian dentists (by age and sex) and compare them with existing data on the general population, doctors, registered nurses and pharmacists. The overall prevalence of smokers in Catalonia (2006) was 34.5% of men and 24.3% of women. Data available on the prevalence of smoking among doctors (26.3% men and 22.1% women), pharmacists (19.8% men and 20.6% women) and registered nurses (34.1% men and 35.3% women) relates to the year 2002.

Study design: In September 2006, Catalonian dentists (n=3,799) were asked about their habits in relation to tobacco in a self-administered questionnaire, on use and opinions with respect to dental amalgam. Five hundred and seventy-nine questionnaires were received, of which 538 answered the question on smoking (14.2% of the sample universe).

Results: The prevalence of smokers among dentists is lower (24.9% of men and 18.4% of women) than in the general population and other healthcare professionals. In dentists in the age group between 25 and 34 years, the prevalence was 26.1% in men and 14.9% in women, while the prevalence in this age group in the general population was 43.6% and 37.1%, respectively.

Conclusion: Catalonian dentists have a much lower prevalence of tobacco use than the general population and lower even than other healthcare professionals. Given that non-smoking healthcare professionals have better awareness for providing recommendations for smoking prevention and cessation, Catalonian dentists may be a valid group for performing this task for which there is scientific evidence.

Key words: *Smoking addiction, smoking cessation, tobacco, dentists, registered nurses, doctors, pharmacists.*

Introduction

Many patients who try to quit smoking do not manage to do so on their first or even second attempt. Some of them never manage it. One single minute of a dental visit may improve the success rate. (1,2) The techniques and treatments for smoking cessation were evaluated by Marlow, (3) who extended a prior review by the Cochrane Collaboration, assigning a grade A recommendation for clinical practice (result of obtaining the highest grade of scientific evidence (level 1a), according to the Agency for Healthcare Research and Quality classification criteria) to nicotine replacement therapy (NRT), the use of bupropion (antidepressant medication) and counselling from health care professionals. A recent meta-analysis of clinical trials on smoking cessation, with a minimum duration of one year and chemical confirmation of smoking cessation, (4) added the use of varenicline, with four trials in the bibliography (where the authors found 70 trials evaluating nicotine replacement therapy and 12 trials evaluating bupropion), to the list of treatments with grade A recommendation. This new treatment, designed exclusively for smoking cessation, was approved on 11 May 2006 by the Food and Drug Administration (FDA). The bibliography shows a higher success rate with the combined use of health counselling together with pharmacological treatment. Other less-studied interventions, such as hypnosis, acupuncture, physical exercise or anxiolytic agents require more evidence for their recommendation.

Brief advice lasting less than 3 minutes by a healthcare professional will help approximately 2.5% of smokers to quit smoking. Dentists and hygienists have a privileged position in smoking prevention and cessation as they have the possibility of identifying the effects of smoking on the oral health of the adolescent population, young people and in pregnant women early, and can provide advice and counselling to their smoking patients.

According to the available evidence, a smoking cessation program should be individualised, assessing the individual reasons why the person smokes, the environment in which it occurs and individual preferences about options for quitting. The clinician should take into account that smoking cessation is not an easy road and that it is important to have patience, to see the fruits of the work done, and persistence in its development and implementation. There is ever-greater scientific evidence showing that the strategies used in smoking cessation cannot be independent of the health care system in which they take place. Therefore, tobacco-related interventions require coordination between institutions and professionals. (5)

Although some authors believe that no dentist in the XXI century could ignore their patients' smoking habits,(6) various studies have reported that doctors recommend smoking cessation and provide support material to their patients in a higher proportion than dentists.(7) According to results of the 1989 COMMIT study (Community Intervention Trial for Smoking Cessation Study), 48% of dentists said that they gave recommendations related with smoking to their patients, compared to 94% of doctors. (7)

Many authors believe that prophylaxis and maintenance visits are an opportunity to discuss the effects of tobacco with the patient and to carry out interventions on smoking cessation.(8) However, available data on the percentage of dentists involved in matters of smoking cessation offers relatively low figures, although they show significant differences. In 1990, Severson observed that although 65% of dentists recommended that their patients quit smoking, only a small percentage noted that activity in the medical record. A 1993 study, carried out in Minnesota, found that 46% of dentists recommended quitting tobacco but that only 19% discussed techniques and strategies for doing so with their patients (only 2% offered their patients some type of follow-up activity).(9) In 1995, Tomar found that only 24% of smoking patients in the United States reported having received a recommendation to quit smoking by their dentist.(7) Data from the National Youth Tobacco Survey in 2000 showed that only 20% of young people said they had received advice on the topic of tobacco use from their dentist while the figure reached 33% when referring to their doctor.(10)

According to data from the US National Survey, 33% of dentists asked all or almost all their patients about tobacco use, 66% advised smoking patients to quit smoking and 29% offered some type of cessation service. However, investigators believe that the discrepancies obtained with respect to other studies may indicate a certain overdeclaration by the professionals.(11)

In the United Kingdom, in 1991, 50% of dentists asked their patients about their smoking habits and almost 30% warned their patients about the risk it entailed.(12) In 1996, 37% of dentists believed that their collective was effective in the development of smoking cessation strategies, but only 18% recorded tobacco consumption in their patients.(13) Warnakulasuriya (14) observed the increasing use of nicotine replacement therapies, from 5 to 17%, by English dentists.(13,15-17)

Although all these studies show progressive involvement of oral health professionals in smoking cessation, the results show that it is still far from achieving satisfactory levels of commitment and action. According to the FDI, the main obstacles that dentists find in offering smoking cessation to their patients are related with a lack of: time, educational materials, remuneration for the activity, confidence and necessary abilities. Moreover, dentists have doubts about the effectiveness of these activities and about real follow-up by their patients,(18) although a study conducted in UK dental offices, using less than 10 minutes of professional advice, resulted in 11% giving up smoking at 9 months.(19)

Some dentists see smoking cessation as an over-extension

of their real work that may even annoy their patients. Other dentists are simply not accustomed to the use of nicotine replacement therapies.(8) One review concluded that the biggest obstacle for offering advice on smoking cessation by dentists was the lack of education in this field both at under- and post-graduate levels.(14)

In Spain, the Spanish Dental Foundation of the Spanish General Dental Council, which enrols all dentists in the country - odontologists and stomatologists-, have translated the English guide Helping Smokers Stop – a Guide for the Dental Team, into Spanish to provide advice on smoking cessation to oral health professionals and to make them aware of the use of nicotine replacement therapies. The participants of the First European Workshop on Tobacco Use Prevention and Cessation for Oral Health Professionals agreed a care pathway for tobacco use prevention and cessation in the dental office, which can be found in Spanish on the tobacco and oral health website (www.tobacco-oralhealth.net).(20) A telephone survey conducted in December 2005 by the Madrid Community Institute of Public Health interviewed 200 private odontologists and stomatologists with the CATI system, obtaining a prevalence of smokers of 15.5% (12.5% daily and 3% occasional) and a proportion of ex-smokers of 35%.(21) This survey found that 69.5% of dentists always or almost always asked their patients about their tobacco consumption. Only 9% of dentists stated that they had written material and used it, compared to 86.5% who said they did not have material. Although 93.5% of dentists saw tobacco-related oral problems in their patients, only 2% of dentists surveyed received a request from their patients to quit smoking "every week or sometime during the month" and 22% received a request "sporadically". 50.8% of non-smoking dentists defined their role in the treatment of smoking as "quite or very important" compared to 35.5% among smokers. 50.5% of those surveyed believed that they could have a more important role in the treatment of smoking.

Smoking of professionals is a negative predictor of counseling activities. Given that healthcare professionals who smoke, including dentists, have a lower tendency to provide recommendations on smoking cessation, it was decided to study the prevalence of smokers among Catalonian dentists to predict their attitude with respect to the introduction of smoking cessation activities in their clinical practice.

Materials and Methods

In September 2006, a self-administered questionnaire was distributed to members of the Official College of Odontologists and Stomatologists of Catalonia (COEC) by post; it consisted of a single sheet printed on both sides, with questions relative to the use of dental amalgam, which included a question relating to tobacco use. The exact question was "Are you a smoker?" and there were four answer options (1. No, I have never smoked, 2. No, I am an ex-smoker, 3. Yes, occasionally, 4. Yes, daily). This question was identical to that included in the Catalonia Health Survey to assess the prevalence of smokers in the population. The envelope containing the questionnaire included a franked envelope addressed to the COEC. The questionnaire was completely anonymous. None of the questionnaires were resent and no prior information was advanced about the survey or about the topic in question. The questionnaire, with questions relative to use and attitudes in relation to dental amalgam, was previously validated with a group of dentists registered on the primary-care dentists distribution list (n=164), who had been e-mailed the questionnaire requesting their collaboration to improve the comprehension of the questions included in it as well as the way of entering the responses to them. Three comments were received to modify the writing of one question and the scale used to answer another, but no modifications were received related to the question on smoking.

Of the 3,799 questionnaires sent, a total of 579 questionnaires were received, of which 538 answered the question with respect to tobacco use (14.2%). The answers to the questionnaire were tabulated to a form in the Access program and then exported to the SPSS program (version for Windows) for their analysis.

Data was obtained relative to the collective of doctors, pharmacists and registered nurses in Catalonia, following a request to the authors of the study for the initial unpublished analysis tables. The data was obtained from a personal survey conducted in 2002 on a sample of 803 doctors, 800 registered nurses and 500 pharmacists by the Catalonia Government Department of Health and Social Security. Data relative to dental visits was obtained from the Catalonia Health Survey (1994, 2002 and 2006).

The percentage of people who said they had visited a dentist in the last 12 months was compared by age cohorts and sex.

Results

The question on smoking was answered in 538 questionnaires. 56.7% of the total (n=305) were from males and 43.3% (n=233) from females. The data was compared to the distribution by sex and age group of the study universe (COEC members) (Table 1).

The sample data indicated that 9.7% of dentists are daily smokers and 12.5% smoke occasionally. The percentage of ex-smokers was 28.8% and that of non-smokers was 49.1% (Table 2). By sex, the figures found for the prevalence of smokers among dentists was 24.9% for men (with 15.1% occasional smokers and 9.8% daily smokers) and 18.4% for women (with 9% occasional smokers and 9.4% daily smokers). The percentage of ex-smokers was 33.1% for men and 23.2% for women (statistically significant sex difference). The percentage of dentists who had never

Table 1. Distribution of the selected sample by sex and age in comparison with the distribution by sex and age of the universe of licensed dentists in Catalonia (COEC).

	Men	Women	<35 years	35-44 years	45-54 years	>54 years
Sample	56.7% (n=305)	43.3% (n=233)	27.6% (n=160)	21.9% (n=127)	34.9% (n=202)	8.8% (n=51)
Total members (COEC)	56.9%* (n=2,162)	45.1%* (n=1,637)	32.6%** (n=1,303)	20.6%** (n=823)	30.5%** (n=1,216)	16.3%** (n=649)

*Data on COEC members in September 2006
**Data on COEC members in July 2007

Table 2. Percentage of smokers (daily and occasional), non-smokers and ex-smokers among Catalonian dentists (men, women and total).

	Non-smokers	Ex-smokers	Occasional	Daily	Total
Men (% with respect to sex)	128* 42%	101* 33.1%	46* 15.1%	30 9.8%	305 100.0%
Women (% with respect to sex)	136* 58.4%	54* 23.2%	21* 9.0%	22 9.4%	233 100.0%
Total	264 49.1%	155 28.8%	67 12.5%	52 9.7%	538 100.0%

*Statistically significant sex differences by categories (p=0.01)

smoked was 42% of men and 58.4% of women (statistically significant sex difference) (Table 2). By age group, we observed that in the younger age group (under 35), the percentage of non-smokers was 70.6% and that of ex-smokers was 11.3%. Occasional smokers represented 11.9% and daily smokers 6.3%. In the age group 35-44 years old, the percentage of non-smokers decreased to 51.2% and that of ex-smokers increased to 23.2%. Occasional smokers represented 12% and daily smokers 13.6%. In the age group 45-54 years, the percentage of non-smokers fell to 32.8% and that of ex-smokers rose to 42.8%. Occasional smokers represented 13.4% and daily smokers 10.9%. In the age group over 54 years, the percentage of non-smokers was 43.1% while that of ex-smokers reached the maximum of 43.1%. Occasional smokers represented 9.8% and daily smokers 3.9%. (Figure 1) If we separate the data into two age groups (under and over 45 years old), the under-45 group contains significantly less smokers and the over-45 group contains significantly more ex-smokers ($p<0.001$).

Discussion

In relation to the survey response ratio, we consider that the level reached is acceptable. A study conducted three months later, under the title "Career and clinical management", using an identical questionnaire methodology with a franked envelope to the same sample universe, obtained a much lower number of responses (136 compared to 579). In relation to sample size, the sample used by the Catalonian Government Department of Health and Social Security for a collective with a number of professionals close to that of the dentists (pharmacists) was composed of 500 interviews (a similar and slightly lower figure than the sample obtained in our study).

Although the total prevalence of smokers has decreased in recent years in many countries, due in part to the incorporation of tougher legislative measures, tobacco consumption among women and young people is still on the increase in some European countries. The data on smoking prevalence in the general population of Catalonia obtained from the Catalonia Health Survey (2006) shows how the percentage of male smokers has decreased continually in the last 25 years, falling from a prevalence of 58.3% (1982) to percentages of 44.4% (1998), 41.8% (2002) and 34.5% (2006). In women, the evolution of the prevalence of smoking has been the opposite, with a slight but continual increase from 20% (1982) to 30.7% (1998) to a maximum of 32.5% (2002) and a turn in this progression with a decrease to reach a percentage of 24.3% (2006). The improvements may be related with the new smoking regulations applied in Spain (Law 28/2005) since 1 January 2006.

The study on the prevalence of smokers in the Catalonian population shows how, among the younger population (15-24 years), the differences in sex are almost non-existent (36.4% for men and 35.8% for women) and that the highest prevalences of smokers, for both sexes, are reached in the young-adult age group (25-34 years) with percentages of

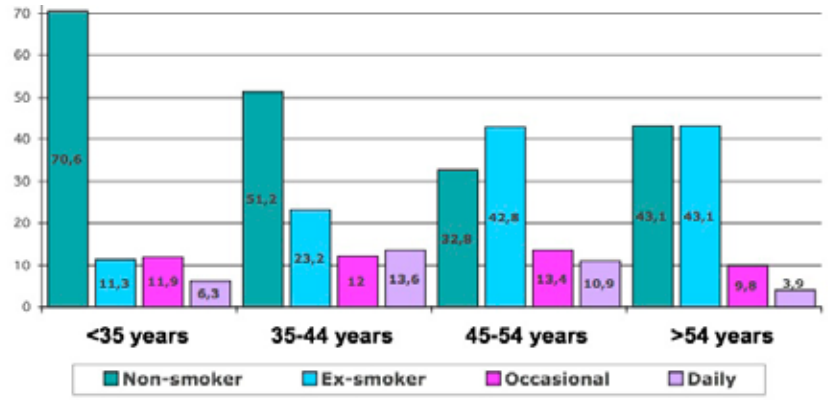
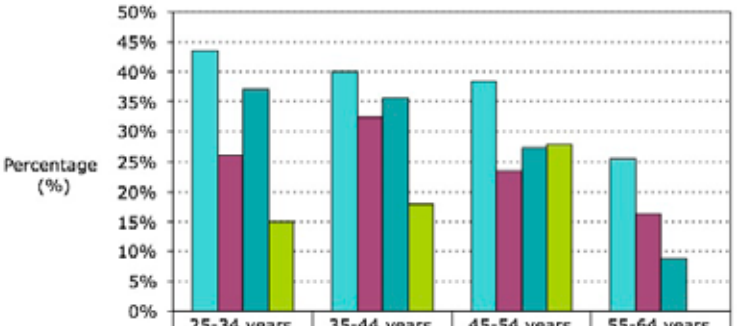


Figure 1. Percentage of smokers (daily and occasional), non-smokers and ex-smokers in dentists in Catalonia (by age group)



	25-34 years	35-44 years	45-54 years	55-64 years
Men (population)	43,60%	40%	38,40%	25,40%
Men (dentists)	26,10%	32,40%	23,40%	16,30%
Women (population)	37,10%	35,60%	27,30%	8,80%
Women (dentists)	14,90%	17,90%	27,80%	0%

Figure 2. Percentage of daily and occasional smokers by age group and genre (dentists and general population)

Data from dentists' survey and Catalonia Health Survey (2006)

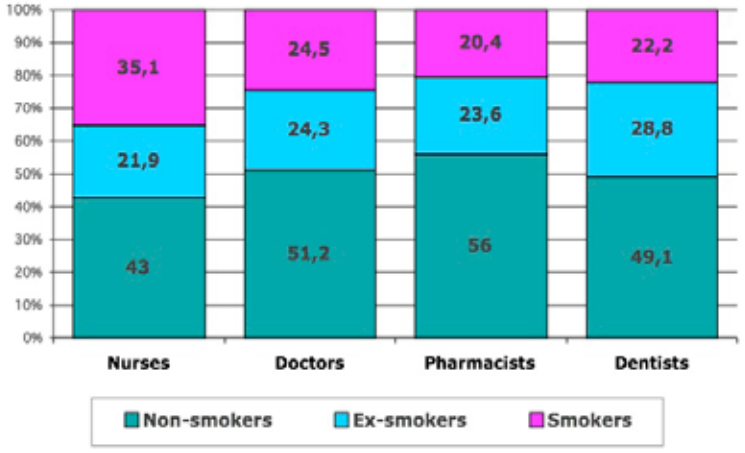


Figure 3. Percentage of smokers (daily and occasional), non-smokers and ex-smokers among health professionals in Catalonia

Nurses, doctors and pharmacists (2002) and dentists (2006)

43.6% for men and 37.1% for women (Figure 2). This fact is worrying, since this high prevalence indicates a serious future problem in a population group with low medical attendance rates.

The figures found for the prevalence of smokers among dentists is lower (24.9% of men and 18.4% of women) than in the general population. Among dentists aged between 25 and 34, the prevalence was 26.1% in men and 14.9% in women, while the data for the general population shows a much higher prevalence in this age group, with 43.6% of men and 37.1% of women. (Figure 2)

In general, with the single exception of a group of female dentists aged 45 to 54 with a percentage of smokers (27.8%) half a point above the population datum, dentists have a lower smoking prevalence in all the sex and age sub-categories than the general population, reaching the maximum difference in young women (aged 25 to 34), where 14.9% of dentists smoke while the same population datum for the same population segment is more than 20 points above (37.1%). (Figure 2)

The differences between men and women in the dentists' collective show a difference in favour of non-smoking women (58.4% versus 42%) and a higher percentage of ex-smokers (33.1% versus 23.2%) and occasional smokers (15.1% versus 9%) among male dentists (statistically significant differences with p=0.01). (Figure 1)

Data from medical, pharmaceutical and nursing professionals in Catalonia (Figure 3) shows how more than a third of the nursing collective (35.1%), almost a quarter of doctors (24.5%) and a fifth of pharmacists (20.4%), smoke.(22)

The low percentage of dentists who smoke may be due to the greater awareness of dentists with respect to tobacco, to being health care professionals and being able to see its pernicious effects directly in their daily clinical practice (oral lesions, periodontal disease, etc.).(23,24) In fact, respiratory-medicine specialists have the lowest prevalence of smoking in Catalonia, at 10%.(22). Moreover, the fact that a third of the dentists' collective are under 35 years and that the largest percentage differences, in the number of smokers with respect to the general population, occur in this age group may contribute to the low global percentage obtained. It is worth mentioning that the data on doctors, pharmacists and registered nurses are from 2002 and the trend in recent years towards a decrease in smoking makes it likely that the real difference in these collectives with respect to that of dentists is less than that shown. (Figure 3)

Given the evidence of the action of dentists in tobacco use prevention and cessation, specific strategies should be developed to motivate and support oral health professionals in training for topics relative to tobacco use prevention and cessation in the dental office as part of their routine clinical practice. Catalonian dentists have a much lower prevalence of tobacco use than the general population and a particularly low prevalence among the youngest professionals (25-34 years). Although Catalonians do not visit their dentists as often as recommended, the data show a positive trend. According to data from the Catalonian Health Survey, the percentage of men who have visited the dentist in the last 12 months has increased from 23.8% (1994) to 30.6% (2002), to reach a figure of 31.5% in 2006. The trend in women is similar: 29.2% (1994), 37.7% (2002) and 38.1% (2006). Therefore, dentists are in an optimal position to make recommendations with respect to smoking prevention and cessation, which may have a significant impact, as more than one third of Catalonians have visited a dentist in the last year, particularly in the age group (adolescent) where visits to the doctor decrease and prevention of smoking is very important. It is necessary to assess the qualification and attitudes of dentists with regard to the regular establishment of advice on smoking prevention in Catalonian dental offices in order to, if appropriate, prepare campaigns suited to these professionals, both educational and with regard to the distribution of support materials for this activity.

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Acknowlegement:
This study was funded by the Official College of Odontologists and Stomatologists of Catalonia (COEC)