Original Article

Prevalence of smoking among dentists in the Federal District of Brasília, Brazil*,**

Prevalência do tabagismo entre dentistas do Distrito Federal

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Abstract

Objective: To determine the prevalence of smoking among dentists in the Federal District of Brasília, Brazil. **Methods:** A descriptive, cross-sectional survey, involving 446 dentists residing in the Federal District, was conducted in the second semester of 2004. Data regarding the smoking habit were obtained using a World Health Organization questionnaire that was translated and validated for use in Brazil by the Brazilian National Cancer Institute. Individuals who had smoked a minimum of one cigarette per day for at least 6 months prior to the study outset were classified as regular smokers. The distribution of frequencies was analyzed using descriptive statistics (means and standard deviations), as well as calculation of prevalence rates. The different variables were compared using the chi-square test, and values of $p < 0.05$ were considered statistically significant. **Results:** Of the dentists evaluated, 37% (42% of the males and 31.4% of the females) reported being smokers. **Conclusions:** The prevalence of smokers among dentists in the Federal District is above the national average for the adult population, which is approximately 32%. Although there was a predominance of males, the high number of female dentists who reported being smokers was a worrisome finding.

Keywords: Dentists; Smoking; Prevalence.

Resumo

Objetivo: Determinar a prevalência do tabagismo entre os odontólogos do Distrito Federal. **Métodos:** Realizou-se um estudo transversal descritivo do tipo inquérito, no segundo semestre de 2004, com 446 dentistas residentes no Distrito Federal. As informações sobre o hábito tabágico foram obtidas utilizando-se o questionário da Organização Mundial de Saúde validado e adaptado no Brasil pelo Instituto Nacional de Câncer. Foi considerado fumante regular o indivíduo que fumasse no mínimo um cigarro/dia há pelo menos seis meses antes do estudo. A apresentação dos resultados foi realizada a partir de tabelas e gráficos de distribuição de freqüências, que foi analisada pela estatística descritiva com médias e desvio padrão e cálculo da razão de prevalência. A comparação entre as variáveis distintas foi feita utilizando-se o teste qui-quadrado e foram consideradas diferenças estatisticamente significativas sempre que $p < 0,05$. **Resultados:** Declararam-se fumantes 37% dos dentistas, ou seja, 42% dos homens e 31% das mulheres. **Conclusões:** A prevalência de fumantes entre os dentistas no Distrito Federal está acima da média nacional para a população adulta, que é cerca de 32%. Houve predomínio do sexo masculino entre os dentistas fumantes, mas o número de mulheres fumantes foi preocupante.

Descritores: Odontólogos; Tabagismo; Prevalência.

Introduction

According to the World Health Organization (WHO), the number of deaths worldwide due to tobacco-related diseases is approximately 5 million per year. A recent study showed that, every 10 s, one person dies prematurely because of tobacco consumption.[1] It is estimated that, if nothing is done, the annual number of deaths due to tobacco use in developing countries will reach 7 million by 2020.[2] In Brazil, one-third of the adult population smokes,[3] and, according to data from the *Instituto Nacional de Câncer* (INCA, National Cancer Institute), the estimated annual number of smoking-related deaths is 200,000.[4]

Dentists, like any healthcare workers, should set an example to smoking patients and alert them to health risks posed by smoking,[5-8] including the risk of periodontal disease[8-12] and oral cancer.[5,13,14] Smoking is believed to be the main risk factor for the occurrence of oral cancer, since approximately 80 to 90% of cases are associated with the smoking habit.[5,14]

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Other oral disorders related to the use of tobacco include labiopalatal clefts in children born to smoking mothers, dental caries, leukoplasia, halitosis and nicotinic stomatitis, as well as abnormal healing and osteointegration of dental implants.[5,10-12,15,16]

Despite being aware of all the negative effects caused by cigarettes, dentists have been of little help in anti-smoking campaigns and programs.[1,5,6,17] In addition, there have been no Brazilian studies regarding the role of dentists in the control of smoking or regarding the prevalence of smoking in this population. Therefore, the objective of the present study was to determine the prevalence of smoking among dentists in the Federal District of Brasília, Brazil.

Methods

A descriptive, cross-sectional survey involving dentists in the Federal District was conducted in the second semester of 2004. The number of dentists residing in the Federal District was obtained from the Federal District Regional Dentistry Board, which provided a list of 4644 dentists. The sample size was calculated based on this number and on the prevalence of smoking in the adult Brazilian population (32%). The sample consisted of 446 dentists residing in various cities within the greater metropolitan area of the Federal District. The participants were randomly selected by drawing lots.

Data regarding the smoking habit were obtained using a WHO questionnaire translated and validated for use in Brazil by the INCA (Annex 1). The questionnaire is self-reported and consists of 17 smoking-related questions divided into three domains. The questions are directed at regular smokers, occasional smokers, former smokers and nonsmokers. Individuals who had smoked a minimum of one cigarette per day for at least 6 months prior to the study outset were classified as regular smokers, those who had been smoking less than one cigarette per day for at least 6 months were classified as occasional smokers, those who had smoked and stopped smoking at least 6 months prior to the study outset were classified as former smokers, and those who had never smoked were classified as nonsmokers.

The questionnaire was applied by previously trained dental students from the Planalto Central School of Dentistry, who volunteered for this study. The questionnaire was applied at the workplace of the dentists after they had received information and basic guidance regarding the objectives of the study.

Table 1 - Demographic characteristics and percentage values obtained from the 446 questionnaires completed by dentists working in the Federal District of Brasília, Brazil.

Variable	%
Gender	
Male	52.4
Female	47.6
Smokers	
Male	42.0*
Female	31.4
Nonsmokers	
Male	52.4
Female	62.4
No data	
Male	5.6
Female	6.2

*$p < 0.05$ *vs.* female dentists.

The distribution of frequencies was analyzed using descriptive statistics (means and standard deviations), as well as calculation of prevalence rates. The different variables were compared using the chi-square test, and values of $p < 0.05$ were considered statistically significant.

Results

A total of 446 questionnaires properly filled out by the dentists were analyzed, and the results are presented in Table 1. Of the corresponding 446 participants, 255 (57.2%) reported being nonsmokers, 98 (22%) reported being regular

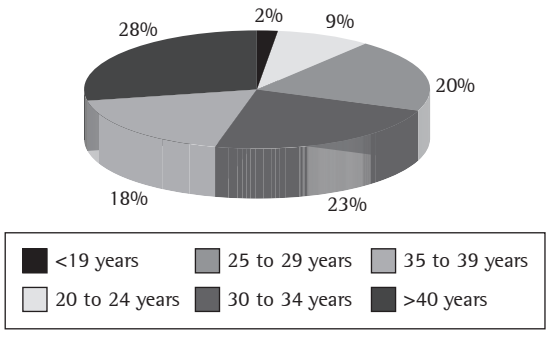

Figure 1 - Age group distribution among the dentists who smoke working in the Federal District of Brasília, Brazil.

smokers, 67 (15%) reported being occasional smokers, and the remaining 26 (5.8%) did not provide any information.

In the sample as a whole, there were 234 male dentists (52.4%) and 212 female dentists (47.6%). Of the 234 male dentists, 98 (42%) reported being smokers, compared with 66 (31.4%) of the 212 female dentists ($p < 0.05$).

Of the 446 individuals interviewed, 101 (22.6%) were between the ages of 30 and 34, and 123 (27.6%) were over the age of 40. Analysis of the distribution of age groups according to the smoking category showed that prevalence of being a regular smoker was higher (46%) among individuals aged 35 years or older (Figure 1). The mean age at which individuals started smoking was 17.1 ± 3.8 years (range, 10 to 35 years).

The mean number of cigarettes smoked per day was 11.5 ± 7.3 (range, 1 to 40). Of the 165 smoking dentists, 41 (24.8%) smoked 1 to 5 cigarettes per day, and 37 (22.4%) smoked 6 to 10 cigarettes per day (Table 2).

Discussion

Our results indicate that 370 out of every 1000 dentists in the Federal District are exposed to smoking, i.e., based on the calculation of the ratio between non-exposed and exposed individuals, 2 out of 3 dentists have never smoked. The prevalence of smoking was found to be higher among dentists in the Federal District than among adults in the general population of Brazil (37 *vs.* 32%). In contrast, a much lower prevalence was observed among dentists in Berlin, Germany, where 46 (9.5%) of a sample of 483 stated that they were regular smokers.[7]

Table 2 - Sample in percentages according to the number of cigarettes smoked per day among dentists who smoke working in the Federal District of Brasília, Brazil.

	Occasionally (%)	Daily (%)	Total (%)
1 to 5 cigarettes/day	49.3	8.2	24.8
6 to 10 cigarettes/day	22.4	22.4	22.4
11 to 15 cigarettes/day	1.5	28.6	17.6
16 to 20 cigarettes/day	-	26.5	15.8
≥21 cigarettes/day	-	9.2	5.4
No data	26.8	5.1	13.9
Total	100.0	100.0	100.0

In the present study, 42% of the male dentists and 31.4% of the female dentists reported being smokers. A recent trend toward an increase in smoking among women has been observed in several countries. A recent epidemiological study on smoking[4] reported a nearly worldwide increase in the smoking habit among women, the exceptions including certain developed countries such as Australia, Canada, the United States and the United Kingdom. In addition, despite the fact that the prevalence of smoking remains higher among men than among women, regardless of age bracket, the overall numbers of women who smoke are increasing sharply.

In a survey involving 613 dentists in Jordan,[18] smokers accounted for 215 (35%), 178 (83%) of those being daily smokers. This is higher than the 27% prevalence reported for the adult Jordanian population. Two-thirds of the professionals who participated in the survey were men under the age of 40. In the present study, the prevalence of smoking was highest (46%) among individuals over 35 years of age.

Regarding the number of cigarettes smoked per day, the mean number of cigarettes smoked in our sample (11.53 ± 7.3) is comparable to that reported in another randomized study involving a sample of 739 patients, 200 of whom were smokers, with a mean age of 43 years.[19] In that study, the mean number of cigarettes smoked per day was 16 (range, 5 to 40). In the study conducted in Jordan,[18] one-fifth of the dentists reported that they smoked 20 cigarettes or more per day.

Our results should serve as a warning to women, since, until recently, the incidence of oral cancer was much higher among men. However, the number of cases among women is increasing, with smoking being the main risk factor for the development of cancer in the female population.[5] According to the INCA, in 2003, oral cancer was the sixth most common type of cancer among men and the eighth most common type among women.[5] Other studies also report a higher prevalence of smoking among men, including dentists[5] and health professionals in general.[20] Some authors[5] state that oral cancer can no longer be regarded as a disease of the elderly since it has become common in individuals between 35 and 40 years of age.

The mean age at which the individuals in our study started smoking was 17.1 ± 3.8 years. In a study

conducted in the south of Brazil and involving individuals between the ages of 10 and 19,[4] it was found that 55% started smoking between 13 and 15 years of age, and that 2.5% started smoking between the ages of 7 and 12. In addition, the author suggested that 90% of individuals who start smoking in this age bracket become nicotine dependent by the age of 19. In the present study, no significant difference was observed between genders in terms of the prevalence of smoking. In the study conducted in Jordan,[18] 82% of the dentists who smoked had also started smoking during adolescence. This age, when adolescents periodically visit a dentist still accompanied by their parents, provides an opportunity for the dentist to intervene and to raise awareness regarding the negative effects of smoking. In this respect, the literature emphasizes the importance of dentists in the context of smoking prevention and education in public health.[6,8,9] Some authors[11] have suggested that the oral health of smokers requires greater attention on the part of dentists than does that of nonsmokers, due to the lower priority that the former give to their health. In addition to diagnosing and treating oral lesions, dentists could play an active role in antismoking campaigns and programs, alerting their patients to smoking-related diseases in general.[4-7]

Among the dentists who participated in the survey in Jordan,[18] 86.6% believed that dentists should set an example by being nonsmokers, and 77% agreed that dentists should be involved in smoking cessation counseling. However, only 38.3% of the dentists thought that they could convince their patients to quit smoking, and 46.7% believed that dental treatment was more important than smoking cessation counseling. In the study conducted in Berlin, only 26.6% of the dentists evaluated reported that they explained the adverse effects of smoking to their patients.[7] Other studies confirm this low involvement of dentists in counseling regarding the negative effects of smoking.[8,12,14,21] In addition, dentists see lack of time, competence and training as major obstacles to providing appropriate information to smoking patients.[7,14,17,20] In a study involving 139 dental students, 23% showed no interest in receiving instruction regarding the promotion of smoking cessation.[8] Among dentists, periodontists are those who most frequently alert their patients to the risks of smoking.[9]

The high prevalence of smoking among dentists might result from the high stress level associated with working in the field of dentistry.[22,23] Since stress can be a significant contributing factor to the smoking habit,[24] this would explain the high prevalence of smoking among dentists. In 1978, Forrest showed that 25% of the dentists are more stressed than the general population.[22] According to a recent study sponsored by the International Stress Management Association, dentists, together with other health professionals, rank third among stressed professionals.[23]

Dentists who were regular smokers themselves were less likely to inquire about the risky habits of their patients compared with those professionals who had either never smoked or were former smokers.[1] The role of the dentist in maintaining oral health is vital and is not limited to dental treatment. Patients often visit their dentists more often than they visit their physicians, which gives dentists the opportunity to provide counseling and support more frequently.[12]

In conclusion, the prevalence of smokers among dentists in the Federal District is above the national average for the adult population in Brazil, which is worrisome, since it involves a population of health professionals. Although there was a predominance of males among dentists who reported being smokers, the number of female dentists who reported being smokers is a source of concern and serves as a warning since smoking is also the main risk factor for the development of cancer in women. We emphasize the urgent need for better information to raise the awareness of dental students about smoking and for the treatment of current smokers, since health professionals, including dentists, still graduate without receiving important information about smoking. Since smoking rates among dentists are very high, dentists still have to be convinced of the health imperative of smoking prevention and smoking cessation. Dentists who smoke need help with their own smoking cessation and should be convinced to set a good example. Instruction in how to advise patients regarding smoking cessation and smoking prevention programs should be a compulsory component of dental teaching and practice.

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Annex 1 - World health organization questionnaire on the use of tobacco (adapted)

1. Age: (Years) Gender: M ( ) F ( ) Religion: _____

2. Schooling: (Grade): ____ Place of residence: _____ Family income: R$_____

3. Smoking habit: ( ) Never ( ) Occasionally ( ) Every day

4. How many cigarettes do you smoke a day? (Number of cigarettes): ___

5. How old were you when you first smoked a cigarette? (Age): ___

6. How old were you when you started smoking every day? (Age): ___

7. How long after waking up do you smoke your first cigarette?
( ) Less than 5 min ( ) 5 to 29 min ( ) 30 to 60 min ( ) More than 60 min

8. If you used to smoke and stopped, how long has it been since you quit? _____

9. Are you thinking about quitting smoking? Yes ( ) No ( )

10. Do you think that smoking is hazardous to your health? Yes ( ) No ( )

11. Do you think that smoking is hazardous to the health of nonsmokers? Yes ( ) No ( )

12. Do you drink alcohol? Yes ( ) No ( )

13. Do you use any other drugs? Yes ( ) No ( ) Which? _____

14. Does your father smoke? Yes ( ) No ( )

15. Does your mother smoke? Yes ( ) No ( )

16. Does anyone else smoke in your house? Yes ( ) No ( ) Who? _____

17. Why do you smoke? _____
_____
_____
_____
_____