

# Original Article

## Profile of smokers seeking a smoking cessation program\*

Perfil dos fumantes que procuram um centro de cessação de tabagismo

Sergio Ricardo Santos<sup>1</sup>, Maria Stela Gonçalves<sup>2</sup>,  
Fernando Sergio Studart Leitão Filho<sup>3</sup>, José Roberto Jardim<sup>4</sup>

### Abstract

**Objective:** To define the profile of smokers who seek professional assistance through a smoking cessation program and to compare smoker profiles among males, females and elderly people. **Methods:** Two-hundred and three smokers were prospectively evaluated. The participants completed questionnaires related to smoking history, history of psychiatric disorders, depression, anxiety and nicotine dependence as well as a general self-report questionnaire. **Results:** In this sample, 58.6% of the individuals were female (119). The mean age was  $45.3 \pm 12.0$  years, with no statistically significant difference between genders ( $p = 0.391$ ). The majority of the individuals in the sample (84.2%) presented socioeconomic class C or above. Sixty-three percent had at least a high school education. Depression was more often referred to by women, and the difference between genders was borderline significant ( $p = 0.069$ ). However, when depression was evaluated using the Beck Depression Inventory, there was no statistically significant difference between genders and between elderly and nonelderly people. **Conclusions:** In the profile of the smokers who sought assistance, we identified aspects (such as being female and having been diagnosed with depression) that are known predictors of treatment failure. This shows the importance of carrying out a complete pre-evaluation of the profile of a smoker who seeks a smoking cessation program. Thus, procedures can be adopted prior to and during the treatment of the smoker, with the objective of increasing treatment success rates.

**Keywords:** Anxiety; Depression; Smoking.

### Resumo

**Objetivo:** Definir o perfil do fumante que procura um serviço de cessação do tabagismo e comparar os perfis observados em homens, mulheres e idosos. **Métodos:** Foram avaliados, prospectivamente, 203 fumantes. Os indivíduos responderam questionários relacionados ao histórico tabagístico, antecedentes psiquiátricos, questionários específicos para depressão e ansiedade, questionário de dependência à nicotina e um questionário geral auto-aplicável. **Resultados:** Nesta amostra, 58,6% dos indivíduos eram do sexo feminino (119). A média de idade para a amostra foi  $45,3 \pm 12,0$  anos, sem diferença significativa entre os sexos ( $p = 0,391$ ). A maioria da amostra estudada apresentou classificação econômica C ou superior (84,2%). Sessenta e três por cento dos fumantes possuíam pelo menos o segundo grau completo. Depressão foi muito mais referida entre as mulheres com diferença estatística marginalmente significativa ( $p = 0,069$ ). Porém, avaliando-se depressão pelo Inventário Beck de Depressão, não houve diferença estatisticamente significativa entre os sexos e entre idosos e não-idosos. **Conclusões:** Foram identificados aspectos no perfil dos fumantes que procuraram este serviço que já são reconhecidos na literatura especializada como preditores de insucesso no tratamento (como pertencer ao sexo feminino e diagnóstico de depressão). Isto demonstra a importância de se realizar uma completa avaliação prévia do perfil do fumante que procura um centro especializado, para que medidas possam ser tomadas antes e durante a abordagem do fumante, com o objetivo de se aumentar as taxas de sucesso no tratamento.

**Descritores:** Ansiedade; Depressão; Tabagismo.

\* Study carried out at the *Núcleo de Apoio à Prevenção e Cessação do Tabagismo* (PrevFumo; Prevention and Smoking Cessation Support Center) of the *Universidade Federal de São Paulo* – UNIFESP, Federal University of São Paulo – São Paulo, Brazil.

1. Assistant Professor in the Pulmonology Department. *Universidade Federal de São Paulo/Escola Paulista de Medicina* – UNIFESP/EPM, Federal University of São Paulo/Paulista School of Medicine – São Paulo, Brazil.

2. Masters from the *Universidade Federal de São Paulo/Escola Paulista de Medicina* – UNIFESP/EPM, Federal University of São Paulo/Paulista School of Medicine – São Paulo, Brazil.

3. Physician in the Pulmonary Rehabilitation Center of the Pulmonology Department. *Universidade Federal de São Paulo/Escola Paulista de Medicina* – UNIFESP/EPM, Federal University of São Paulo/Paulista School of Medicine – São Paulo, Brazil.

4. Full Professor in the Pulmonology Department. *Universidade Federal de São Paulo/Escola Paulista de Medicina* – UNIFESP/EPM, Federal University of São Paulo/Paulista School of Medicine – São Paulo, Brazil.

Correspondence to: José Roberto Jardim. Rua Botucatu, 740, 3º andar, CEP 04023-062, São Paulo, SP, Brasil.

Tel 55 11 5549-1830. Fax 55 11 5573-5035. E-mail: joserjardim@yahoo.com.br

Financial Support: None.

Submitted: 18 June 2007. Accepted, after review: 7 January 2008.

## Introduction

According to data from the World Health Organization, there are over 1.3 billion smokers worldwide, and smoking is responsible for approximately 5 million deaths annually. In 2020, the number of such deaths will reach 10 million per year.<sup>(1)</sup>

In addition to the characteristics of tobacco consumption, factors such as age, gender, economic conditions, sociocultural status, age at smoking onset and degree of nicotine dependence, as well as a history of anxiety or depression, must be evaluated prior to monitoring, since they can affect abstinence rates in the short and long terms.<sup>(2,3)</sup>

It is known that smokers with higher degree of dependence are more likely to participate in an organized smoking cessation program.<sup>(4)</sup> It is also known that, in most studies on smokers seeking such treatment in Brazil and in other countries, women constitute the majority of the sample. In addition, at these centers, lower success rates are commonly observed in women.<sup>(5-8)</sup>

Regarding psychiatric history, previous studies have shown that smokers with a history of depression have more difficulty in quitting smoking.<sup>(9-11)</sup> In one study, it was observed that smokers with depression have a three times greater chance of continuing smoking after the smoking cessation treatment, when compared with smokers without a history of depression.<sup>(11)</sup>

Regarding the particularities of smoking in elderly individuals, a study conducted in Brazil showed that, in men, smoking prevalence is negatively associated with higher educational level (over 8 years of schooling), advanced age (over 80) and family income. Conversely, poor perception of health and not being married were associated with a greater risk of continuing smoking.<sup>(12)</sup>

Despite the great number of epidemiological surveys in the international literature that describe the smoking epidemic, there is still a lack of studies that increase knowledge of the profile of the smokers who seek centers specialized in smoking cessation treatment. The tendency toward modeling new smoking cessation programs to the target population makes it necessary to investigate this profile in order to achieve better results.

The objectives of this study were to define and to analyze the general profile of the smoker who

seeks support in a specialized smoking cessation program, according to stratification by gender, age bracket and presence of psychiatric comorbidities (anxiety and depression).

## Methods

In a prospective study, we evaluated 203 smokers admitted to the *Núcleo de Apoio à Prevenção e Cessação do Tabagismo* (PrevFumo; Prevention and Smoking Cessation Support Center) of the Federal University of São Paulo, located at the *Lar Escola São Francisco*, in the city of São Paulo, Brazil, from January of 2002 to May of 2003. This smokers sought PrevFumo after contact with articles in the media (radio shows, television programs, newspapers or magazines), after being referred by a health professional or on the recommendation of former participants.

Smokers enrolled in the Smoking Cessation Program of the PrevFumo completed, during their initial evaluation, an epidemiological survey consisting of multiple-choice questions on the following topics: personal data; education; smoking status; nicotine dependence evaluated through the Fagerström test<sup>(13)</sup>; factors referring to dependence and to the decision to overcome it; history of other diseases; socioeconomic classification; self-reported psychiatric history; and degree of anxiety or depression evaluated using the State-Trait Anxiety Inventory (STAI)<sup>(14)</sup> and the Beck depression inventory (BDI),<sup>(15)</sup> both of which have been translated and validated for use in Brazil. Smokers also completed a general self-report questionnaire, developed by the PrevFumo staff, composed of 11 questions referring to motives for smoking, knowledge on the damages caused by smoking, reasons for quitting, timing of the decision to quit, number of previous attempts, the length of time the smokers were able to refrain from smoking, the number of smokers in the home (including the participant), whether the smokers believe that help is needed in order to quit smoking, whether the smokers derive pleasure from smoking, whether smokers agree with the idea of separate smoking areas, whether smokers agree with laws designed to protect nonsmokers, opinion about anti-smoking measures and which situations could be strong reasons to quit smoking.

Age brackets were as follows: <15 years of age; 15-24 years of age; 25-44 years of age, 45-64 years

of age and  $\geq 65$  years of age.<sup>(16)</sup> However, due to the small number of elderly patients in this sample, elderly individuals were defined as those  $\geq 60$  years of age.

The present study was approved by the Federal University of São Paulo Ethics in Research Committee.

Regarding the statistical analysis, the data obtained through the questionnaires were first entered into a database, after which a descriptive analysis was carried out based on summary-measurements and contingency tables. Subsequently, Student's t-tests were applied for unpaired samples, together with the chi-square test and Fisher's exact test, according to the nature of the variables considered at each time point.

## Results

The mean age of the sample was  $45.3 \pm 12.0$  years, and 58.6% (119) of the patients were women. The mean age of the men in the sample was  $44.4 \pm 11.3$  years, compared with  $45.8 \pm 11.8$  years for the women ( $p = 0.391$ ).

The Brazilian Market Research Association Brazilian Economic Classification Criterion was used in order to stratify the interviewees by socioeconomic class, ranging from class A1, which represents families with the greatest earning power, to class E, which represents those with the least.<sup>(17)</sup> Most of the studied sample was concentrated in class B2 (27.1%) and class C (32.0%). There were no differences in terms of socioeconomic class between genders ( $p = 0.578$ ) or between elderly and nonelderly individuals ( $p = 0.149$ ).

Regarding education, 63% of the smokers at least a high school degree (Table 1). There were no

statistically significant differences between genders ( $p = 0.931$ ). Regarding schooling, there was statistically significant difference in the comparison between elderly smokers and the other smokers ( $p = 0.002$ ).

In evaluating reports of psychiatric history (depression, phobias, alcoholism, anorexia, bulimia and anxiety), we observed that depression and anxiety were the mental disorders most frequently described (by 40.4 and 69%, respectively). Depression was much more frequently reported by women, with borderline statistical significance ( $p = 0.069$ ), whereas alcoholism was predominant among men ( $p < 0.001$ ). Anorexia and bulimia were not reported. No significant difference was observed between elderly and nonelderly individuals.

In addition to the psychiatric history report, depression and anxiety were investigated through the application of the BDI and the STAI, respectively.

The BDI evaluation categorizes the interviewees in four levels: minimal, which corresponds to absence of depression, with a score ranging from 0 to 11; mild depression, with a score ranging from 12 to 19; moderate depression, with a score from 20 to 35, and severe depression, with a score from 36 to 63. In the general population the BDI presented mean value of  $13.7 \pm 9.4$  (range, 0-52 points). Mild, moderate or severe levels of depression were seen in 50.2% of the individuals evaluated. There was no statistically significant difference between genders or between elderly and nonelderly individuals.

Trait-anxiety and state-anxiety were evaluated only in the 128 smokers who had at least 12 years of schooling, in accordance with the minimum requirement for the application of the STAI.<sup>(14)</sup> This classification translates to a qualitative evaluation, categorized as follows:

**Table 1** - Level of education.

Classification	General		Male		Female		Elderly	
	n	%	n	%	n	%	n	%
A	8	3.9	3	3.5	5	4.2	4	16.7
B	36	17.7	14	16.7	22	18.5	9	37.5
C	31	15.3	11	13.1	20	16.8	1	4.1
D	67	33.0	30	35.7	37	31.1	4	16.7
E	61	30.0	26	31.0	35	29.4	6	25.0
Total	203	100.0	84	100.0	119	100.0	24	100.0

A: Illiterate/less than 4 years of schooling; B: more than 4 years of schooling/less than 8 years of schooling; C: more than 8 years of schooling/less than 12 years of schooling; D: more than 12 years of schooling/college or university (non-graduate); E: college or university (graduate).

**Table 2** – Evaluation of trait-anxiety, according to the State-Trait Anxiety Inventory.

Classification	General		Male		Female		Elderly	
	n	%	n	%	n	%	n	%
High	7	5.5	6	10.7	1	1.4	0	0.0
Medium-high	32	25.0	11	19.6	21	29.2	3	30.0
Medium	70	54.7	29	51.8	41	56.9	4	40.0
Medium-low	14	10.9	8	14.3	6	8.3	3	30.0
Low	5	3.9	2	3.6	3	4.2	0	0.0
Total	128	100.0	56	100.0	72	100.0	10	100.0

- low: below the 10<sup>th</sup> percentile
- medium-low: between the 11<sup>th</sup> and the 24<sup>th</sup> percentile
- medium: between the 25<sup>th</sup> and the 75<sup>th</sup> percentile
- medium-high: between the 76<sup>th</sup> and the 95<sup>th</sup> percentile
- high: over the 95<sup>th</sup> percentile

At the low anxiety level, the individual presents low trait- or state-anxiety; at the intermediate levels, the individual adequately controls feelings of anxiety, without presenting evident signs of trait- or state-anxiety; and at the high anxiety level, the individual presents high trait- or state-anxiety.

The STAI score for state ranged from 24 to 77 points, with a mean of  $44.3 \pm 10.0$ . The STAI score for trait ranged from 22 to 76 points, with a mean of  $45.9 \pm 10.0$ . There were no statistically significant differences between genders or between elderly and nonelderly individuals (Tables 2 and 3).

There were no statistically significant differences between genders in terms of the mean duration of smoking, the mean cigarette consumption per day and the level of nicotine dependence, as assessed using the Fagerström tolerance questionnaire (Table 4). The age at onset of the smoking habit was lower among the men ( $p = 0.096$ ).

No statistically significant differences were found between elderly smokers and nonelderly smokers in terms of age at smoking onset, mean cigarette consumption per day and degree of nicotine dependence. For obvious reasons, tobacco intake was greater among the elderly individuals ( $p < 0.001$ ).

### *General self-report questionnaire*

Probable factors which led the interviewee to become a smoker were listed, and the interviewee could choose more than one alternative. The answers most frequently given were “peer pressure” (53.2%) and “curiosity” (49.3%).

On the next question (“What most encouraged you to quit smoking?”), nonexcluding alternatives were also listed, and the most frequently chosen were “my own volition” (47.3%), “prevalence of diseases” (40.4%) and “family pressure” (33.5%). Among the elderly individuals, noteworthy responses included “the potential worsening of diseases” (66.7%), “medical advice” (58.3%) and “my own volition” (45.8%). Of those three answers, the first two were the only ones on the self-report questionnaire that presented a statistically significant difference between the elderly and nonelderly smokers ( $p = 0.002$ , for both answers).

**Table 3** – Evaluation of state-anxiety, according to the State-Trait Anxiety Inventory.

Classification	General		Male		Female		Elderly	
	n	%	n	%	n	%	n	%
High	5	3.9	4	7.1	1	1.4	0	0.0
Medium-high	33	25.8	15	26.8	18	25.0	2	20.0
Medium	70	54.7	28	50.0	42	58.3	6	60.0
Medium-low	8	6.3	4	7.1	4	5.6	2	20.0
Low	12	9.4	5	8.9	7	9.7	0	0.0
Total	128	100.0	56	100.0	72	100.0	10	100.0

Regarding the time between making the decision to quit smoking and the initial interview (questionnaire completion), 47.8% of the interviewees reported periods of less than 3 months, 20.7% reported periods of 3 to 12 months, and 31.5% reported periods of over 12 months.

The number of previous attempts to quit smoking was also addressed: 18.7% of the individuals had never tried to quit; 61% had tried 1 to 3 times; and 20.3% had tried 4 or more times. There was no statistically significant difference between the patients with depression and those without, nor between those with anxiety and those without, in terms of the mean number of attempts to quit smoking ( $p = 0.626$  and  $p = 0.518$ , respectively). Subsequently, the interviewees were asked about the maximum time abstaining from smoking: 36.4% reported only a few hours to 24 h; 18.2% reported 2 to 7 days; 18.7% reported 8 to 30 days; 7.4% reported 31 to 90 days; 12.3% reported 91 days to 12 months; and 6.9% reported more than 12 months.

Regarding the number of smokers at home (including the interviewee), 58.1% reported that they were the sole smoker at home; 26.1% reported 2 smokers; 10.8% reported 3 smokers; 3.0% reported 4 or more smokers; and 2% did not answer.

Of the smokers interviewed, 96% stated that they needed help to quit smoking. Asked whether they experience pleasure when smoking, 70.4% of the interviewees answered positively. Nearly all of the smokers (94.6%) agreed with the idea of separate smoking and nonsmoking areas.

The reasons for quitting smoking were investigated using a multiple-choice question, and we observed that the desire to promote health and avoid disease was the reason most frequently given (by 91.1%), followed by the desire to set a good example for the younger generations (by 62.6%) and the desire to show independence and self-control (by 53.2%); religious belief was the reason least mentioned (14.3%).

## Discussion

The profile found for the 203 smokers evaluated at PrevFumo was characterized by the following: female predominance; a mean age of 45.3 years; higher socioeconomic status; higher level of education; a mean age at onset of smoking of 16 years of age; a mean consumption of 30 cigarettes a day; an elevated level of nicotine dependence; and a mean duration of smoking of approximately 30 years. Half of the population studied presented some level of depression.

The predominance of women who sought professional support is in accordance with the findings of previous studies. This can be explained by factors related to greater difficulty in quitting among the female population, such as the higher prevalence of depression among women, the stress related to balancing work/home duties and the difficulty in controlling weight gain during cessation attempt, as well as the fact that smoking reportedly makes women feel more secure in difficult or sad situations.<sup>(6,8)</sup> However, the finding that treatment-seeking behavior was more common among women might be simply associated with greater ease in recognizing difficulties in self-health care and in seeking specialized help.

Level of education has recently been described as one of the most important sociodemographic variables in studying smoking. In population studies, the prevalence of smoking has been higher in individuals with low or medium education levels.<sup>(18-20)</sup> In our study, most of the population in question had at least 12 years of schooling, an education level superior to that of the Brazilian population in general. This can be explained by the fact that smokers who seek support to quit smoking are reportedly those who have greater access to information in general, principally in terms of health care (including all of the concepts of prevention). Smokers with a low level of education, on the margins of government programs for health care education and disease

**Table 4** - Smoking history and nicotine dependence.<sup>a</sup>

	Fagerström	Number of years smoking	Age at onset	Number of cigarettes/day
General	6.2 ± 2.1 (0.0-10.0)	29.3 ± 12.1 (2.0-68.0)	15.6 ± 4.0 (5.0-30.0)	29.8 ± 14.4 (2.0-80.0)
Male	5.9 ± 2.3 (0.0-10.0)	29.0 ± 12.8 (2.0-68.0)	15.0 ± 3.8 (7.0-26.0)	31.3 ± 15.0 (5.0-80.0)
Female	6.3 ± 1.9 (1.0-10.0)	29.6 ± 11.6 (5.0-55.0)	15.9 ± 4.1 (5.0-30.0)	28.8 ± 13.9 (2.0-60.0)
Elderly	6.1 ± 2.3 (2.0-10.0)	50.4 ± 6.4 (40.0-68.0)	15.4 ± 4.5 (5.0-24.0)	33.3 ± 15.0 (10.0-60.0)

<sup>a</sup>Data are presented as mean ± standard deviation and variation (minimum-maximum).

prevention, would seek these centers of excellence in dependence treatment less frequently, which does not mean, however, that they have less difficulty in quitting smoking.<sup>(18,21)</sup>

The observation that the age at onset of smoking is becoming increasingly younger is due to the fact that it is also becoming easier for adolescents to obtain cigarettes. In Brazil, a study of the Brazilian Center for Information on Psychotropic Drugs showed that the mean age at the onset of regular smoking is 13 years of age. Factors related to the influence of friends, curiosity and presence of parents who smoke are described as relevant for the onset of smoking. In the present study, we found the mean age at onset of smoking to be higher (15.6 years of age), without a clear explanation for this difference.<sup>(19-22)</sup>

Anxiety was the event most frequently reported in the psychiatric history section of the questionnaire employed. However, the evaluation using the STAI questionnaire showed that this percentage was lower than reported by the constituents of the population themselves. In contrast, the rate of depression assessed using the BDI was higher than the self-reported rate. This information corroborates the finding that many smokers who need support to quit smoking ignored having any level of depression, which would explain the failures in previous attempts. In addition, many of those believed themselves only to be anxious about questions related to daily life and put off seeking specialized help for diagnosis and treatment of depression, as well as of the smoking habit. There have been no reports in the literature to date that might confirm such findings, highlighting the need for more studies in order to evaluate these issues further.

Previous recognition of psychiatric comorbidities, such as depression, lies in the possibility of promoting continuous training for medical staff for the early detection of signs and symptoms, of seeking structured investigation tools for the diagnostic confirmation in order to opt for behavioral and pharmacological treatment strategies which can minimize the negative impact on the success rates of the treatment.

In this study, no statistically significant difference was observed in the number of previous attempts to quit smoking when comparing patients with or without depression; the same occurred for anxiety. Patients with psychiatric disorders would

be expected to report greater difficulty in quitting smoking, that is, that they sought the smoking treatment after a greater number of frustrated attempts. However, this finding can be explained by the hypothesis that anxious or depressed smokers try to quit less frequently than do smokers without these psychiatric comorbidities, impeding the finding of difference in the reported number of attempts prior to seeking professional support. This lower number of attempts in smokers with psychiatric disorders could be attributed to the difficulty in changing behaviors or to the more frequent triggering of signs and unpleasant clinical symptoms after the reduction of the smoking consumption (which would inhibit serious attempts to quit smoking definitively).

For the group of elderly individuals (over 60 years of age), a significant difference was observed ( $p < 0.05$ ) in relation to education (the level of education being lower than that observed in the rest of the sample). Today there is broader access to education, which could explain this difference. In a recently published study, 54.4% of elderly Brazilians had less than three years of schooling; in the state of São Paulo, the mean number of years of schooling was 4.4, slightly higher than the national mean (3.4 years).<sup>(23)</sup> In our sample, we found no significant differences between elderly male smokers and elderly female smokers. No differences in prevalence of depression and anxiety were found between elderly and nonelderly individuals. Twenty-one percent of the elderly individuals in our sample had never attempted to quit smoking, whereas 25% had attempted to quit 5 times or more.

In the present study, elderly individuals who had undergone the profile evaluation were referred for treatment in mixed groups, that is, with smokers of different age brackets. Recent studies have shown that, although it is important to recognize the elderly individuals in the general population of smokers who seek support to quit smoking, there is no evidence that those elderly individuals should be approached separately, in exclusive groups.<sup>(24-28)</sup>

It is of note that studies such as this one are limited by the characteristics of the participants. We did not evaluate other important subgroups of smokers, such as those who easily quit smoking (in general little dependent and not needing support to overcome smoking), smokers already severely affected by some disease related to smoking (due

to difficult or impossible access) and unmotivated smokers. Therefore, the findings presented here take on special relevance for professionals who work at clinics and referral centers (public or private) treating smokers who seek professional help to overcome smoking.

In conclusion, getting to know the profile of a patient who seeks support for smoking cessation can facilitate the detection of factors already recognized as predictors of treatment failure and not routinely investigated, although common among smokers, such as depression and anxiety.

## References

- Mackay J, Eriksen M, Shafey O. *The Tobacco Atlas*. 2nd ed. Atlanta: American Cancer Society; 2005.
- Brasil. Ministerio da Saude. Instituto Nacional de Cancer. *Abordagem e tratamento do fumante: consenso*. Rio de Janeiro: Brasil. Ministerio da Saude. Instituto Nacional de Cancer; 2001.
- Brasil. Ministério da Saúde. *Ajudando seu paciente a deixar de fumar*. Rio de Janeiro: INCA; 1997.
- Fiore MC, Novotny TE, Pierce JP, Giovino GA, Hatziandreu EJ, Newcomb PA, et al. Methods used to quit smoking in the United States. Do cessation programs help? *JAMA*. 1990;263(20):2760-5. Erratum in: *JAMA* 1991;265(3):358.
- Cohen S, Lichtenstein E, Prochaska JO, Rossi JS, Gritz ER, Carr CR, et al. Debunking myths about self-quitteing. Evidence from 10 prospective studies of persons who attempt to quit smoking by themselves. *Am Psychol*. 1989;44(11):1355-65.
- Sales MP, De Figueiredo MR, De Oliveira MI, De Castro HN. Outpatient smoking cessation program in the state of Ceará, Brazil: patient profiles and factors associated with treatment success. *J Bras Pneumol*. 2006;32(5):410-7.
- De Godoy I, Tanni SE, Coelho LS, Martin RS, Parenti LC, Andrade LM, et al. Smoking cessation program as a tool for the early diagnosis of chronic obstructive pulmonary disease. *J Bras Pneumol*. 2007;33(3):282-286.
- Fernandez E, Schiaffino A, Garcia M, et al. Prevalencia del consumo de tabaco en España entre 1945 y 1995: Reconstrucción a partir de las Encuestas Nacionales de Salud. *Med Clin (Barc)*. 2003;120(1):14-6.
- Glassman AH. Cigarette smoking: implications for psychiatric illness. *Am J Psychiatry*. 1993;150(4):546-53.
- Lopes FL, Nascimento I, Zin WA, Valença AM, Mezzasalma MA, Figueira I, et al. Smoking and psychiatric disorders: a comorbidity survey. *Braz J Med Biol Res*. 2002;35(8):961-7.
- Breslau N, Kilbey MM, Andreski P. Nicotine withdrawal symptoms and psychiatric disorders: findings from an epidemiologic study of young adults. *Am J Psychiatry*. 1992;149(4):464-9.
- Peixoto SV, Firmo JO, Lima-Costa MF. Factors associated to smoking habit among older adults (The Bambuí Health and Aging Study). *Rev Saude Publica*. 2005;39(5):746-53.
- Fagerström KO. Measuring degree of physical dependence to tobacco smoking with reference to individualization of treatment. *Addict Behav*. 1978;3(3-4):235-41.
- Spielberger CD, Biaggio A, Natalício LF. *Manual do IDATE*. Rio de Janeiro: CEPA; 1979.
- Gorenstein C, Andrade L. Validation of a Portuguese version of the Beck Depression Inventory and the State-Trait Anxiety Inventory in Brazilian subjects. *Braz J Med Biol Res*. 1996;29(4):453-7.
- Altman DG, editor. *Practical statistics for medical research*. London: Chapman & Hall; 1997.
- Critério de Classificação Econômica Brasil - Como utilizar o critério. Sociedade Brasileira de Pesquisa de Mercado. 1997; 2:31-2.
- Nerín I, Crucelaegui A, Mas A, Guillén D. Profile of smokers who seek treatment at a smoking cessation clinic [Article in Spanish]. *Arch Bronconeumol*. 2003;39(7):298-302.
- Maziak W. Smoking in Syria: profile of a developing Arab country. *Int J Tuberc Lung Dis*. 2002;6(3):183-91.
- Gallus S, Colombo P, Scarpino V, Zuccaro P, Apolone G, La Vecchia C. Smoking in Italy, 2002. *Tumori*. 2002;88(6):453-6.
- Siddiqui S, Ogbeide DO. Profile of smoking amongst health staff in a primary care unit at a general hospital in Riyadh, Saudi Arabia. *Saudi Med J*. 2001;22(12):1101-4.
- Carlini EA, Galduróz JC, Noto AR, Nappo SA. I Levantamento domiciliar sobre o uso de drogas psicotrópicas no Brasil: estudo envolvendo as 107 maiores cidades do país - 2001. São Paulo: Cebrid; UNIFESP; 2002.
- Instituto Brasileiro de Geografia e Estatística - IBGE. *Perfil dos Idosos Responsáveis pelos Domicílios no Brasil*; 2000. Rio de Janeiro: IBGE; 2000.
- Arday DR, Lapin P, Chin J, Preston JA. Smoking patterns among seniors and the medicare stop smoking program. *J Am Geriatr Soc*. 2002;50(10):1689-97.
- Appel DW, Aldrich TK. Smoking cessation in the elderly. *Clin Geriatr Med*. 2003;19(1):77-100.
- Boyd NR. Smoking cessation: a four-step plan to help older patients quit. *Geriatrics*. 1996;51(11):52-7; quiz 58.
- Morgan GD, Noll EL, Orleans CT, Rimer BK, Amfoh K, Bonney G. Reaching midlife and older smokers: tailored interventions for routine medical care. *Prev Med*. 1996;25(3):346-54.
- Ossip-Klein DJ, Carosella AM, Krusch DA. Self-help interventions for older smokers. *Tob Control*. 1997;6(3):188-93.