

Demographic Study of Tobacco Addiction in Health District 5, Valencia, Spain

R. Peris Cardells,^a I. Rico Salvador,^b P. Herrera de Pablo,^b A. Pérez Jiménez,^c F. Sánchez-Tóril López,^a and J.A. Pérez Fernández^a

^aServicio de Neumología, Hospital Arnau de Vilanova, Valencia, Spain.

^bResident Family Doctors, Hospital Arnau de Vilanova, Valencia, Spain.

^cDUE, Hospital Arnau de Vilanova, Valencia, Spain.

OBJECTIVES: To determine the number of smokers, their demographic characteristics, and the stages of change among patients visiting health care centers.

PATIENTS AND METHODS: Descriptive cross-sectional study carried out at 7 primary health care centers in Health District 5 of the Autonomous Community of Valencia.

RESULTS: An interview was given to 3633 people with a mean (SD) age of 55 (19) years, (range: 14-96 years). Women made up 61.7%, and 65% were seeking medical attention. Twenty-three per cent were current smokers (mean age 41.8 [15.2] years), 17.2% ex-smokers (60.6 [16.2] years), and 59.8% never smokers (58.4 [18.8] years). The stages of change were pre-contemplation for 32.1%, contemplation for 4.9%, chronic contemplation for 12.2%, preparation to quit for 6.8%, action for 2.3%, maintenance for 15.1%, and termination for 26.7%. According to current recommendations, it seems that between 23.6% and 44.7%, depending on category definitions, needed specific attention concerning tobacco dependence.

CONCLUSIONS: Twenty-three per cent of the patients attended by the primary care physician were smokers. More than half did not want to quit smoking and 1 in 10 were prepared to do so. Between 23.6% and 44.7% of the people who came to the primary care center needed specific attention concerning tobacco dependence.

Key words: Tobacco dependence. Stages of change. Primary health care.

Estudio demográfico del tabaquismo en el Área de Salud 5 de Valencia

OBJETIVOS: Determinar la prevalencia, los datos demográficos y los estadios de abandono del tabaquismo entre los pacientes que acuden al centro de salud.

PACIENTES Y MÉTODOS: Estudio descriptivo transversal en 7 centros de salud del Área Asistencial 5 de la Comunidad Valenciana.

RESULTADOS: Se entrevistó a 3.633 personas, con una edad media de 55 ± 19 años (extremos: 14-96 años). El 61,7% eran mujeres, y el 65% consultaba por motivos médicos. El 23% eran fumadores activos (41,8 ± 15,2 años), el 17,2% ex fumadores (60,6 ± 16,2 años) y el 59,8% nunca había fumado (58,4 ± 18,8 años). Los estadios de abandono fueron: pre-contemplación en el 32,1%, contemplación en el 4,9%, contemplación crónica en el 12,2%, preparación en el 6,8%, acción: en el 2,3%, mantenimiento en el 15,1% y finalización en el 26,7%. Teniendo en cuenta las normativas actuales, podrían precisar una acción específica sobre el tabaquismo del 44,7 al 23,6% de los pacientes, dependiendo de las condiciones que determinemos.

CONCLUSIONES: De los pacientes que acudían al médico de atención primaria, el 23% eran fumadores. De ellos, más de la mitad no querían dejar de fumar y uno de cada 10 estaría preparado para hacerlo. De los pacientes que acuden al centro de salud, entre el 23,6% y el 44,7% podría precisar una atención específica sobre tabaquismo.

Palabras clave: Tabaquismo. Estadios de cambio. Atención primaria.

Introduction

Smoking is currently considered to be an addictive, chronic, recurrent, treatable disease.^{1,2} Its importance lies in the fact that it is the primary cause of avoidable morbidity and mortality in the western world.^{3,4} In Spain, smoking causes 56 000 deaths a year.⁵ This

figure reveals smoking to be a major health problem and one that can and must be tackled on many fronts, from the press to political decision-making bodies, schools, companies, and, naturally, in primary and specialized health care settings. The authors, as members of the pneumology department and, within that, of a specialized smoking dependence unit at Hospital Arnau de Vilanova, are responsible for bringing specific care to patients in primary health care centers. In February 2000 we started, and undertook a pilot study⁶ which we are now completing to provide an epidemiological survey of smoking habits among

Correspondence: Dr. R. Peris Cardells.
Servicio de Neumología. Hospital Arnau de Vilanova.
San Clemente, 26. 46015 Valencia. España.
E-mail: rafa1680@separ.es

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patients visiting health clinics in Health District 5 of the Autonomous Community of Valencia, Spain.

In this study we examined the stages of change in smoking cessation in order to measure the attitude of the patient towards quitting. Smoking is a human behavior that passes through a series of stages described by Prochaska et al⁷ in their trans-theoretical model. The current model includes the following stages: pre-contemplation, contemplation, chronic contemplation, preparation, action, maintenance, termination, and relapse. These stages do not follow a linear progression but rather an elliptical or spiral one. The phases of smoking cessation or stages of change are important as they are one of the factors that determine the type of medical attention needed,^{1,8,9} the level,¹⁰ the support material and follow up,¹¹ and response to treatment.¹² Moreover, success is not only measured by the number that quit smoking but also by reduction in the harm being done¹³ and progression through the stages.^{11,14}

While we acknowledge the importance of work and school environments in the prevention and treatment of tobacco dependence, the target population of our study consisted of patients visiting health care clinics, access usually being via the assigned family doctor. Over 75% of the population visits primary health care centers every year, making it possible to treat a large number of people for any problem, including smoking.^{15,16} Consequently, some authors consider health centers to be reference centers for the control and prevention of smoking addiction,¹⁷ although close collaboration with specialized smoking dependence clinics is accepted as necessary.¹⁸ For this reason, we measured the prevalence and stage of cessation of smoking of patients who visited the family doctor, rather than the general population.

The objective of the study was to obtain demographic data and information on smoking, especially prevalence and stages of change, concerning patients who visited primary care centers in Health District 5 of the Autonomous Community of Valencia in February 2000.

Patients and Methods

A modified version of the questionnaire on tobacco dependence developed by Becoña and Vázquez¹⁹ was used (Table 1) and the following parameters were included: age, sex, reason for visiting the doctor, current smoking habit, and smoking intensity measured by number of cigarettes currently smoked per day and years of smoking. Patients on the lists of 15 family doctors at 7 health centers in Health District 5 in the Autonomous Community of Valencia were given the questionnaire when they came to the center. Initially 404 preliminary interviews were performed at 2 health centers on 12 randomly selected days in February 2000. The other 3299 questionnaires were given mainly in June and July, although some were given in August, September, and November 2002. Family doctors collected the questionnaires, mainly during morning visits though occasionally in the afternoon depending on hours of duty. Health District 5, Valencia has a total population of 258 106 inhabitants. There are 25 225

patients on the lists of the doctors who participated in the study, and a total of 3633 questionnaires were collected. Patients were first informed of the objectives of the study and gave their consent to participate in it. The interviews were structured, individual, and carried out in the family doctor's office. No one refused to participate.

We did not use a standard definition of the concepts of smoker, ex-smoker, and never smoker, but left it to the discretion of the patient and the family doctor who helped fill out the questionnaire.

Patients were considered to be in the pre-contemplation stage of change when they declared they did not want to quit within the following 6 months, and in contemplation when

TABLE 1
Patient Questionnaire*

| |
|-----------------------------------------------------------------------------------|
| 1. Age, years |
| 2. Sex |
| a) Man |
| b) Woman |
| 3. Reason for visit to doctor: |
| a) Illness |
| b) Bureaucratic reasons (prescriptions, medical certificates) |
| 4. Are you a smoker? |
| a) Yes |
| b) No |
| c) Ex-smoker.....years |
| 5. How many times have you stopped smoking for 24 hours in the last year? |
| a) None |
| b) One or more |
| 6. I smoke and do <i>not</i> intend to quit in the next 6 months: |
| a) Yes |
| b) No |
| 7. I smoke but intend to quit within the next 6 months: |
| a) Yes |
| b) No |
| 8. I smoke but intend to quit in the next 30 days: |
| a) Yes |
| b) No |
| 9. I smoke but do NOT intend to quit in the next 30 days: |
| a) Yes |
| b) No |
| 10. For more than 2 years I have been intending to quit within the next 6 months: |
| a) Yes |
| b) No |
| 11. Number of cigarettes currently smoked per day: |
| a) <20 |
| b) 20-30 |
| c) 31-40 |
| d) >40 |
| 12. Years of smoking: |
| a) <5 |
| b) 5-10 |
| c) 11-15 |
| d) 16-20 |
| e) 21-25 |
| f) 26-30 |
| g) 31-35 |
| h) 36-40 |
| i) 41-45 |
| j) 46-50 |
| k) >50 |

*Modified version of the Becoña and Vázquez questionnaire.¹⁹

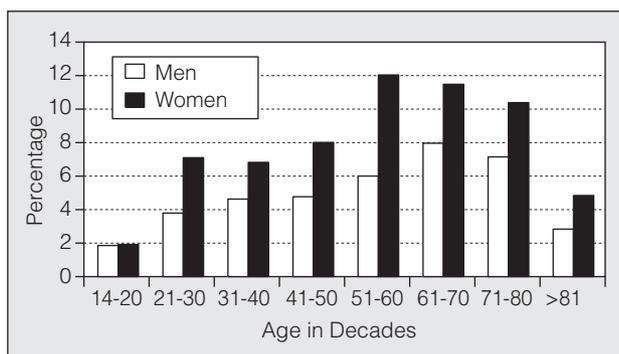


Figure 1 Distribution by age (in decades) and sex of the patients interviewed.

they did want to quit in the following 6 months but not within the following 30 days. If patients declared they had spent 2 years thinking about quitting within the following 6 months they were considered to be in chronic contemplation. Patients were classified in the preparation stage when they declared they wanted to quit within the following 30 days provided they had stopped smoking for at least 24 hours in the previous year; if they had not done so, they were regarded as being in the contemplation stage. Ex-smokers were asked how long it had been since they last smoked in order to classify them in the action stage (between 24 hours and 6 months), the maintenance stage (between 6 months and 5 years), or termination (more than 5 years without smoking).

The reason for visiting the health center was regarded as medical if the patient sought treatment for an illness or a medical revision and bureaucratic if the object of the visit was to renew prescriptions, obtain medical certificates, or any other reason that did not imply being seen for an illness.

We studied the stages of change of smokers, the results of the distribution by stage, and the characteristics within each group (total number and by sex, the percentage of the total number of patients and the total number of smokers, cigarettes per day, reason for visiting the doctor, and mean age).

Statistical Analysis

We carried out a descriptive analysis expressing the results as absolute values and percentages. Student *t* test and the McWhite test were used for quantitative variables and χ^2 test for qualitative variables. Scores were expressed as means with SD between parentheses. Results were processed with the statistical program StatDirect, version 1.9.8 for Windows (Iain E.Buchan[®], 1990-2001).

Results

Population

There were 7562 visits on the days the study was carried out, and 3633 interviews were performed, out of a population of 25 225. The ratio of interviews to visits was 2.08, similar to the ratio we found in the pilot study (2.38),⁶ and reflects, at least in part, the fact that patients visited more than once during the period of the study or that patients could not answer the questionnaire properly as their physical or mental state did not allow it.

The mean age of the patients was 55 (19) years (range, 14-96). There were more women (61.7%) than men (38.3%). Figure 1 shows the distribution by age (in decades) and by sex of the patients interviewed. The reason for visiting the health center was medical for 65.1% (64.5% of the men and 65.4% of the women) and bureaucratic for 34.8%.

Smoking

Regarding smoking, 23% were classified as current smokers, 17.2% ex-smokers, and 59.8% never smokers. Mean ages and ranges for the 3 groups were: current smokers, 41.8 (15.2) years (range, 16-87); ex-smokers, 60.6 (16.2) years (range, 17-95); and never smokers, 58.4 (18.8) years (range, 14-96); differences being significant at *P* level less than .01.

Figures 2 and 3 show the distribution of men and women, respectively, classified as current smokers, ex-smokers, or never smokers by age (expressed in decades). By age groups, we found that 39.7% of patients from the age of 14 to 24 were smokers, 49% from the age of 25 to 45, 19.7% from the age of 46 to 64, and 5.6% more than 65 years of age.

Among men, 34% were current smokers, 36% ex-smokers, and 30.1% never smokers. Among women, 16.1% were current smokers, 5.7% ex-smokers, and 78.2% never smokers.

Regarding the relationship between the reason for visiting the health center and smoking, 70.7% of current smokers, 63.6% of ex-smokers, and 63.4% of never smokers visited for medical reasons, whereas 29.3%, 36.4%, and 36.5% respectively visited for bureaucratic reasons.

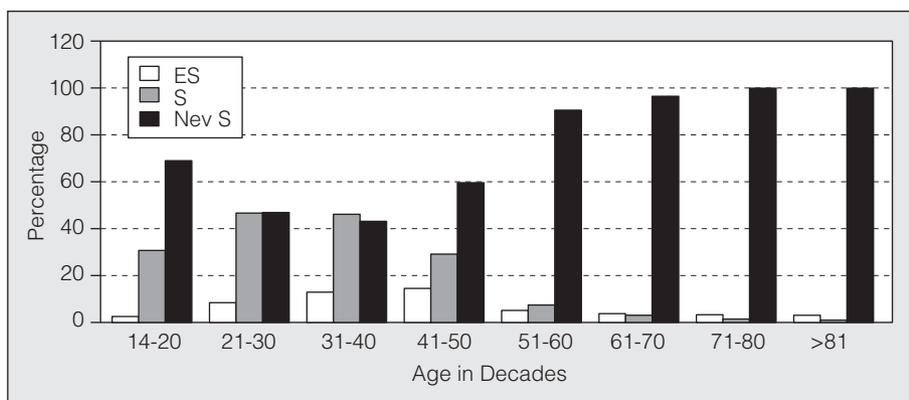


Figure 2 Distribution of women into ex-smokers (ES), smokers (S), and never smokers (Nev S), by age (in decades).

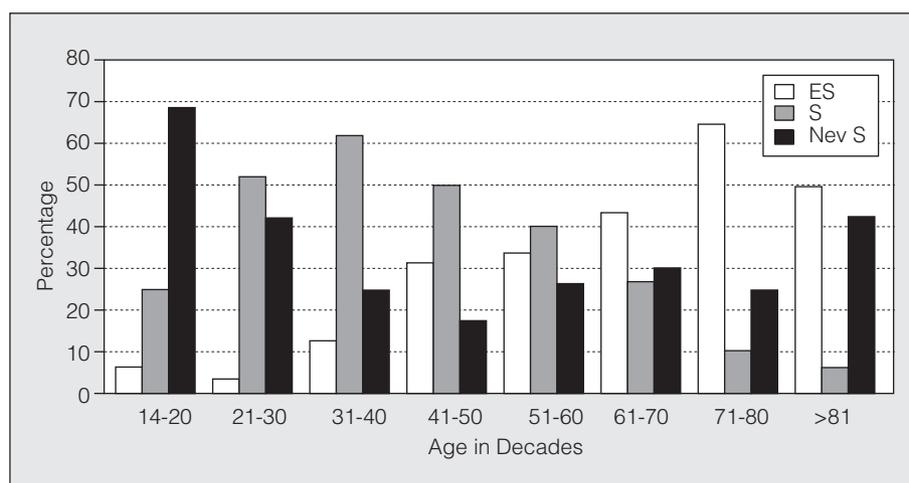


Figure 3 Distribution of the men into ex-smokers (ES), smokers (S) and never smokers (Nev S), by age (in decades).

Smoking Intensity

With regard to smoking intensity, 65.3% smoked fewer than 20 cigarettes per day, 26.4% smoked from 20 to 30, 5.4% from 31 to 40, and 2.2% more than 40; 0.7% preferred cigars or pipes. Men smoked more than women, with 56.7% of men and 76.3% of women smoking fewer than 20 cigarettes a day.

Distribution of habit years was the following: 24.01% had smoked for less than 10 years, 33.7% from 11 to 20 years, 27.56% from 21 to 30 years, and the remainder had smoked for more than 31 years.

Fifty per cent of smokers had stopped smoking for at least 24 hours during the previous year and 45.6% had spent more than 2 years intending to quit within the next 6 months.

Stages of Change in the Smoking Cessation Process

The distribution by stages of change in the smoking cessation process was the following: pre-contemplation 32.1%, contemplation 4.9%, chronic contemplation 12.2%, preparation 6.8%, action 2.3%, maintenance 15.1%, and termination 26.7%. The characteristics of each group are shown in Table 2.

Discussion

In our study we found that 23% of patients were current smokers (34% of men and 16.1% of women), 17.2% ex-smokers, and 59.8% never smokers. These figures differ from those of the Spanish National Health Survey,²⁰ 2001 for the Autonomous Community of

TABLE 2 Stages of Change in Smoking Cessation: Percentages and Characteristics

| Stage* | Pre-contemplation | Contemplation | Chronic Contemplation | Preparation | Action | Maintenance | Termination |
|------------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| No. of patients, % | 454 (31.1) | 70 (4.8) | 172 (11.8) | 96 (6.6) | 32 (2.2) | 231 (14.6) | 377 (25.8) |
| Mean age (SD) (range) [†] | 41.09 (15.57) (range, 16-87) | 44.19 (14.53) (range, 16-76) | 42.33 (13.89) (range, 17-73) | 40.71 (15.41) (range, 17-75) | 47.72 (16.94) (range, 18-80) | 53.19 (16.14) (range, 17-92) | 65.88 (13.72) (range, 27-95) |
| Men | 53.5% | 61.4% [‡] | 55.2% | 61.5% [‡] | 62.5% | 67.6% [‡] | 87.8% [‡] |
| Women | 46.5% | 38.6% | 44.8% | 38.5% | 37.5% | 32.4% | 12.2% |
| Reason for visit to doctor | | | | | | | |
| Medical | 67.8% | 84.3% | 75% | 74% | 81.3% | 67.6% | 59.6% |
| Bureaucratic | 32.2% | 15.7% | 25% | 26% | 18.8% | 32.4% | 40.4% |
| Cigarettes/day | | | | | | | |
| <20 | 61.7 | 60.0 | 72.1 | 77.08 | | | |
| 20-30 | 29.9 | 31.4 | 21.5 | 12.05 | | | |
| 31-40 | 5.3 | 5.7 | 3.5 | 7.29 | | | |
| >40 | 2.2 | 2.9 | 2.3 | 2.08 | | | |
| Cigars and/or pipes | 0.9 | 0.0 | 0.6 | 1.04 | | | |
| Years smoking | | | | | | | |
| <10 | 25.05 | 24.28 | 16.86 | 33.33 | | | |
| 11-25 | 47.67 | 34.28 | 50 | 34.37 | | | |
| 26-50 | 23.28 | 38.57 | 29.06 | 28.125 | | | |
| >50 | 3.99 | 2.85 | 4.06 | 4.16 | | | |

*The stage could not be determined in 3.1% of patients. [†]Significant difference between groups, (P<.001, one-way analysis of variance). [‡]Significant difference (P<.005).

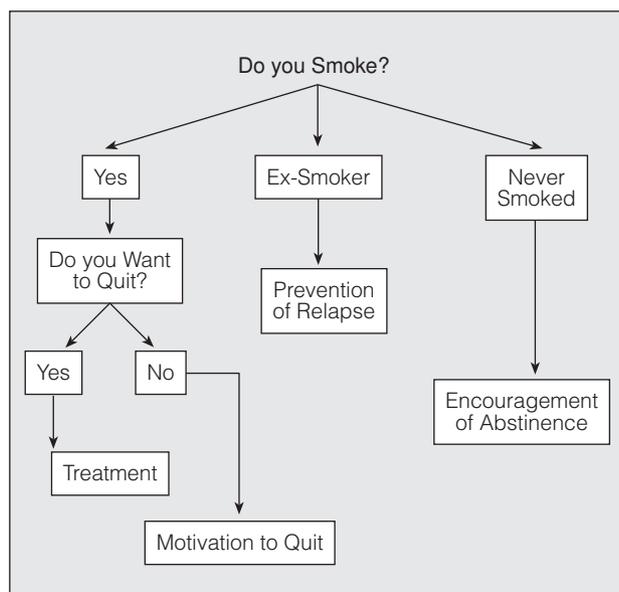


Figure 4. Medical assistance for tobacco dependence.

Valencia, which found that 36% of the study population were current smokers (32% daily smokers and 4% occasional smokers), 45% of men and 28% of women. In that study, 12% declared they were ex-smokers, and 52% said they had never smoked. We attribute these differences to the fact that the population we studied (patients visiting health centers) did not exactly reflect the general population. Our population had different characteristics (a higher percentage of women and a higher mean age), and this was reflected in the prevalence of smoking. In any case, it was a population of primary health care patients and, given that no patient refused to participate, we do not believe that a sampling error affected the results of our study.

Smoking intensity in our study was higher, with 34.7% smoking more than 20 cigarettes a day, than that found in the National Health Survey, in which 17.7% smoked more than 20.

The age distribution of smokers in the National Health Survey was as follows: 16% of 16 to 24-year-olds were smokers, 59% of 25 to 44-year-olds, 19% of 45 to 64-year olds, and 5% of those over 65 years. The figures refer to the general population and daily, not occasional, smokers. The percentages of smokers for the same age groups in our study were 12.6%, 48.9%, 29%, and 9%. Once again we think the differences are attributable to differences in the populations studied with dissimilar prevalences of tobacco dependence, although the fact that we did not differentiate between daily and occasional smokers could explain part of the difference.

In our study, the figures obtained for smokers, ex-smokers, and never smokers; the distribution by age, by sex, and by sex and age; and the degree of dependence differ from those obtained from the general population and reflect the characteristics of the population we studied.

Considering current smokers alone, more than half (54.4%) were at the pre-contemplation stage, indicating that they were not intending to quit in the foreseeable future; 29% were at the contemplation stage of which 20.6% were classified as in chronic contemplation; 11.5% were at the preparation stage. In 5% the stage could not be determined.

To our knowledge, there have been 6 studies carried out in Spain that analyzed the stages of change of smoking cessation.^{12,19,21-24} Comparison between them is difficult for several reasons, among them differences between the populations targeted (general population, heart disease patients, diabetics, patients visiting specialists) as well as design differences (whether the stage of chronic contemplation was considered, whether the stages of action and maintenance were considered separately or together).

Despite this, we would like to comment on certain previously published studies. Like Jiménez et al.²⁵ we found that preparation-stage patients were younger, but that the difference was slight. Unlike earlier studies, we did not find that pre-contemplation patients smoked more heavily than patients at other stages.¹⁹

Another interesting finding of our study is the medical attention that smoking dependence requires, defined as the work that smoking dependence alone gives to primary care doctors. Tobacco-related treatment involves not only providing medical care to smokers, but also motivating them to quit, preventing relapse, and encouraging abstinence¹ (Figure 4). Interventions to increase motivation to quit and treatment are recommended for all smokers. Prevention of relapse is recommended until the termination stage, when patients have not smoked for 5 years and/or are sure that they will not smoke again whatever the situations of stress they encounter (providing treatment at this phase was left to the discretion of the doctor's assessment of a patient's need for it).¹ Encouragement of abstinence is recommended only for young patients as becoming a smoker after the age of 20 is unlikely in western cultures.²⁶ Another factor considered in this study is whether the patient was visiting the doctor due to illness or for bureaucratic reasons. Thus, 44.75% of patients could need medical attention related to tobacco dependence, taking all categories into account: patients attending for both medical and bureaucratic reasons and those in the termination stage as well as never smokers 25 years of age and younger. If ex-smokers at the termination stage are excluded, 34.18% could need medical attention. If only patients visiting for medical reasons are considered, 30.41% could need attention. If only patients visiting for medical reasons, excluding ex-smokers at the termination stage, are considered, the figure would be 23.61%. Thus, the lowest number of primary health care patients needing a specific intervention for tobacco dependence would be one in four, whether the action to take would be motivation, treatment, follow up, prevention of relapse, or encouragement of abstinence in the young.

Conclusions

The figures we obtained for the number of smokers, ex-smokers, and never smokers and the distribution by sex, by age, and by age and sex of the smokers, and smoking intensity are different from those obtained from the general population. We think that these differences are attributable to differences in the populations and that this must be taken into account when planning tobacco dependence assistance.

Of the patients that visited the primary health care centers, we found that nearly one in four were smokers. Of them, more than half did not intend to quit and one in ten were prepared to.

Of the patients who visited the health centers, between 25% and 45% could need specific attention related to tobacco dependence.

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