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# Tobacco Use among Argentine Physicians: Personal Behavior and Attitudes

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## Abstract

A cross-sectional study evaluate the prevalence of smoking, knowledge, and tobacco intervention among Argentine physicians. A self-administered questionnaire was given to 1771 physicians, with a response rate of 82%. Respondents' mean age was 42±10 years, with 58% males. The overall prevalence of ever smokers was 47%, with the prevalence significantly higher in males (52%) than females (40%) ( $p < 0.001$ ). The prevalence of current smokers was 25%, with no differences by gender. Sixty-three percent of current smokers stated that they had no intention to quit in the next five years. Most of the physicians recognized harmful health effects of tobacco, and most were familiar with the minimal intervention strategies. Fewer than 15% arranged follow-up visits or assisted smokers in cessation, however only 33% of the respondents had ever received formal training in tobacco control, and 92% required it to improve their skills. Responders considered their main barriers for tobacco intervention to be inadequate training (38%), the time-consuming nature of intervention (30%), and patients' lack of desire to receive such advice (28%). Strategies to reduce the prevalence of smoking among Argentine physicians and improve their intervention skills would help them become effective anti-tobacco agents.

**Key words** > smoking, prevalence, epidemiology, health workers, knowledge, intervention, medical education, cardiologist, pediatrician, allergist, pulmonologist

## Resumen

### Consumo de tabaco en médicos argentinos: conductas y actitudes personales

Se realizó un estudio de corte transversal para evaluar la prevalencia de fumar, conocimiento e intervención en tabaquismo de médicos Argentinos. Se encuestaron 1771 médicos con una tasa de respuesta de 82%. La edad media de los respondedores fue de 42±10 años y el 58% eran hombres. La prevalencia de fumador alguna vez fue del 47%, con mayor prevalencia en hombres (52%) que en mujeres (40%) ( $p < 0.001$ ). El 25% eran fumadores actuales sin diferencia por sexo de los cuales el 63% afirmaron que no tenían intención de dejar de fumar en los próximos 5 años. La mayoría de los médicos reconoció los efectos dañinos del cigarrillo y muchos estaban familiarizados con las estrategias de intervención mínima. Sin embargo menos del 15% pactaba una visita de seguimiento o ayudaba a sus pacientes para cesación tabáquica, y solo el 33% reconoció haber recibido entrenamiento formal en control del tabaco a pesar que el 92% requería mejorar sus habilidades en el tema. Los encuestados consideraban como principales barreras de la intervención en tabaquismo: adecuado entrenamiento (38%), consumo de mayor tiempo de consulta (30%) y percepción que los pacientes no esperaban estos consejos (28%). Son necesarias estrategias para disminuir la prevalencia de consumo entre los médicos y mejorar sus habilidades de intervención en tabaquismo para que se conviertan en efectivos agentes contra el tabaquismo.

**Palabras claves** > fumar, prevalencia, epidemiología, agentes de salud, conocimiento, intervención, educación médica, cardiólogo, pediatra, alergista, neumólogo

## Introduction

Physicians occupy a key position in reducing rates of tobacco use through their roles as health care providers, advisors, and policy makers<sup>1</sup>. If physicians themselves smoke, therefore, the strength and reliability of their health-promoting messages may be lost. In countries where physician smoking rates have declined, the overall prevalence of tobacco use has subsequently decreased as well<sup>2</sup>, suggesting that physicians' smoking patterns may influence use of tobacco in the general population.

The prevalence of tobacco use (which is primarily cigarette smoking) among physicians varies worldwide, from 3.3% in the U.S.<sup>3</sup> to almost 50% in Greece<sup>4</sup>. The prevalence among physicians in Latin America is unclear. Studies to date suggest rates of up to 50%<sup>5-7</sup>, but methodology limitations (including small study populations) limit inference from these data<sup>8-12</sup>. The prevalence of tobacco use in the general adult population of Argentina has been about 38% over the last 30 years<sup>3, 5</sup>. The objective of this study was to assess the prevalence of cigarette smoking in a large physician population in Argentina.

## Methods

This cross-sectional study surveyed physicians at their main national specialty meeting in 1997. This sampling approach was chosen because it was not feasible to randomly sample all Argentine physicians, since an updated database was unavailable.

Physicians attending the following meetings were approached to participate: XVI Congreso Nacional de Cardiología (June 6-9, 1997), XXVI Congreso de Tisiología y Neumonología, Argentina (October 11-14, 1997), XX Jornadas Anuales Progreso en Alergia e Inmunología, Argentina (August 3-6, 1997), and XXXI Congreso Argentino de Pediatría (September, 26-29, 1997). Therefore, the sample population included mostly cardiologists, chest physicians, allergists, and pediatricians. Only physicians enrolled in more than one meeting, physicians not attending patients in Argentina, and those surveyed for the pilot study were excluded. All responses from physicians surveyed at these meetings and who assisted patients in Argentina at the time of the meeting were included in our analysis.

Participants were asked to fill in an anonymous, self-administered survey based on questionnaires recommended by WHO<sup>13-16</sup>, IUATLD (17), and the US Department of Commerce (CPS-695)<sup>18</sup>. The validated survey asked questions about demographics, smoking patterns, and four domains related to attitudes about tobacco use, intervention skills, knowledge of adverse effects and health consequences, and smoking restriction policies. All questions were translated to Spanish, adapted to the spoken expressions, and then translated back to English. The original questionnaire in Spanish was used in a pilot study of 88 allergists attending a meeting in November 1996. Based on feedback about ethno-cultural appropriateness, minor changes were made to the survey.

## Sampling scheme

Four hundred physicians were approached for participation in our study, representing about 20 to 33% of attendees at the four meetings. There were approximately an equal number of men and women at each event. The sample size was calculated to obtain a 90% confidence interval of (+/- 5%), assuming a prevalence of smoking of 40%. An additional 20% were approached for recruitment in case of refusal to participate.

Frequencies and descriptive statistics were computed to characterize smoking status and tobacco-related knowledge and intervention. The chi statistic and one-way analysis of variance were used to compare respondents and non-respondents on categorical and continuous measures, respectively. Data were analyzed using EPI-info 6.04 software (CDC-WHO 1996). The operational definitions of the main outcomes followed WHO recommendations<sup>13</sup>:

**Ever smoker:** someone who reported smoking at least 100 cigarettes in his/her life.

**Current smoker:** an ever smoker who smoked at the time of the survey.

**Occasional smoker:** a current smoker who smoked less than one cigarette per day at the time of the survey.

**Daily smoker:** a current smoker of at least 1 cigarette per day at the time of the survey.

**Former smoker:** an ever smoker who had quit at the time of the survey.

## Results

During the four meetings, 1,771 physicians were approached, and 1,452 answered the survey, for an overall response rate of 82%. Eighteen were ineligible because they did not assist patients as part of their work; therefore, the final analysis included 1,434 physicians.

Participants were more likely to be male than female (58% vs. 42%), without difference in response rate. The mean age was  $42 \pm 10$  years (range 22-78), with males significantly older than females (43.5 years vs. 38.8 years;  $t$ -test = 8,9;  $p < 0,0001$ ). The four specialties were adequately represented, and most of the participants had graduated at least five years earlier. Nearly all responders (91%) had attended at least three meetings in the previous five years (Table 1).

Ever-smokers represented 47% of the sample, with this rate significantly higher among males (Table 2). Current-smoker prevalence overall was 25%, with no difference by gender or specialties. In the subsets 35-44 and 45-54 years of age, however, current-smoker prevalence for females was higher than for males. A larger proportion of males than females had quit for all age groups (Figure 1).

The age of initiating tobacco use by occasional smokers was  $19 \pm 5$  years; range 12-40 years. Current daily smokers reported to have started smoking one year earlier ( $18 \pm 4$  years; range 3-40). Mean consumption was 14 ( $\pm 9$ , range 2-80) cigarettes per day, with 25% of responders stating that they smoked more than 20 cigarettes per day. No significant difference was observed in number of cigarettes smoked by gender (Figure 2). Only 1% smoked pipes, while the most (99%) consumed manufactured cigarettes.

Of current smokers, 57% reported that they had quit for at least one year in the past. Only 37% considered stopping smoking in the next five years, and surprisingly, 42% stated that they intended to remain smokers. There were no significant differences in attitudes about future smoking by gender, age group, or specialty.

Several questions addressed physicians' perspective of the health effects of tobacco use. When asked if tobacco use was "a habit" or "an addiction," 12% labeled it as a habit, 44% as an addiction, 44% as both, and 1% as neither. More non-smokers than smokers recognized smoking as an addiction. In general, most physicians agreed with statements that affirmed that smoking (93%) and

**Table 1:** Demographics

	%
<b>Gender</b> (n=1434)	
Female	42
Male	58
<b>Age</b> (yrs)	
< 35	26
35-44	41
45-54	22
> 54	11
<b>Specialties</b> (n=1433)	
Cardiologists	20
Pulmonologists	20
Pediatricians	32
Allergists	17
Others	11
<b>Yrs since graduation</b> (n=1426)	
< 5	17
5-10	17
11-20	37
>20	29
<b>Professional status</b> (n=1411)	
In training	30
Staff	50
Chair	20
<b>Current health status</b> (n=1423)	
Hypertension	5
Diabetes	1
Dislipemia	3
Asthma	4
Associations	2

**Table 2:** Smoking status among Argentine physicians

	Total Population %	Males %	Females %
Never	53.0	48.0	60.0
Ever 47.0	52.0 *	40.0 *	
Current	25.0	24.0	27.0
Daily	16.9	16.4	17.7
Occasional	8.2	7.6	9.3
Former	22.0	28.0	13.0

\* $p < 0.05$

environmental tobacco smoke (93%) have harmful effects and that quitting is beneficial regardless of health status (94%). Almost all declared that smoking should be banned in hospitals (97%) and indoor public places (96%), but smokers

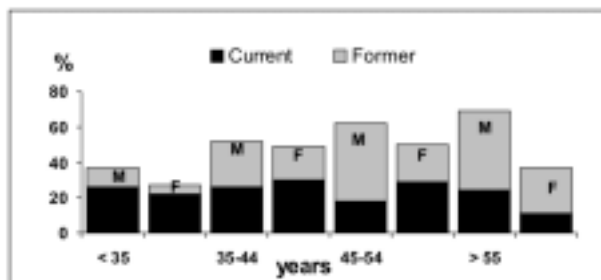


Figure 1: Ever, former and current smoker stratified by age and gender

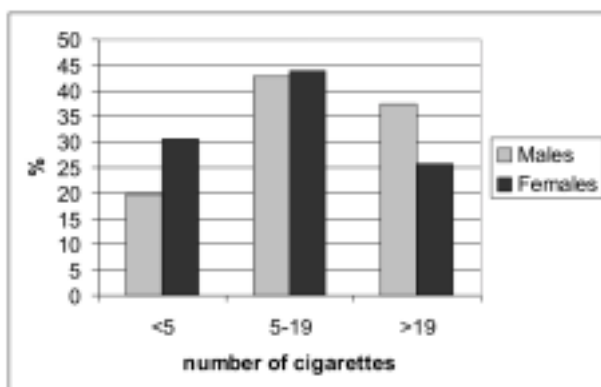


Figure 2: Number of cigarettes smoked by gender

showed a tendency to be more permissive (90.3% vs. 98.4%,  $p < 0.001$ ).

Another set of questions evaluated physicians' knowledge of intervention strategies, particularly the brief tobacco intervention developed by the US National Cancer Institute (4A's plan)<sup>19</sup>. Most physicians positively identified the five interventions (98% anticipatory guidance, 99% ask, 98% advice, 98% assist, 77% arrange follow-up visits). Even though 94% of the physicians surveyed stated that they used at least one of the interventions, only 8% recognized the 4A's expression. Seventy-three percent claimed that they performed tobacco intervention with every patient assisted, but more precise questions called that figure into doubt. Seventy-five percent claimed that they advised their patients about tobacco risks, but only 57% asked every patient about tobacco use. Although 62% stated that they provided anticipatory guidance to juvenile patients, only 13% assisted and 14% arranged follow-up visits for quitting.

The most important barriers for implementing tobacco interventions included lack of appropriate training, 38%; too time-consuming, 30%; patient does not expect tobacco control intervention,

28%; and lack of awareness of smoking cessation programs to which to refer patient, 21%.

Formal training in tobacco control strategies, as medical students or residents and fellows, was reported by only 33% of the physicians surveyed, but 92% stated that they were willing to receive information on tobacco control measures for patients.

## Discussion

This study explored the prevalence of tobacco consumption among Argentine physicians and the consequences for their attitudes, as well as their knowledge and skills related to smoking. Our findings show that tobacco use in Argentina is only slightly lower for physicians than reported for the general population. As we expected, most physicians recognized the addictive nature of tobacco use and its health consequences. Nearly all agreed with tobacco-control measures, but their smoking dependency clearly influenced their opinion.

Several models of smoking among physicians are described worldwide (Table 3). In the US and UK, physicians' smoking rates increased until the 1950s, then declined sharply, and now are steady at below 10%<sup>3,14</sup>. In other developed countries, such as Italy<sup>15</sup>, France<sup>16</sup>, and Japan<sup>17</sup>, smoking among physicians still is relatively high, while in other countries it is more moderate. These different patterns among countries have not been fully explained and merit more investigation.

Data from Latin America are available for Brazil<sup>10</sup>, Mexico<sup>9</sup>, Chile<sup>11</sup>, Costa Rica<sup>12</sup>, Venezuela<sup>8</sup>, and Argentina<sup>18, 19, 6</sup>. The 1996 study of the Brazilian Medical Association by Mirra and Rosenberg<sup>10</sup> included 11,909 members (23.1% of the 51,558 surveyed) and showed a 6.4% prevalence of current smokers. This is the lowest rate in the region and one of the lowest in the world. Reports from other Latin American countries showed higher rates of physician smoking, from 19 to 50%<sup>6, 8, 9, 11, 12, 18, 19</sup>.

Three previous studies among physicians in Argentina demonstrated higher smoking rates than our report: 46% in 1988<sup>18</sup>, 43% in 1992<sup>19</sup>, and 48.9% in 1993-1994<sup>6</sup>. Our study prevalence (25%) suggests a decline in tobacco use among Argentine physicians, but disparity of study designs can also explain these differences. The 1988 study<sup>18</sup> investigated 128 pediatric hospital workers in the city of Buenos Aires; the 1992 study<sup>19</sup> surveyed 30

**Table 3:** Smoking prevalence among physicians world-wide.

	Year	Current Smokers
United States <sup>3</sup>	1990-91	3.3%
United Kingdom <sup>14</sup>	1989	13.5%
Italy <sup>15</sup>	1997	25.0%
France <sup>16</sup>	1993	27.0%
Japan <sup>17</sup>	2000	17.0%
Brazil <sup>10</sup>	1997	6.4%
Venezuela <sup>8</sup>	1990	20.9%
Mexico <sup>9</sup>	1993	26.9%
Chile <sup>11</sup>	1994	36.0%
Costa Rica <sup>12</sup>	1993	19.0%
New Zealand <sup>31</sup>	1996	5.0%

internists at the referral hospital in Neuquén state; and the 1994-1995 study enrolled 92 of 102 physicians from the city of Viedma. Our study surveyed physicians from the entire country in their national specialty meetings, limiting participation to those that were clinical-practice based and highly qualified, with regular attendance at the meetings. These requirements may have defined a particular subset of physicians with a lower prevalence than the other studies' samples.

Furthermore, additional methodological aspects could explain the variations in results, such as sample size, enrollment strategies, definitions of variables, and the different questionnaires used for each study. To our knowledge, this study represents the first effort to examine the smoking prevalence among Argentine physicians using a standardized procedure that may be replicated.

We found no differences for current smoker rates by gender, contrasting with other countries and the general population in Argentina<sup>6, 10, 15</sup>. In Chile<sup>11</sup>, male physicians tend to smoke more than females, while Costa Rica<sup>12</sup> showed the opposite pattern. Stratification analysis by age and gender exposed differences in smoking status rates: middle-aged females showed a higher percentage of current smokers than men, and males showed higher former smoker rates for all ages. Our data did not provide definitive reasons for these differences but does show a higher quitting tendency among males.

Smoking cessation is associated with a shorter smoking history, lower consumption, and quitting for more than 6 months<sup>20</sup>. Argentine physicians

reported that they started smoking in their late teens, most consumed less than one pack per day, and about two-thirds stated that they had quit for one year at least once. Furthermore, one-third anticipated quitting in the future, suggesting that a tobacco cessation intervention would be successful among this set of smoking physicians. Of more concern was the high percentage that intended to continue smoking in the next five years. A comprehensive strategy is needed to advance them from the pre-contemplation status described by Prochaska and DiClemente<sup>21</sup> at least to contemplating quitting.

Consistent evidence shows that a decline in tobacco use among physicians is followed by a decline in the general population<sup>22-24</sup>. For example, from the early 1950s to the present, Norway showed a drop in smoking prevalence for male doctors from 75%<sup>22</sup> to 11%<sup>28</sup>. For the same period, US physicians' smoking rates fell from 52%<sup>25</sup> to 10%<sup>3</sup>. Finally, in the same period, UK physicians' smoking rates declined from 56%<sup>26</sup> to 13%<sup>14</sup>. All evidenced a subsequent decrease of smoking rates for the general population. Strategies to decrease the tobacco use among physicians in Argentina likely would offer the additional benefit of reducing smoking rates in the general population and benefiting overall health.

Although most of the surveyed physicians recognized all the actions of the 4A's plan, only a few were aware of this minimal intervention strategy. In agreement with other reports<sup>15-17</sup>, our study showed that insufficient training was the main barrier to physicians performing tobacco cessation intervention. The low rate of reported formal training, the inconsistencies observed in responses to intervention-related questions, and the desire of the majority to receive more information support this statement. Although we did not find definitive differences between smokers and non-smokers in the interventions the physicians reported performing, evidence suggested that physicians' own tobacco use influenced their practices<sup>27, 28</sup>.

Limitations of this study include its cross-sectional nature and its reliance on self-report without biological validation. External validity is restricted to the attributes of the population explored (four specialties, clinical-practice based, highly qualified, and regular attendance at the meetings) and not to all practitioners in Argentina. Nevertheless, the prevalence of smoking for general prac-

tioners or other specialties would likely not be lower than what we found for this sample. Many surveys have found a tendency to underreport<sup>29-31</sup>, and although underreporting has not been described for physicians, it may exist.

Data obtained with a validated, comprehensive, and recommended questionnaire may be considered highly reliable, however. Our study used an effective strategy to survey large numbers of physicians using a systematic methodology. Therefore, our results may be considered support for the medical community to proceed with tobacco cessation efforts both within its ranks and among the general population.

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