

## Evaluation of hospitalized patients in terms of their knowledge related to smoking\*

Avaliação do conhecimento sobre tabagismo em pacientes internados

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### Abstract

**Objective:** To identify characteristics related to smoking in hospitalized patients and to assess the knowledge that such patients have regarding the relationship between nicotine dependence and smoking-related diseases.

**Methods:** The study included 186 patients (males, 59%; mean age,  $51.3 \pm 16.8$  years) who were evaluated regarding demographic characteristics, diagnosis at admission, smoking history and passive smoke exposure. All of the patients completed a questionnaire regarding their knowledge of the relationship between smoking and disease. **Results:** Of the 186 patients, 42 (22.6%) were smokers, 64 (34.4%) were former smokers and 80 (43%) stated they were never smokers; 136 (73%) reported passive smoke exposure. In the sample as a whole, 21.5% of the patients were diagnosed with a smoking-related disease at admission, compared with 39% of those who were smokers or former smokers. The proportion of individuals who were unaware of the relationship between smoking and the cause of hospitalization was similar among current smokers and former smokers (56% and 65%, respectively). Only 19% of the current smokers believed that smoking might have affected their health, compared with 32% of the former smokers ( $p = 0.22$ ). The proportion of individuals who believed that quitting smoking depends on willpower was significantly higher among former smokers and never smokers than among current smokers (64% and 53%, respectively, vs. 24%;  $p < 0.001$  and  $p = 0.008$ ). Although 96% of the patients believed that smoking causes dependence, only 60% identified smoking as a disease. **Conclusions:** This study shows the disconnect between the recognition of smoking as a cause of dependence and the recognition of smoking as a disease, as well as the general lack of awareness that former and current smoking constitute a risk factor for the development and progression of disease.

**Keywords:** Smoking; Tobacco use disorder; Smoking cessation.

### Resumo

**Objetivo:** Determinar características relacionadas ao tabagismo e avaliar o conhecimento sobre a relação entre dependência nicotínica e doenças relacionadas ao tabaco em pacientes internados. **Métodos:** Foram avaliados em 186 pacientes (59% de homens; média de idade =  $51,3 \pm 16,8$  anos) internados em um hospital público quanto a características demográficas, diagnóstico de internação, história tabágica e tabagismo passivo. Todos os pacientes responderam um questionário sobre o conhecimento da relação tabagismo/doença. **Resultados:** Dos 186 pacientes, 42 (22,6%) eram fumantes, 64 (34,4%) eram ex-tabagistas e 80 (43%) referiam nunca ter fumado; 136 (73%) referiam exposição passiva ao fumo. O diagnóstico de admissão foi o de doença possivelmente relacionada ao tabaco em 21,5% dos pacientes e em 39% dos fumantes ativos e ex-fumantes. A proporção de fumantes e ex-fumantes que não conheciam a associação entre o tabagismo e a causa de internação foi similar (56% vs. 65%). Apenas 19% dos fumantes e 32% dos ex-fumantes acreditavam que o tabagismo tivesse afetado sua saúde ( $p = 0,22$ ). A proporção de ex-fumantes e de não fumantes que acreditavam que parar de fumar é uma questão de vontade foi significativamente maior que aquela de fumantes ativos (64% e 53%, respectivamente, vs. 24%;  $p < 0,001$  e  $p = 0,008$ ). Embora 96% dos pacientes acreditassem que o tabagismo cause dependência, apenas 60% identificavam o tabagismo como uma doença. **Conclusões:** Este estudo mostra a contradição entre o reconhecimento do tabagismo como causa de dependência e o reconhecimento do tabagismo como uma doença, além do desconhecimento de que o tabagismo atual e progresso é um fator de risco para o desenvolvimento e a evolução de doenças.

**Descritores:** Tabagismo; Transtorno por uso de tabaco; Abandono do hábito de fumar.

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## Introduction

Smoking is considered the principal preventable cause of death worldwide. Data from the World Health Organization (WHO) show that smoking accounted for over 100 million deaths worldwide in the 20th century, and estimates for the 21st century are that this number will surpass one billion.<sup>(1)</sup> In addition, the global economic loss due to smoking-related diseases, which principally affects developing countries, is estimated to be US\$ 200 million dollars per year.<sup>(1)</sup> In Brazil, the estimation model for smoking-related mortality showed that, in 2003, 24,222 deaths (13.64% of all deaths) were associated with smoking, and the estimated number of years of life lost was 419,935.<sup>(2)</sup>

The WHO has recommended the adoption of six effective policies to control the smoking pandemic, and Brazil has proven committed to pursuing each and every one of them. There is monitoring of tobacco consumption by means of policies of prevention, protection from passive smoke exposure, programs for smoking cessation and warnings about the health hazards of smoking, as well as bans on tobacco advertising and sponsorship by tobacco companies.<sup>(1)</sup> In addition, there has been an increase in cigarette prices.<sup>(1)</sup> Illustrations of smoking-related diseases on cigarette packs and televised warnings about the risks of passive smoke exposure, together with national and international campaigns aimed at promoting smoking cessation, have heightened public awareness regarding the dangers of smoking.<sup>(1,3)</sup> However, data from the latest monitoring showed the prevalence of smoking to be high (21%) among adults (over 18 years of age) in the city São Paulo.<sup>(4)</sup> Smoking-related health complications are still the leading causes of hospitalization and death, in Brazil and in other countries.<sup>(1,4,5)</sup>

There have been few studies evaluating the knowledge that the population has regarding smoking-related diseases.<sup>(6,7)</sup> Some studies have shown that people recognize the fact that smoking can affect their health; however, others have shown that, compared with nonsmokers, a lower percentage of smokers recognize the risk of smoking for the development of chronic diseases and cancer.<sup>(8,9)</sup> When the awareness of risk factors for the development of cancer, such as having a sedentary lifestyle, eating an unhealthy diet and drinking excessive alcohol,

was evaluated, smoking was the risk factor most often recognized by the general population, although not unanimously.<sup>(10)</sup> In addition, there are myths related to tobacco, such as the fact that a reduction in smoking will reduce the risk for smoking-related diseases, or even that the danger is reduced when using other nicotine delivery systems, such as hand-rolled cigarettes or a narghile (water pipe).<sup>(11-13)</sup> Therefore, despite the current awareness-raising campaigns, we must enlighten the population by countering the disinformation regarding tobacco consumption and dispelling the related myths.

The evaluation of the knowledge that patients have regarding smoking can aid in the development of efficient strategies to train health care professionals to properly approach this disease. However, there have been no studies evaluating the knowledge that patients hospitalized in Brazil have regarding smoking.

The objective of the present study was to determine, in hospitalized patients, the characteristics related to smoking and to evaluate patient knowledge regarding the relationship between nicotine dependence and the reason for their admission (with or without smoking-related diseases) at a public hospital.

## Methods

We interviewed 186 patients (with or without smoking-related diseases) hospitalized at the Botucatu School of Medicine *Hospital das Clínicas* in May of 2008. The Brazilian Thoracic Association Smoking Cessation Guidelines<sup>(3,14)</sup> and the WHO Report on the Global Tobacco Epidemic<sup>(1)</sup> list the following as smoking-related diseases: COPD; interstitial lung diseases (desquamative pulmonary fibrosis, idiopathic pulmonary fibrosis, respiratory bronchiolitis and histiocytosis X); stroke; coronary diseases; peripheral arterial disease; venous thromboembolism; gastritis; gastric ulcers; duodenal ulcers; preterm labor; and cancer at various sites, such as the lung, oral cavity, larynx, esophagus, bladder, kidneys, pancreas, stomach, colon, rectus, breast and uterus. Patients who were not clinically stable (on mechanical ventilation, with hemodynamic instability or with an altered level of consciousness) were excluded from the present study, as were those who were not able to understand the study protocol. All patients included in the study gave written informed consent using a form

that had been approved by the research ethics committee of the institution.

The questionnaire employed assessed the following demographic characteristics: age; gender; marital status; level of education; occupation; and reason for hospitalization. The following were also assessed: smoking status (smoker/former smoker/nonsmoker); contact with smokers at home or at work; age at smoking onset; time since smoking cessation; and (for current or former smokers) number of cigarettes smoked per day. The knowledge that the patients had regarding smoking was investigated by assessing the following: their knowledge of the relationship between current smoking or prior smoking and the disease for which they were hospitalized (in cases diagnosed with smoking-related diseases); whether they recognized smoking as a disease; whether they believed that smoking causes dependence; whether they held the opinion that quitting smoking depends on willpower; whether they were aware of any smoking cessation treatment; and whether they knew of any health care facility that provided smoking cessation treatment.

A descriptive analysis of the results was performed, and the data are presented in absolute numbers, percentages or mean and standard deviation. To compare the proportions of the answers of smokers, former smokers and nonsmokers, the chi-square test was used. The level of significance was set at 5%, and this value was adjusted when the Bonferroni test for multiple comparisons was applied.

## Results

The general characteristics of the 186 patients are shown in Table 1. The mean age of the patients, 59% of whom were male, was  $51.3 \pm 16.8$  years (range, 14–86 years). Most of the patients (60%) had attended school for less than 9 years, and the majority (72%) were married. Of the patients investigated, 30% were retired.

Of the 186 patients, 42 (22.6%) were smokers, 64 (34.4%) were former smokers and 80 (43.0%) stated that they were never smokers; 136 (73%) reported past or present exposure to passive smoke at home or at work. Among the former smokers, the time since smoking cessation ranged from 1 to 54 years, 17% having quit within the last 12 months. In the sample as a

**Table 1** – Characteristics of the population studied.

Characteristic	Patients (n = 186)
Age, years <sup>a</sup>	$51.3 \pm 16.8$
Gender, M/F <sup>b</sup>	109/77
Smoking history, pack-years <sup>a</sup>	$20.0 \pm 14.9$
Current smoker/former smoker/ nonsmoker <sup>b</sup>	42/64/80
Age at smoking onset, years <sup>a</sup>	$15.3 \pm 6.2$
Time since smoking cessation, years <sup>a</sup>	$16.7 \pm 13.6$
Level of education, %	
Illiterate	4
Less than 9 years of schooling	60
9 years of schooling	12
High school, incomplete	3
High school, complete	12
College, incomplete	4
College, complete	5

<sup>a</sup>Values expressed as mean  $\pm$  SD. <sup>b</sup>Values expressed as n.

whole, 21.5% of the patients were diagnosed with a smoking-related disease at admission, compared with 39% of those who were current smokers or former smokers. Of the smoking-related diseases, lung cancer and coronary disease were those most often diagnosed (in 48% of the sample).

The data related to the knowledge that the patients had regarding smoking are shown in Table 2. The proportion of individuals who were unaware of the relationship between smoking and the disease that was the cause of hospitalization was similar among current smokers and former smokers (56% and 65%, respectively;  $p = 0.50$ ). Only 19% of the current smokers believed that smoking might have affected their health, compared with 32% of the former smokers ( $p = 0.22$ ). Of the 186 patients, 146 (78.5%) had knowledge of some type of smoking treatment and 59.7% knew of specialized clinics for smoking cessation.

The proportion of individuals who believed that quitting smoking depends on willpower was significantly higher among former smokers and never smokers than among current smokers (64% and 53%, respectively, vs. 24%;  $p < 0.001$  and  $p = 0.008$ ). There were no significant differences among the groups when considering whether patients believed smoking is a disease ( $p = 0.43$ ) and when considering whether patients believed smoking causes dependence ( $p = 0.58$ ).

**Table 2** – Opinions of patients hospitalized in a general hospital regarding aspects related to smoking, by current smoking status.

Statement	Smokers (n = 42)	Former smokers (n = 64)	Nonsmokers (n = 80)	p*
Smoking causes dependence, agrees, %	97	98	96	0.58
Smoking is a disease, agrees, %	69	61	60	0.43
Quitting smoking depends on willpower, agrees, %	24	64	53	< 0.05

\*Chi-square test.

Although 96% of the patients believed that smoking causes dependence, only 60% believed that smoking is a disease.

The level of education presented a statistically significant association with the question of whether patients believed that quitting smoking depends on willpower ( $p = 0.02$ ). The questions regarding whether patients believed smoking is a disease ( $p = 0.68$ ) and whether patients believed smoking causes dependence ( $p = 0.63$ ) were not associated with the level of education.

## Discussion

One of the principal findings of the present study was the identification of the disconnect between the recognition of smoking as a cause of dependence and the recognition of this dependence as a disease. The vast majority of the patients reported that smoking can cause dependence, but 40% of the patients were not of the opinion that this dependence is a disease. In addition, most of the current smokers recognized that they were not able to stop smoking at will.

The present study is the first to investigate the knowledge that patients hospitalized in a Brazilian public hospital have regarding smoking. The results confirm that, despite the information in the media and provided on cigarette packs, these strategies have not significantly increased the knowledge of the general population regarding smoking. Similarly, some studies carried out in other countries have shown that the lay population still has little knowledge regarding smoking and its consequences.<sup>(6,8-10,15)</sup> Data in the literature suggest that the knowledge regarding the relationship between smoking and smoking-related diseases is restricted to certain pathologies, such as lung cancer and coronary disease.<sup>(6,10,15)</sup> This might be related to the significant number of studies on the prevention of cancer and heart diseases, which has led, in recent

decades, to the dissemination of information in the mass media.<sup>(9,16)</sup> One study that investigated the knowledge regarding the risk factors (smoking, drinking excessive alcohol, having a sedentary lifestyle and eating an unhealthy diet) for the development of cancer and heart diseases showed that more than 60% of the population studied recognized only smoking as a risk factor. However, there are still myths regarding the individual risk for the development of cancer.<sup>(15)</sup> A study carried out in France showed that 44% of the smokers believed that smoking might lead to cancer only if tobacco consumption were higher than their own and that 20% of the smokers believed that their cancer risk would be increased only if the number of pack-years were greater than their own.<sup>(15)</sup> Another factor that is associated with smoking cessation attempts in patients with smoking-related diseases is the motivation that appears when certain diseases are diagnosed.<sup>(17,18)</sup> Patients who are informed about their lung age and about the influence of smoking on the evolution of airway obstruction show a higher smoking cessation rate. One study that evaluated the motivation to quit smoking after smokers were told their lung age (evaluated by means of pulmonary function tests) showed that the smoking cessation rate was higher among individuals who were informed of their lung age than among individuals who were not so informed.<sup>(17)</sup> In another study, after patients had been informed of the influence of smoking on the evolution of COPD, the smoking cessation rate was higher among those who had been diagnosed with airway obstruction than among those who had not.<sup>(18)</sup>

Another important finding of the present study was that most of the hospitalized patients had a history of passive smoke exposure, which shows the need to inform patients about the risks for developing diseases associated with passive smoking. International and national consensuses show that exposure to cigarette smoke causes

the same diseases as does smoking, and this fact is not generally recognized by the population.<sup>(14,19)</sup> A study that evaluated the knowledge that 318 parents of children treated in an ICU had regarding smoking revealed that 70% of the parents believed that smoking could affect the health of children.<sup>(20)</sup>

The current level of knowledge regarding smoking can be improved by means of health promotion campaigns in schools, at health care facilities and in the mass media.<sup>(1,21-23)</sup> The present study showed that the lack of knowledge regarding smoking is associated with a lower level of education, which shows that it is necessary to improve the access that the general population has to information. The easy access to virtual information and the availability of internet sites that offer educational material on smoking and its consequences can improve the understanding of smoking and its consequences, as well as aiding in the control of the smoking epidemic.<sup>(23)</sup> In a study carried out in schools in China, it was shown that the implementation of specific measures, such as educating students, teachers, family members and members of the community on the psychological and physical treatment of smoking, resulted in less smoking, as well as in a better understanding of and a better attitude toward health.<sup>(22)</sup> Another fact that must always be clarified to smokers is that nicotine dependence makes smoking cessation difficult, and that willpower does not always suffice. The present study showed that most of the subjects believed that quitting smoking depends on willpower, and this finding was associated with the level of education. However, a meta-analysis showed that, at one year after smoking cessation with minimal intervention, the abstinence rate was only 5%,<sup>(24)</sup> and that intensive intervention and the prescription of medication were central to treating this chronic disease.

The prevalence of current smoking in the present study (22.6%) was similar to the 9.8-21.0% found among adult individuals ( $\geq 18$  years of age) in a recent study conducted in Brazilian capitals,<sup>(4)</sup> as well as to the 17% found in a study that investigated patients treated at a public hospital.<sup>(25)</sup>

The present study has some limitations. First, only the perspective of the patient was assessed, and this perspective can be influenced

by a number of factors (such as memory or even denial). The evaluation of the point of view of health care professionals would provide additional information and allow the delineation of appropriate intervention strategies to approach the problem. The rate of smoking might have been underestimated, since it was not confirmed by means of biological measurements (such as the determination of exhaled carbon monoxide), which might have produced a proportional bias among the groups studied. In addition, the patients were not monitored after being discharged from the hospital in order to evaluate the smoking cessation rate after the intervention made during the hospitalization period.

In summary, the present study showed that, despite the campaigns designed to educate the population, there is still a lack of knowledge regarding the role of smoking as a risk factor for the development and, principally, the evolution of diseases. In addition, this study showed that information regarding smoking control needs to be more readily available and broadly disseminated. Furthermore, there should be more smoking cessation centers, the necessary resources being allocated to that end.

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