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Saleiro, Sandra; Damas, Carla; Gomes, Isabel

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Sandra Saleiro¹
Carla Damas²
Isabel Gomes³

Hábitos tabágicos e conhecimento dos riscos do tabagismo em função da formação académica em estudantes universitários

Smoking habits and awareness of smoking risks depending on academic background in university students

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Resumo

Objectivo: Avaliar os hábitos tabágicos de um grupo de estudantes universitários dos cursos de Medicina e de Engenharia por forma a verificar se, dependendo da sua formação académica específica, existem diferenças nos hábitos tabágicos e atitudes perante o tabagismo.

Métodos: Estudantes de Medicina e de Engenharia da Universidade do Porto foram avaliados através de um questionário, no qual tiveram de mencionar os seus hábitos tabágicos, a sua percepção sobre a dependência do tabaco e apontar, de entre uma lista de 12 doenças associadas ao tabagismo, aquelas que estariam relacionadas com o consumo de tabaco.

Abstract

Objective: To evaluate smoking habits among a group of medical students and engineering students in order to assess whether, depending on their specific academic background, differences in smoking habits and attitudes towards smoking were present.

Methods: Medical and engineering students from the Oporto University were surveyed using a questionnaire, in which they were asked to mention their smoking habits, their perception about cigarette dependence and to point out, from a list of 12 tobacco-related diseases, which were associated with tobacco use.

¹ Interna complementar de Pneumologia

² Assistente hospitalar de Pneumologia

³ Assistente hospitalar graduado de Pneumologia

Serviço de Pneumologia, Hospital de São João – Director: Professor Doutor Venceslau Hespanhol

Correspondência / Correspondence to: Sandra Saleiro

Serviço de Pneumologia do Hospital de São João

Alameda Prof. Hernâni Monteiro

4202-451 Porto, Portugal

E-mail: sandrasaleiro@portugalmail.pt



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HÁBITOS TABÁGICOS E CONHECIMENTO DOS RISCOS DO TABAGISMO EM FUNÇÃO DA FORMAÇÃO ACADÉMICA EM ESTUDANTES UNIVERSITÁRIOS

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Resultados: Responderam ao questionário 338 estudantes (172 de Medicina e 166 de Engenharia), com idade mediana de 21 anos. A prevalência do tabagismo foi de 21.6%, sendo maior no sexo masculino que no feminino (31.8% versus 10.9%). Fumavam significativamente menos estudantes de Medicina (16.3%), comparando com os estudantes de Engenharia (27.1%). Quase 16% dos estudantes desconheciam a capacidade da nicotina induzir dependência, mas os estudantes de Medicina estavam mais conscientes deste facto ($p=0.00$). Todos os estudantes identificaram o cancro do pulmão como estando associado ao consumo de tabaco e salientaram, menos frequentemente, outras doenças. Excepto no caso do cancro do pulmão, os estudantes de Medicina revelaram um melhor conhecimento acerca das doenças relacionadas com o tabaco.

Conclusões: Como esperado, os estudantes de Medicina mostraram, em geral, um melhor conhecimento das doenças relacionadas com o tabaco, comparando com os estudantes de Engenharia, e revelaram igualmente uma prevalência menor de hábitos tabágicos. Esta diferença pode ser devida a diferentes atitudes em relação ao tabaco, para as quais podem contribuir diferentes formações académicas.

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Palavras-chave: Hábitos tabágicos, estudantes universitários.

Results: A total of 338 students (172 of Medicine and 166 of Engineering) with median age of 21 years answered the questionnaire. Prevalence of smoking was 21.6% and was greater among males than females (31.8% versus 10.9%). Significantly fewer medical students smoked (16.3%), compared to engineering students (27.1%). Almost 16% of the students did not know nicotine ability to induce dependence, but medical students were more aware of it ($p=0.00$). All students identified lung cancer as being associated with tobacco use and pointed out, less frequently, other diseases. Except for lung cancer, medical students showed a better knowledge about smoking-related diseases.

Conclusions: As expected, medical students showed a better knowledge of smoking-related diseases in general, as compared to engineering students, and they also showed a lower prevalence of smoking habits. This difference may be due to different attitudes towards smoking for which different academic backgrounds may have contributed.

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Key-words: Smoking habits; university students.

Introduction

Although extensive data about smoking habits of university students, namely medical and nursing students, exist, relatively few studies have compared groups of students with different background and analysed the subsequent impact of specific un-

dergraduate education in their knowledge about cigarette damage to health.

Over the past years, prevalence of smoking habits among adult male has declined while in adult female has increased. However, Portugal is one of the European countries where female smoke less and where preva-



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lence of smoking habits is lower¹. The estimated percentage of people smoking in the European Union was 33% in 2002 and 32% in 2006. Portuguese data from the latest Eurobarometer survey performed in September and October 2006 pointed out a 24% prevalence of smoking in the general population².

Tobacco control measures and educational programmes in schools have been increasing in the latest years, although the overall perception is that it still remains insufficient. Despite this increased education and public focus on smoking health effects, there are no recent data about smoking habits among university students in Portugal.

The purpose of this study was to investigate smoking habits in a group of medical and engineering students attending to a public major university in Portugal, their knowledge about smoke-related health effects and whether there were differences between them.

Materials and methods

Setting

The study was conducted at the Medicine School and Engineering School, which are part of the Oporto public University. A total of 338 students (172 medical students and 166 engineering students) were enrolled.

Data collection

Medical and engineering students were randomly surveyed using an anonymous questionnaire, which was personally handed to students at leisure rooms and then re-collected by the same person who had handed them. No incentives were provided

for completing the questionnaire. Nobody refused to answer the questionnaire.

The questionnaire included demographic data, graduating class year and questions about students' smoking habits, namely, age of initiation of smoking, number of smoked cigarettes *per* day and smoking habits duration. If they were smokers, according to the WHO criteria³, they also answered the Fagerström test, the widely used and validated six-item questionnaire which allows to classify smokers according to their level of nicotine dependence. A score less than 4 was considered as low dependence, between 4 and 7 as medium dependence and equal or greater than 7 as high level of dependence. Students who had not smoked in the previous 12 months or longer were considered as former smokers. Those who had never smoked were considered non-smokers.

In addition, students were asked to point out, in a list of 12 tobacco-related diseases presented in the questionnaire, which, in their opinion, were associated with tobacco use. Finally, they mentioned their perception about physical and psychological dependence caused by tobacco use.

Comparison between medical and engineering students was performed using Pearson Chi-Square tests with *p* value < 0.05 considered statistically significant (Statistical Package of Social Sciences, 12.0 software).

Results

Answers to the questionnaire were obtained in a total of 338 students, being 172 medical students and 166 engineering students. Students' median age was 21 years [17-41 years], being 173 male and 165 female. Seventy-three students were found to be



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current smokers (corresponding to 21.6% of all the students surveyed) and 10 students (3%) were former smokers. The mean age of initiation of smoking was of 16.5 years [10-24 years] and smoking habits had been present, in mean, for 5 years [1-12 years]. The mean number of cigarettes smoked by current smokers was 10.1 *per* day [1-30 cigarettes], with no differences observed between the two student groups.

Smoking was more prevalent among males (31.8%) as compared to female (10.9%) students (Table 1). From the 73 smokers, 18 (24.6%) were female, which corresponds to 5.3% of all students asked.

Among the 172 medical students inquired, 28 were found to be smokers, in contrast to 45 smokers of 166 engineering students. So, prevalence of smoking habits was significantly higher among engineering students compared to medical students (27.1% *versus* 16.3%, respectively, $p = 0.022$), as seen in Table I. Although more females (n=115) were found among medical students than engineering students (n=50), significant differences in smoking habits were found between them. The former had a lower rate of smokers (6.9%) than the latter (20%) – $p=0.028$, $OR=0.30$.

When evaluating nicotine dependence of the 73 current smokers, most of the students (n=58; 79.5%) had low dependence, 15 (20.5%) had medium dependence and none had high dependence. Comparing nicotine dependence in medical and engineering students, no significant differences were found between the two groups: medium dependence was present in 21.4% and 20%, respectively ($p = 1$). Among smokers, there were also no gender differences in what concerns to nicotine dependence:

27.8% of female and 18.2% of male had medium dependence ($p = 0.502$, Table II). A similar prevalence of smoking habits was found between students in the first three years (n=35) and in the final years of graduation (n=38), with no differences between the two groups ($p = 0.371$, Table III).

All students pointed out the diseases that they thought to be tobacco-related (Table IV). Only lung cancer was referred by all of them as a disease associated with smoking habits. Laryngeal cancer was the second disease to be mentioned (by 85.5% of the students), followed by COPD (81.7%). The remaining diseases were recognized as tobacco-related diseases by a smaller percentage of students: oral cancer (77.8%); myocardial infarction (68%); oesophageal cancer (65.4%); stroke (55.9%); gastric cancer (43.2%); gingivitis (38.5%); bladder cancer (33.4%); peptic ulcer (30.5%); Crohn's disease (23.1%). Except for lung cancer, significant differences were found between the two groups of students for all the other diseases.

We also categorized students' level of knowledge according to the number of tobacco-related diseases they mentioned: level 1 (1 to 4 correct answers); level 2 (5 to 8) and level 3 (9 to 12). Gender differences were evaluated in what concerns the level of knowledge, and, as one can see (Table V), female had a higher level of information ($p = 0.001$).

When asked about tobacco-induced dependence (psychological and nicotine dependence), 333 (98.5%) students pointed out psychological dependence as a consequence of smoking. Physical dependence was recognized by 285 (84.3%) students, with greater knowledge among medical students (n=158) than among engineering students (n=127), ($p = 0.00$).



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Table I – Students' smoking habits by university and sex

	Smokers <i>n</i> (%)	Non-smokers <i>n</i> (%)	Former smokers <i>n</i> (%)	Total <i>n</i>
Total of students	73 (21.6)	255 (75.4)	10 (3)	338
Medical students	28 (16.3)	141 (82)	3 (1.7)	172
Male	20	36	1	57
Female	8	105	2	115
Engineering students	45 (27.1)*	114 (68.7)	7 (4.2)	166
Male	35	77	4	116
Female	10	37	3	50

* $p = 0.022$

Table II – Nicotine dependence

Level of nicotine dependence	Low <i>n</i> (%)	Medium <i>n</i> (%)	High <i>n</i> (%)
Total of smokers	58 (79.5)	15 (20.5)	0 (0)
Medical students	22 (78.6)	6 (21.4)	0 (0)
Engineering students	36 (80)	9 (20)*	0 (0)
Sex			
Male	45 (81.8)	10 (18.2)	0 (0)
Female	13 (72.2)	5 (27.8)**	0 (0)

* $p = 1$; ** $p = 0.502$

Table III – Smokers distribution according to the year of study

	Medical students <i>n</i> (%)	Engineering students <i>n</i> (%)	Total of smokers <i>n</i>
Year of study*			
First years (1 st , 2 nd , 3 th)	12 (34.3)	23 (65.7)	35
Final years	16 (42.1)	22 (57.9)	38

* $p = 0.371$



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Table IV – Diseases identified by students as to be tobacco-related

Tobacco-related disease	Total of students <i>n</i>	Total of students %	Medical students <i>n</i>	Engineering students <i>n</i>	<i>p</i> value
Lung cancer	338	100	172	166	Not applicable
Laryngeal cancer	289	85.5	161	128	0.000
COPD	276	81.7	148	128	0.036
Oral cancer	263	77.8	150	113	0.000
Myocardial infarction	230	68	151	79	0.000
Oesophageal cancer	221	65.4	132	89	0.000
Stroke	189	55.9	138	51	0.000
Gastric cancer	146	43.2	109	37	0.000
Gingivitis	130	38.5	89	41	0.000
Bladder cancer	113	33.4	100	13	0.000
Peptic ulcer	103	30.5	87	16	0.000
Crohn's disease	78	23.1	69	9	0.000

Table V – Students' level of knowledge about smoking-related diseases

Level of knowledge	1 to 4 tobacco-related diseases <i>n</i> (%)	5 to 8 tobacco-related diseases <i>n</i> (%)	9 to 12 tobacco-related diseases <i>n</i> (%)
Sex*			
Male	60 (34.7)	71 (41)	42 (24.3)
Female	35 (21.2)	61 (37)	69 (41.8)
Smoking status**			
Smoker	17 (23.3)	34 (46.6)	22 (30.1)
Non-smoker or former smoker	78 (29.4)	98 (37)	89 (33.6)

* $p = 0.001$; ** $p = 0.313$

Discussion

Information about smoking related consequences to health is largely available in most developed countries, and, depending on different policies, through a variety of sources (school programs, outdoors, newspapers, television, internet, etc). However, whether it reaches its targets, in particular young people, is a difficult question to answer. We evaluated young adults that, concerning general information, should be privileged compared to the general popula-

tion, since they reached a differentiated level of school education. However, diseases like myocardial infarction and stroke, that are widely associated with tobacco smoke, were not identified by a significant percentage of individuals (32% and 44.1%, respectively), and some of them were medical students. A better knowledge was found in these ones, as it was expected, and, in fact, only for lung cancer, engineering students showed to have an equivalent level of information.



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Different scenarios can be found in the literature concerning prevalence of smoking habits among medical students⁴⁻⁷, which perhaps reflects local specificities. We found that medical students smoke less than engineering students and less than the general Portuguese population, and this may be explained by their specific background concerning a more detailed knowledge about tobacco related diseases (and their clinical presentations). Engineering students had a higher prevalence of smokers as compared to the general population¹, for which we found no immediate explanation. Another finding was that comparing smoking habits across class years of education, we expected that smoking habits rate would decline in the final years, at least in the medical students group, because of the increasing knowledge of smoking related-diseases. However, in this group of students no differences were found. Indeed, other authors found increasing prevalence of smoking habits among medical students in the final years⁸.

As observed in the general Portuguese population and in other student groups^{6,9-12} female smoked less than males and this was found in both groups of students. However, female medical students smoked significantly less than female engineering students, and we believe that differences found in smoking habits were not due to a higher rate of female students in medicine as compared to engineering school, but to a different attitude towards smoking.

The mean age of initiation of smoking was 16.5 years^{6,11} and this finding highlights the importance of implementing teaching about tobacco and related diseases early in academic life and maintain it in university edu-

cational programmes, even beyond those areas that will somehow be related with health care, social intervention or education. The mean number of cigarettes smoked *per* day was 10.1, denoting an established smoking habit among current smokers¹²⁻¹³. However, among smokers, nicotine dependence was found to be low to medium in all cases¹⁴, in contrast to other series¹¹. A significant part of all students (15.7%) was not aware of this kind of dependence.

Despite current information about smoking risks to health and efforts in repeated educational campaigns against tobacco use, consciousness of tobacco risks was low in this group of university students. However, medical students showed a better awareness of tobacco-related diseases. Nevertheless, they still revealed an incomplete knowledge and this finding has already been mentioned in others series^{8,15-18}.

In conclusion, we found that academic education and its specific background influenced knowledge about health related consequences and smoking prevalence. We believe that specific education and prevention strategies directed to students, started even before university level, could result in a reduction in smoking behaviours¹⁹⁻²⁰.

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