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Smoking habits in a family physician's practice

Abstract

Introduction: Poland is the one of the countries in the European Union with the highest prevalence of smokers. The involvement of family physicians in smoking cessation activity could improve this situation.

The aim of this study was to estimate smoking habits, their intensity and nicotine dependence in a family physician's practice (urban and rural population). An additional aim was to estimate smoking habits in relation to the presence of smoking-related disease, gender, location and motivation to stop smoking.

Material and methods: This study was part of an investigation into the prevalence and severity of chronic obstructive pulmonary disease (COPD) in the same population. Statistical analysis of questionnaires about smoking and history of respiratory diseases, Fagerström's nicotine dependence test and a motivation to quit test were performed.

Results: Questionnaires were filled in by 1960 subjects (87% of those eligible). There were 29.6% current smokers, 24.9% ex-smokers, and 45.5% never-smokers. There were 39.4% current smokers among men, and 23.3% among women. Current smokers were more numerous in the rural population. 54% of women urban dwellers and 73% of women from rural population never smoked. There were no significant differences in the motivation to stop smoking or in the nicotine dependence among smokers with and without COPD nor according to the severity of COPD.

Conclusions: Smoking habits among the studied population were comparable with national and regional data. The intensity of smoking habits among female town dwellers is especially alarming.

Key words: tobacco smoking, family physician's population, questionnaire

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Introduction

Tobacco smoking is one of the leading causes of death worldwide. It is estimated that soon it will be responsible for one third of all deaths [1]. The contribution of tobacco smoking to the total death rate in the world will increase due to a constant growth in the number of smokers in China [2].

Awareness that tobacco smoke is harmful came very late. Worldwide widespread tobacco smoking started in the late nineteenth century after mass-produced cigarettes were introduced. Cigarette consumption rose steadily from then up until 1964 when the US Surgeon General published his first report on the harmful effects of tobacco smoke [3]. In the second half of the twentieth century several countries took action to reduce tobacco

smoking. In the US, Scandinavian countries, Australia and the United Kingdom such actions reduced the number of smokers to 20–30% of the adult population [4].

In Poland, anti-smoking activities started also in the 1960s. The Antinicotine Working Group of the Polish Society of Physiopneumology was organized in the early 1970s by associate professor Władysław Pręgowski from the Medical University of Białystok [5]. But the activity of the Working Group was limited by lack of funds. State policies promoting smoking were very detrimental. Forty years of communist rule resulted in very high smoking rates in Poland. The prevalence of smoking is 46% in males and 31% in females aged 20–64. This gives Poland the sixth highest percentage of male smokers in Europe and the seventh

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highest of female smokers. Among the seven 'leaders' on the list, four are post-communist countries. To close this gap it is important to understand the relation between smoking habits and place of living, education, economic status, age and gender.

The aim of this study was to assess smoking prevalence, nicotine dependence and attitudes towards smoking in people aged 40+ years registered at a semi-urban primary care office.

Material and methods

This project was approved by the institutional review board at the National Research Institute of TB and Lung Diseases (Approval No KE 7/2004).

This study represents part of a large project conducted in the same population on prevalence and severity of COPD published elsewhere [6].

In short, patients filled out questionnaires including questions on anthropometry, birth, early childhood, respiratory diseases, education, social status and smoking. They answered questions about smoking habits, duration of smoking, number of cigarettes smoked daily, age at taking up smoking, pack-years and number of times they had tried to quit. The Fagerstrom Nicotine Dependence Test [7] and a motivation to quit smoking test were also filled out.

A medical examination and a spirometry test using Easy One (NDD, Switzerland) office spirometer were performed. COPD was diagnosed on the basis of typical history, physical examination and results of spirometry tests demonstrating FEV₁/FVC ratio below lower limit of normal in post BD spirometry. Severity of airflow obstruction was classified according to Polish Thoracic Society guidelines [8].

Recruitment

There were 2,250 subjects eligible for the study. They were invited on the occasion of visiting the family doctor's office, personal letters or phone and by advertisements in local press and TV. The study was funded, in part, from a Ministry of Science Grant Nr 2505DD08727. Finally 1,960 subjects (87% of those eligible) were investigated.

Statistical analysis

Statistical evaluation of data was performed using Statistica program version 6 (StatSoft, Inc., 2001). $P < 0.05$ was accepted as statistically significant [9].

Results

The prevalence of smoking in relation to place of living and gender were evaluated from the questionnaire data. Smokers were divided into: current smokers, ex-smokers and never-smokers. Smoking exposure was calculated according to the number of pack-years. Results are presented in Tables 1–4. Table 5 shows smoking habits in relation to age. There were 39.4% current smokers in males, more smokers in the rural population than among town dwellers (45.8 vs. 35.8%), $p < 0.0001$. The prevalence of ex-smokers was similar in both environments: rural 33.8 vs. town 39.5% (NS). The number of never-smokers was also similar: 20.4 vs. 24.7% respectively.

The prevalence of current female smokers was half that of males (23.3 vs. 39.4%) $p < 0.001$, especially in the rural population where only 17.8% of females smoked. Slightly more than

Table 1. Smoking habits in relation to gender

Smoking habits	Current smokers	Ex-smokers	Never smokers	Total
Males n (%)	301 (39.40)	286 (37.43)	177 (23.27)	764 (38.98)
Females n (%)	279 (23.33)	202 (16.89)	715 (59.78)	1196 (61.02)
Total n (%)	580 (29.59)	488 (24.90)	892 (45.51)	1960 (100.00)

$\chi^2 = 257.05$; $p < 0.0001$

Table 2. Smoking habits in relation to living place

Smoking habits	Current smokers	Ex-smokers	Never smokers	Total
Town n (%)	389 (29.49)	361 (27.37)	569 (43.14)	1319 (67.30)
Village n (%)	191 (29.80)	127 (19.81)	323 (50.39)	641 (32.70)
Total n (%)	580 (29.59)	488 (24.90)	892 (45.51)	1960 (100.00)

$\chi^2 = 14,890$; $p = 0,00058$

Table 3. Smoking habits in relation to gender and living place

	N (%)	Current smokers	Ex-smokers	Never smokers	Total
Males	Town n (%)	175 (35.79)	193 (39.47)	121 (24.74)	489 (64.00)
	Village n (%)	126 (45.82)	93 (33.82)	56 (20.36)	275 (36.00)
	Total n (%)	301 (39.40)	286 (37.40)	177 (23.17)	764 (100.00)
Females	Town n (%)	214 (25.78)	168 (20.24)	448 (53.98)	830 (69.39)
	Village n (%)	65 (17.76)	34 (9.29)	267 (72.95)	366 (31.61)
	Total n (%)	279 (23.33)	202 (16.89)	715 (59.78)	1196 (100.00)
Total n (%)		580 (29.59)	488 (24.90)	892 (45.51)	1960 (100.00)

Table 4. Smoking habits among males and females

	Age at starting smoking (years)	Cigarettes smoked daily	Packyears	FTND points
Males	19.41 ± 3.9	21.39 ± 10.9	31.16 ± 20.3	5.68 ± 2.0
Females	22.08 ± 5.81	14.35 ± 7.26	16.9 ± 11.7	5.03 ± 2.0
p*	< 0.0001	< 0.0001	< 0.0001	< 0.001
Total	20.61 ± 5.02	18.22 ± 10.1	24.76 ± 18.4	5.37 ± 2.0

*Mann-Whitney test

Table 5. Smoking habits in relation to age

Age (years)	Current smokers		Ex-smokers		Never smokers		Total	
	n	%	n	%	n	%	n	%
40–49	268	40.61	140	21.21	252	38.18	660	100
50–59	231	37.87	162	26.56	217	35.57	610	100
60–69	57	17.17	89	26.81	186	56.02	332	100
> 70	24	6.7	97	27.09	237	66.2	358	100

Table 6. Nicotine dependence in Fagerström scale in relation to intensity of obstruction in cigarettes smokers with COPD

Obstruction	N	FTND (points)	± SD	P
Mild	22	5.86	2.55	NS p = 0.73
Moderate	35	5.63	1.86	
Severe	8	5.36	3.20	
Very severe	1	8.00	0.00	
Total	66	5.71	2.26	

half (54%) of female town dwellers and three quarters (73%) of females in rural areas were never-smokers. Males started smoking earlier, and smoked more. The total exposure to tobacco smoke was twice that in males (31.2 ± 20.3 pack-years) than in females (16.9 ± 11.7 pack-years), $p < 0.0001$.

Nicotine dependence was analyzed using a modified Fagerstrom’s test, separately in current smokers with and without COPD, demonstrating respectively 5.71 ± 2.26 and 5.32 ± 2 points (NS). Among smoking COPD patients, no significant correlation was found between nicotine dependence and severity of the disease (Table 6).

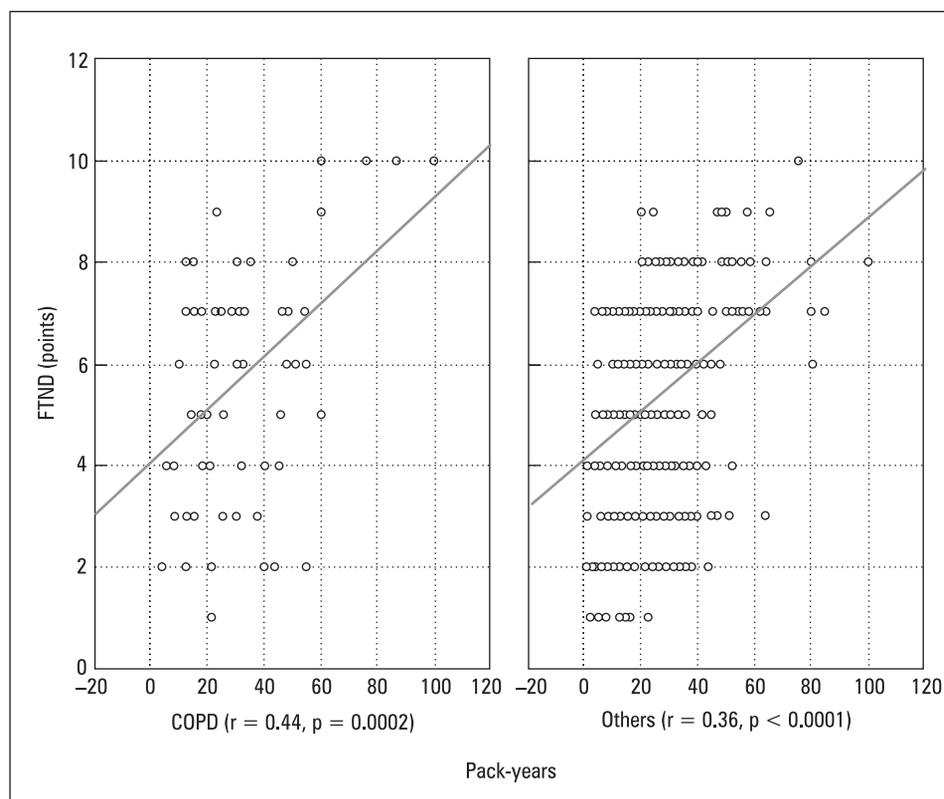


Figure 1. Correlation diagrams of nicotine dependence and exposure to tobacco smoke in smokers with COPD and others show by pack-years

Table 7. Motivation to stop smoking among smokers with COPD and others

	Motivation			P
	Positive N (%)	Neutral N (%)	Negative N (%)	
COPD	59 (89.4)	5 (7.6)	2 (3.0)	NS
Other smokers	363 (87.9)	29 (7.0)	21 (5.1)	

The correlation between the results of Fagerstrom's nicotine dependence test and tobacco smoke exposure expressed as a number of pack-years ($r = 0.44$) was higher in smokers with COPD in comparison to other smokers ($r = 0.36$) (Figure 1).

Motivation to stop smoking

Table 7 shows motivation to stop smoking in smokers with COPD and other smokers. Close on 90% of smokers reported a positive motivation to stop smoking, both COPD and other smokers. The total score of 'yes' answers in smokers with COPD averaged 8.34 ± 1.5 compared to 8.31 ± 1.6 in other smokers (NS). The total of 'no' answers was 3.64 ± 1.5 and 3.65 ± 1.6 respectively (NS).

In 580 current smokers, the relation between nicotine dependence and motivation to quit were analyzed in relation to gender. The score in FNDT

was 5.68 in males and 5.03 in females ($p < 0.001$). The motivation to quit was 8.33 points in males and 8.31 in females (NS). The correlation between FNDT and number of pack-years in males was stronger ($r = 0.40$, $p < 0.0001$) than in females ($r = 0.29$, $p < 0.0001$). The number of quit smoking efforts was higher in females (2.30) than in males (2.01), $p < 0.05$.

Discussion

There were 29.6% current smokers, 24.9% ex-smokers and 45.5% never-smokers in 1960 investigated subjects. Women, especially those living in rural areas, were twice as likely as men to be never smokers. Smoking was related to COPD, especially in men; 96% of COPD patients were current or ex-smokers, with high exposure to tobacco smoke of almost 40 pack-years. Ac-

cordingly, the relation between number of pack-years and severity of the disease was demonstrated [6].

Comparison of smoking prevalence in the studied population was difficult. However, national data from 2004 [10] for the same age groups are similar to our own data. According to the National Office of Statistics [10] tobacco smoking in the population older than 15 years dropped from 35.3% in 1996 to 30.3% in 2004, mainly due to a reduction of smoking in men from 47.3% to 38%. In 2004 51% of Poles never smoked (38% of men and 61% of women). In the age group of 40–49 years there were 43.3% current smokers and 20.8% ex-smokers; in the age group of 50–59 years 36.2% current smokers and 24.4% ex-smokers; 60–69 years 18.9% current smokers and 27.6% ex-smokers; in the group older than 70 there were 8.9% current smokers and 23.4% ex-smokers [10]. The smoking habit of the investigated group was similar to national data.

Niżankowska-Mogilnicka et al. performed a population study on the prevalence of COPD in Poland (BOLD study) including data on smoking habits. From 526 investigated subjects aged > 40 years (260 females and 266 males, mean age 55.7 ± 11.5 years), 60% of subjects were current or ex-smokers with mean tobacco exposure of 24.3 pack-years. More males (36.1%) than females (21.9%) were current smokers. Similarly, tobacco smoke exposure was higher in males, 29.2 vs. 15.1 pack-years respectively [11]. Thus, results reflecting smoking habits in another region of Poland were very close to ours.

Wójcik et al. investigated the prevalence of smoking in the Lublin province. A total of 611 subjects aged 16 years or more (58.6% females) were studied, 27.5% of them were current smokers (14.8% of the females and 45.5% of the males). In Zamość (county town) 47.5% were current or ex-smokers (77.6% of males and 22.4% of females out of 160 studied). There were 52.5% of never-smokers. In contrast, in the rural population (281 investigated subjects) there were 19.6% current smokers, with 60% of them — males [12]. Wójcik's results suggest that smoking is more prevalent in town dwellers, contrary to our results.

In Wielkopolska province, smoking prevalence in a randomly chosen population of 1518 subjects aged 15 years or more was investigated. Prevalence of current smokers was 41.9% in males and 29.9% of females. There were 22.6% of ex-smoking males and 11.9% of ex-smoking females [13].

The lack of reduction in smoking prevalence in women is most disturbing [10]. In our study

there were more current than ex-smokers in town-dwelling women, which confirms national data. Therefore, anti-smoking activities should particularly concentrate on women. Recently published results of the Nurses' Health Study, based on longitudinal (22 years) observation of 104 000 American nurses showed appalling data [14]. Smoking increased the hazard ratio of death from all causes by up to 2.89 times, from myocardial infarction by 3 times, from lung cancer by 14 times and from COPD by 18 times. From a total of 12 483 deaths, 69% were related to tobacco smoke.

Anti-smoking activities must concentrate on women; considering especially that smoking women encounter more difficulties in quitting than do men [15, 16]. However, lower nicotine dependence in women and a similar motivation to quit in both genders are encouraging. Evaluating the motivation to quit has prognostic value and influences the strategy of anti-smoking activities.

Conclusions

The high prevalence of smoking in Poland entails considerable responsibility on primary care physicians. The introduction of a new preventive medicine program by the National Health Service Fund provided a financial incentive for that group of doctors. The Polish Respiratory Society should take charge of courses on smoking cessation for primary care physicians. In some provinces, such courses have already been organized. Also, it would be advisable to create anti-smoking clinics in chest clinics all over the country for smokers willing to quit. Special attention should be paid to smoking women. Otherwise, it might be expected that in ten years or so the prevalence of smoking in women would be as high or higher than in men, with all sorts of health and social consequences. This has already happened in other European countries.

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