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Comparative characteristics of chosen aspects of tobacco smoking among the students of Poznan University of Medical Sciences and students of vocational medical colleges in Poznań

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ABSTRACT

Aim. Medical doctors, nurses, pharmacists, and paramedics are professions placing themselves highest in the rankings of occupations granted public trust. The knowledge of the negative impact of tobacco use on physical condition possessed by those occupational groups ought to limit the addiction among this population, which should constitute a benchmark of health-promoting attitude for the public. Many health-promoting decisions are made during the period of studies. The study aimed to establish the scale of tobacco smoking and the profile of chosen aspects of this issue among students of Poznan University of Medical Sciences and students of vocational medical colleges in Poznań.
Material and Methods. An author questionnaire was conducted. 586 students (471 University students, 115 college students) aged between 19 and 65 completed the survey.
Results. The majority (76.62%) of the surveyed students were non-smokers. Smokers were predominately male (the entire surveyed population, University students). Medical college students smoked more cigarettes daily compared to the University students. The most commonly declared reason for smoking was the social purpose. Among former smokers, female more often than male indicated health considerations and the knowledge of harmful effects of smoking as reasons for quitting; among college students, the most common reason was health considerations, whereas University students listed knowledge of the harmfulness of smoking, health considerations, and other motives most often.
Conclusions. Both University students and medical college students smoked more rarely than their contemporaries in the general population. The respondents constitute a group displaying relatively high prevalence of health-promoting attitudes.

Keywords: smoking, addiction, behaviors, medical university, medical school.

Introduction

In 2015, in a nationwide survey regarding attitudes towards tobacco smoking, almost one-fourth of Poles (24%) admitted to smoking compulsively (daily), which indicated that the proportion of smokers was slightly lower than in previous editions of the survey — in 2009, 2011 and 2013 [1]. A comparison with the results of the previous

surveys also indicated a downward trend in the quota of chain-smokers - respectively 4 (2013 vs. 2011) and 3 (2015 vs. 2013) percentage points less [1]. The smoking addiction affected men more often than women (31% vs. 18%), among whom a reduction of the percentage of smokers, in comparison to the previous surveys, could be observed [1]. Among everyday smokers, 13% began smoking in the year anteceding the survey. The highest percentage of smokers was represented in groups with vocational education (39% male, 25% female) and primary education - in this group, 36% of men and 24% of women admitted to chain-smoking [1]. Women and men possessing higher education smoked compulsively the least often - respectively 8% and 14%. Compared to the previous survey, a drop in the percentage of smokers among better-educated groups was to be observed - in the groups with secondary, post-secondary and higher education [1]. Medical doctors, nurses, pharmacists, and paramedics are professions placing themselves highest in the rankings of occupations granted public trust [2]. The knowledge of the negative impact of tobacco use on physical condition possessed by those occupational groups ought to limit the addiction among this population, which should constitute a benchmark of health-promoting attitude for the public [3]. Their attitudes and behaviors concerning smoking also influence the readiness and effectiveness of the advice provided to the smoking patients. Moreover, extensive knowledge enables representatives of the professions mentioned above to employ diverse methods in the treatment of tobacco addiction in their professional work [4]. Many health-promoting decisions are made during the period of studies. Health habits presented by the students correspond with their knowledge, beliefs, and needs or might be a result of imitation or experimenting.

Aim

The study aimed to establish the scale of tobacco smoking and the profile of chosen aspects of this issue among students of Poznan University of Medical Sciences and students of medical vocational colleges in Poznań.

Material and Methods

An author questionnaire was conducted. 586 students (471 University students, 115 college students) aged between 19 and 65 completed the survey. Characteristics of the group are presented in **Table 1**.

Statistical analysis was performed using Statsoft Statistica 12.0. The Chi-square test of independence was used to evaluate statistical significance. A P-value of 0.05 was used to determine significance.

Results

The surveyed students from both groups were predominately non-smokers (76.62%, **Figure 1**).

Among all smokers and smokers from the University, male students preponderated statistically significantly (**Figure 1**, **Table 4**). In both institution types, the most individuals declared smoking between 1 and 5 cigarettes daily (**Table 2**). The number of cigarettes consumed daily differed statistically significantly between University students (< 1) and vocational college students (1-5 cigarettes, **Tables 1** and **4**). Female smokers from medical college consumed statistically more cigarettes daily (5–10). The vast majority of students (69.81%) had been smoking between 1 and 5 years and for social purposes (68.61%). This reason for smoking was statisti-

Table 1. Characteristics of the studied group

Number of individuals	586	
Gender	416 females (71%)	170 males (29%)
Age [years]	Average: 25.2 ± 5.5	Median: 24
Place of education	471 university Pharmacy – 164 (35 %) Dentistry – 142 (30%) Medical – 67 (14%) Emergency Medical Service – 41 (9%) Foreigners – 30 (6%) Dietetics – 27 (6%)	115 medical college Dental technician – 27 (24%) Emergency Medical Service – 24 (21%) Pharmacy technician – 22 (19%) Medical caregiver – 21(18%) Dental assistant – 13 (11%) Dental hygienist – 8 (7%)

cally more often mentioned by all surveyed women and female students of the University.

Former smokers constituted 18.77% of the studied population. Statistically significantly more female than male declared health considerations and the knowledge of harmful effects of smoking as reasons for quitting smoking, both in the entire surveyed population and in the group of University students. Also, statistically significantly more University students than medical vocational college students indicated health considerations, knowledge of the harmful effects of smoking and other motives as reasons for quitting smoking. A statistically significant difference

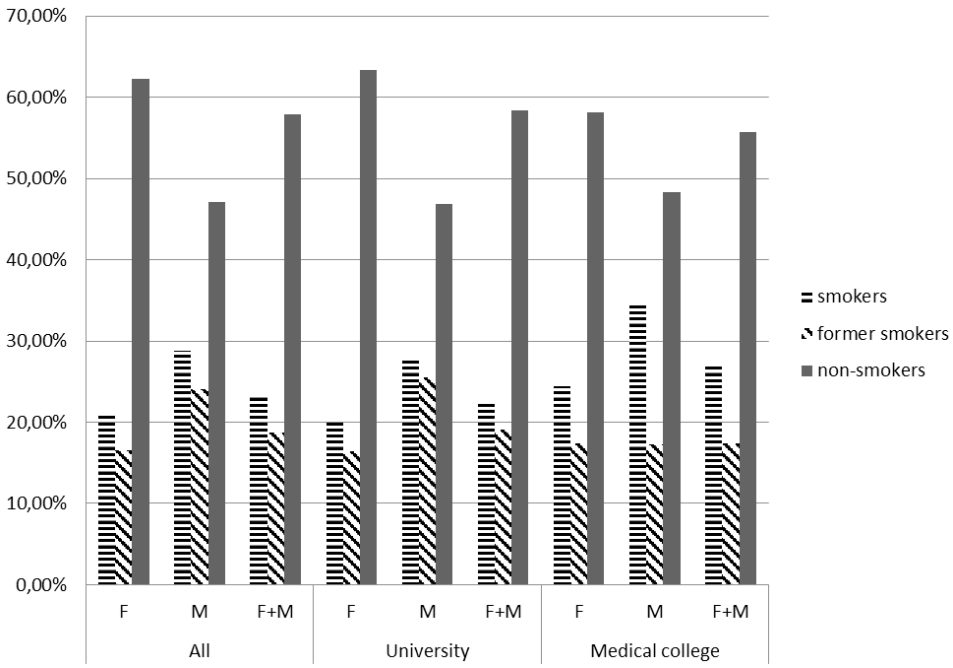

Figure 1. The percentage share of smokers, former smokers, and non-smokers. (F – female population, M – male population)

Table 2. Characteristics of the smoking group. (F – female population, M – male population)

	All			University			Medical college		
	F	M	F+M	F	M	F+M	F	M	F+M
Number of ciogarettes daily									
< 1	39.77%	22.45%	33.58%	44.78%	28.21%	38.68%	23.81%	0.00%	16.13%
1-5	31.82%	51.02%	38.69%	32.84%	43.59%	36.79%	28.57%	80.00%	45.16%
5-10	15.91%	14.29%	15.33%	10.45%	12.82%	11.32%	33.33%	20.00%	29.03%
11-20	11.36%	12.24%	11.68%	10.45%	15.38%	12.26%	14.29%	0.00%	9.68%
> 20	1.14%	0.00%	0.73%	1.49%	0.00%	0.94%	0.00%	0.00%	0.00%
Duration of addiction									
< 1 year	1.14%	0.00%	0.73%	1.49%	0.00%	0.94%	0.00%	0.00%	0.00%
1-5 years	68.18%	61.22%	65.69%	74.63%	61.54%	69.81%	47.62%	60.00%	51.61%
6-10 years	11.36%	26.53%	16.79%	8.96%	23.08%	14.15%	19.05%	40.00%	25.81%
11-15 years	4.55%	2.04%	3.65%	4.48%	2.56%	3.77%	4.76%	0.00%	3.23%
16-20 years	1.14%	2.04%	1.46%	1.49%	2.56%	1.89%	0.00%	0.00%	0.00%
> 20 years	5.68%	0.00%	3.65%	2.99%	0.00%	1.89%	14.29%	0.00%	9.68%
The reason for smoking									
Stress	36.36%	30.61%	34.31%	35.82%	33.33%	34.91%	38.10%	20.00%	32.26%
Socializing	75.00%	57.14%	68.61%	77.61%	58.97%	70.75%	66.67%	50.00%	61.29%
No reason	26.14%	22.45%	24.82%	23.88%	17.95%	21.70%	33.33%	40.00%	35.48%
Pleasure	32.95%	42.86%	36.50%	31.34%	46.15%	36.79%	38.10%	30.00%	35.48%

Table 3. Characteristics of the group of former smokers (F – female population, M – male population)

	All			University			Medical college		
	F	M	F+M	F	M	F+M	F	M	F+M
Reason for quitting smoking									
Desire to quit addiction	7.25%	0.00%	4.55%	9.26%	0.00%	5.56%	0.00%	0.00%	0.00%
Pregnancy	5.80%	0.00%	3.64%	7.41%	0.00%	4.44%	0.00%	0.00%	0.00%
Social pressure	1.45%	17.07%	7.27%	1.85%	16.67%	7.78%	0.00%	20.00%	5.00%
Costs	11.59%	12.20%	11.82%	5.56%	13.89%	8.89%	33.33%	0.00%	25.00%
Health	33.33%	7.32%	23.64%	27.78%	5.56%	18.89%	53.33%	20.00%	45.00%
Costs + health	1.45%	14.63%	6.36%	1.85%	11.11%	5.56%	0.00%	40.00%	10.00%
Knowledge of the harmfulness of smoking	17.39%	17.07%	17.27%	22.22%	19.44%	21.11%	0.00%	0.00%	0.00%
No pleasure	2.90%	2.44%	2.73%	3.70%	2.78%	3.33%	0.00%	0.00%	0.00%
Unpleasant smell and taste	1.45%	2.44%	1.82%	1.85%	2.78%	2.22%	0.00%	0.00%	0.00%
No reason	1.45%	4.88%	2.73%	1.85%	5.56%	3.33%	0.00%	0.00%	0.00%
Sport	0.00%	9.76%	3.64%	0.00%	8.33%	3.33%	0.00%	20.00%	5.00%
No need for smoking	2.90%	0.00%	1.82%	1.85%	0.00%	1.11%	6.67%	0.00%	5.00%
Change of lifestyle	1.45%	4.88%	2.73%	0.00%	5.56%	2.22%	6.67%	0.00%	5.00%
Other	8.70%	12.20%	10.00%	11.11%	13.89%	12.22%	0.00%	0.00%	0.00%
Methods of quitting									
Strong will	47.83%	48.78%	48.18%	42.59%	44.44%	43.33%	66.67%	80.00%	70.00%
None	37.68%	36.59%	37.27%	44.44%	41.67%	43.33%	13.33%	0.00%	10.00%
Nicotine patches, tablets, gumms, e-cigarettes	1.45%	12.20%	5.45%	0.00%	11.11%	4.44%	6.67%	20.00%	10.00%
Sudden quitting	2.90%	2.44%	2.73%	0.00%	2.78%	1.11%	13.33%	0.00%	10.00%
Other	7.25%	4.88%	6.36%	9.26%	5.56%	7.78%	0.00%	0.00%	0.00%

Table 4. Statistical differences between the studied groups (F – female population, M – male population)

Parametr	p
F vs M; all participants	
Is smoking?	p =.00333
Reason: socializing	p =.02463
Reason for quitting smoking	p =.00002
University vs Medical college	
Number of cigarettes daily	p =.04840
Reason for quitting smoking	p =.00919
Methods for quitting smoking	p =.00349
F vs M; University	
Is smoking?	p =.00365
Reason: socializing	p =.03155
Reason for quitting smoking	p =.00025
F vs M; Medical college	
Number of cigarettes daily	p =.03523

was also observed in applied methods of smoking cessation – University students indicated 'strong will' and 'none' most commonly, whereas college students mostly pointed to 'strong will' (**Table 3**).

Discussion

Tobacco smoking has been a subject of research in the medical community for many years, since the attitudes of medical doctors, pharmacists, nurses, paramedics and other healthcare professionals towards nicotinism and their behaviors concerning smoking influence the readiness and effectiveness of the advice provided to the smoking patients. It has been proven that active counseling provided by medical doctors and nurses and their assistance results in quit attempts even in patients with low baseline motivation [5]. Moreover, the same research demonstrated that tobacco smoking or lack thereof among medical professionals influences their ability to assist patients in controlling nicotine dependence. Medical professionals ought to both identify addicted patients and provide them with adequate counseling and support. Research has shown that especially professionals within the area of stomatology might play an important role in the process of early detection of smokers since they often notice signs of addiction such as halitosis, dental discoloration or difficulties in maintaining proper oral hygiene earlier than other professions [6, 7]. They are therefore well suited to implement early anti-smoking interventions. Educational and informational actions also constitute an element of everyday work of a pharmacist, who

often helps the patients with the choice of a suitable nicotine replacement therapy [8]. Moreover, the pharmacist can prevent potential drug interactions and difficulties during tobacco addiction therapy by controlling the patient's use of medications, OTCs, and dietary supplements [9, 10]. The prevalence of tobacco addiction among physicians has regularly been analyzed in the USA and most of the European countries. An example of a country closely monitoring cigarette smoking among medical doctors in Sweden, where nationwide epidemiological research on a large, representative group of physicians has been conducted every five years by the Karolinska Institute in Stockholm since 1969. In the last research conducted in 2001, 1367 medical doctors, that is 5% of all Swedish doctors, were randomly chosen to participate [11]. A research on an impressive scale was also conducted in Japan – questionnaires about active smoking, attitude towards tobacco smoking and the knowledge of the topic were distributed to 4500 physicians, that is 63% of all Japanese doctors, of whom 3771 completed the survey [12]. A research carried out by Zinonos and coauthors enabled distinguishing specific risk factors for nicotinism among healthcare workers [5]. Those were: male gender, age younger than 34, being unmarried and the prevalence of nicotinism in the family of the subject. Studies on the prevalence of tobacco addiction were also conducted in Poland – both among healthcare professionals and students of medical colleges. One of them was research published by Siemińska and coauthors in 2010, evaluating the prevalence and attitudes towards nicotinism among medical students of the first and sixth year [13]. The presented results demonstrated both optimistic and alarming trends. The percentage of the sixth year medical students of Medical University of Gdańsk smoking cigarettes (13%) was significantly lower than in the general Polish population (32%). In the same time, research on the prevalence of tobacco smoking among fifth-year students of the Medical University of Warsaw demonstrated a similar percentage of smokers – 14.4%. In comparison, students of the fifth year of the medical faculty of the University of Strasbourg smoked more often – 17.5%, whereas students of Teheran University of Medical Sciences a lot less often – only 4% of them [13]. Another favorable trend was determining that during medical studies the percentage of smokers diminished from 21% in the first year to 13% in the sixth. The downward tendency in the prevalence of nicotinism over studying time was confirmed both among Polish and French medical students. Unsettling was the fact that every fifth person smoking cigarettes in the sixth year of medical faculty had begun smoking during the studying period, and 17% had increased the number of smoked cigarettes during that period. The results of our study indicate that among students of Poznan University of Medical Sciences and vocational medical colleges in Poznań smoking is a less frequent phenomenon than in the general population of the corresponding age [14]. This tendency has a positive connotation in the context of the subjects being future healthcare professionals, allowing them to propagate health-promoting attitudes among the patients. Moreover, among the smoking group of respondents subjects smoking a few cigarettes daily were predominant, suggesting that the "heavy smokers" percentage in the studied group was negligible. Another positive trend to be noticed in the context of forming anti-nicotine attitudes were successful attempts at quitting smoking in the studied group – despite the young age of the respondents, almost a fifth of them had successfully given up smoking. Similarly to the general population, males dominated in the smoking subgroup of the studied group – which was an interesting development in relation to a study carried out in 2012 among the students of Poznań, in which the proportion of smokers did not differ significantly depending on the gender of the subject [15]. Females in the studied group declared smoking for social reasons significantly more often than males. It might suggest that a predominant component of their nicotinism is behavioral, rather than physical addiction. That would justify a need to apply different therapeutic interventions in both smoking groups, according to the gender of the subject. The comparison between University students and college students revealed a few significant differences. An interesting finding was a lack of statistically significant deviations in the number of smokers between those two subgroups. In the smoking populations statistically more cigarettes daily were smoked by medical colleges students, which may suggest a higher level of physical addiction (as measured by means of Fagerstrom Test for

Nicotine Dependence) among this subgroup of subjects. The motivation regarding smoking cessation also differentiated both groups – University students listed health considerations more often. Surprisingly, that difference did not significantly affect the quota of smokers among both studied groups. The surveyed group was characterized by a high declarative level of knowledge of the harmfulness of tobacco consumption, which resulted in it being the most common motivation for quitting. Despite that fact, the respondents very rarely used pharmaceuticals facilitating maintaining nicotine abstinence. This creates a potential possibility of increasing the number of persons successfully quitting smoking by implementing an informative campaign on that topic, as well as interventions of primary care physicians regarding the pharmacotherapy of nicotine dependence. In conclusion to our research, a positive tendency is to be noticed taking into account both the percentage of students addicted to tobacco consumption, especially regarding the number of persons who successfully ceased smoking, and the declared motivations for quitting – mainly health considerations and knowledge of the harmful effects of smoking. Students who have previously unsuccessfully attempted quitting smoking should remain the area of particular interest – in this subgroup anti-nicotine counselling and interventions enhancing motivation towards nicotine abstinence ought to be implemented.

Conclusions

- Among the surveyed students of both types of schools, non-smokers constituted the majority.
- Males were predominant in the smokers subgroup (the whole population, University students).
- More cigarettes daily were smoked by the students of medical colleges.
- The most commonly declared reason for smoking was the social purpose.
- Among former smokers, females more often than males indicated health considerations and the knowledge of harmful effects of smoking as reasons for quitting; among college students, the most common reason was health considerations, whereas University students listed knowledge of the harmfulness of smoking, health considerations, and other motives most often.
- Regarding the method of quitting, college students indicated strong will most commonly, while University students – strong will and 'none'.

Perspectives

A prospective, longitudinal study of the population of medical students would be advantageous in order to establish the further development of their attitudes towards tobacco smoking in the years following graduation. Future studies ought to inquire changes in the smoking behaviors resulting from the gain of clinical experience among the studied group.

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