

Smoking among university students in Faculty of Dental medicine, Medical University of Plovdiv, Bulgaria

Research article

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Abstract

Smoking is a global problem, which is the leading cause of preventable mortality and morbidity. However, prevalence of tobacco use is increasing among young people.

The aim of this study is to determine the prevalence of smoking among dental medicine students, types of tobacco products being used, duration and frequency of smoking.

Methods: By a questionnaire, participation in which was anonymous and voluntary, information was collected from students at the Faculty of Dental Medicine, Medical University - Plovdiv, Bulgaria, about gender, age, smoking status, types of tobacco products being used, the frequency and duration of smoking.

Results: Of the 618 students surveyed, 256 (41,42%) are male and 362 (58,58%) are female. The mean age of the participants was $22,82 \pm 2,72$ years. Of all students surveyed, smokers are 224 (36,25%) and non-smokers - 394 (63,75%). 33,70% of the women and 39,84% of the men use tobacco products. The sex distribution of smokers was 45,54% (n = 102) to men and 54,46% (n = 122) to women. Of the 224 students who use tobacco products, 182 (81,25%) smoke ordinary cigarettes, 39 (17,41%) - smoke smokeless cigarettes, 15 (6,69%) - smoke electronic cigarettes with nicotine liquid, 5 (2,23%) - smoke pipe, and 3 (1,33%) chew tobacco. Of 224 smokers, 76 (33,92%) use 1 to 5 cigarettes per day, 56 (25,0%) use 5 to 10 cigarettes per day, 52 (23,21%) use 10 to 15 cigarettes per day, 30 (13,39%) use 15 to 20 cigarettes per day, 9 (4,01%) use 20-30 cigarettes per day, 1 (0,44%) use 30-40 cigarettes per day. Of all the smoker students, 25 (11,16%) have been smoking for less than 1 year, 129 (57,58%) for 1-5 years, 61 (27,23%) for 5-10 years, and 9 (4,01%) for 10-20 years.

Conclusions: Smoking is very common among dental medicine students. This necessitates the development of more programs for quitting tobacco products use, raise awareness of its harmful effects and promote the fight against smoking.

Keywords: smoking, cigarettes, students, prevalence

Introduction

Worldwide, approximately 1 billion adults (800 million men and 200 million women) currently smoke cigarettes. This statistics do not represent the global exposure to

tobacco worldwide, since it does not include underage smokers and the use of tobacco without smoking it. Tobacco use kills nearly 6 million people worldwide annually. Each

year, 600,000 non-smokers worldwide die from so-called “secondhand smoke” [1].

Smoking is highly addictive and its use is extremely detrimental to health. Lack of awareness of the harmful effects of tobacco use and the difficulty of quitting the addictive habit, due to mental and nicotine addiction, have led to increased tobacco use. Smoking is a complex stimulus, consisting of visual, tactile, mechanical, olfactory and taste factors. Tobacco smoke contains chemical poisons, irritants, carcinogens and co-carcinogens. Tobacco use has been associated with cases of malignant neoplasms of the lungs, larynx, esophagus, lips and oral cavity, and with the development of chronic bronchitis, emphysema, atherosclerosis, peripheral vascular disease. Tobacco use damages almost every organ in the human body and is associated with heart diseases, stroke, atherosclerosis, respiratory diseases such as COPD and pneumonia, as well as various cancers [2]. Tobacco, which is a peripheral vasoconstrictor, increases platelet adhesion, increases the risk of microvascular occlusion and causes tissue ischemia. Tobacco smoking is also associated with the release of catecholamines, which leads to vasoconstriction and reduced tissue perfusion. Smoking is thought to suppress innate and acquired immunity by affecting the function of neutrophils, the first wall of defense against infection. Carbon monoxide and other chemical compounds are released during the combustion of tobacco. Reduced blood flow to the capillaries is being observed. A clinical study has shown that a cigarette can reduce the rate of peripheral circulation by up to 40% for an hour [3].

Modern cigarette substitutes, such as smokeless cigarettes, heat tobacco to 350C without igniting it, reducing the amount of harmful and potentially harmful ingredients by 90% -95%, compared to conventional cigarettes.

The aim of this study was to determine the prevalence of smoking among students at the Faculty of Dental Medicine, Medical University, Plovdiv, Bulgaria, types of tobacco products being used, the duration and frequency of smoking.

Materials and methods

A questionnaire was handed out to the students at the Faculty of Dental Medicine. It was clarified that participation in the survey was voluntary and anonymous.

From March 2019 to June 2019, 618 questionnaires were returned. Data was processed with SPSS version 23 software for data analysis.

Results

Out of all 618 students surveyed, 421 were Bulgarians (68,12%) and foreigners being taught in English were 197 (31,88%). 256 (41,42%) of all respondents were male and 362 (58,58%) were female. The mean age of the surveyed was 22,82 ± 2,72 years. The youngest participant is 19 years old, and the oldest is 40.

Of the 618 students surveyed, smokers were 224 (36,25%) and non-smokers were 394 (63,75%). Of these 224 smokers, 102 (45,54%) are male and 122 (54,46%) are female. 33,70% of women and 39,84% of men use tobacco products.

Of the 224 students smoking, 182 (81,25%) smoke ordinary cigarettes, 39 (17,41%) smoke smoke less cigarettes, 15 (6,69%) smoke electronic cigarettes with nicotine liquid, 5 (2,23%) smoke pipe, and 3 (1,33%) chew tobacco. Figure 1 shows the distribution by gender and types of tobacco products being used.

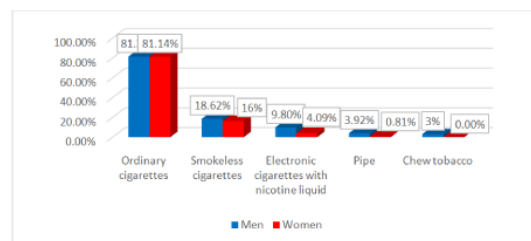


Figure 1: Distribution of the different types of tobacco products being used, according to gender.

Of the 224 students who smoke, 76 (33,92%) use 1 to 5 cigarettes per day, 56 (25,0%) use 5 to 10 cigarettes per day, 52 (23,21%) use 10 to 15 cigarettes per day, 30 (13,39%) use 15 to 20 cigarettes per day, 9 (4,01%) use 20-30 cigarettes per day and only 1 (0,44%) use 30-40

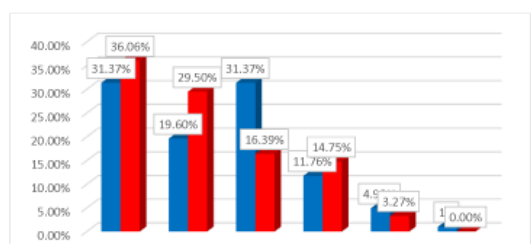


Figure 2: Distribution by the number of cigarettes used per day, according to gender.

cigarettes per day. The distribution by number of cigarettes used per day and by sex is presented in Figure 2.

Of the smoking students, 25 (11,16%) used tobacco products for less than 1 year, 129 (57,58%) for 1-5 years, 61 (27,23%) for 5-10 years, and 9 (4,01%) for 10-20 years. Their gender distribution is presented in Figure 3.

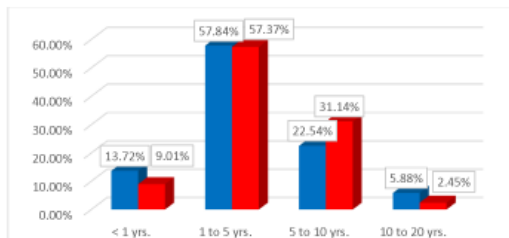


Figure 3: Distribution by the duration of the bad habit, according to gender.

Discussion

The survey we conducted included 618 students. From all participants 224 (36,25%) described themselves as smokers. Similar to our results are those of Thomas CB - 31% [4] and Lee YO et al. - 32,1% [5]. Lower prevalence, but still similar, show the results of Yasso FS [6] - 20,8%, Xinguang C et al. - 28,1% [7] and Foley W] et al. - 23% [8]. Other studies by Udall JA, Purvis JM & Smith DL, Birkner FE & Kunze M, and Coe RM & Cohen JD, Nasser A report a much lower prevalence, respectively 13%, 12%, 14%, 6% and 12,4% [9-13].

Of all 256 male students, 39,84% are smokers. Of all 362 female students, smokers are 33,70%. The data from the World Health Organization coincides with the results of our study. According to WHO, the incidence of smoking in Bulgaria is 44,4% for men and 30,1% for women [14]. The results of most of the authors are the same as ours for male smokers, but according to our data, smoking prevalence among female students is much higher than other authors results. Ng M et al. reported that 31,1% of men and 6,2% of women smoke [15]. Reitsma M B reports that 25% of men and 5,4% of women are smokers [16]. Abdulghani NM reports that 4,3% of female students use cigarettes [17]. Nazary AA reports - 32,3% of male students are smokers [18]. According to Yasso F S, 32,6% of men and 1,6% of female students smoke, and according to Nasser A et al. - male smokers are 10,3% and female smokers are 2,7%.

The results of our study show that 29,44% of all students smoke ordinary cigarettes, 6,3% smoke smokeless cigarettes and 2,42% smoke electronic cigarettes with

nicotine liquid, 0,8% smoke pipe and 0,48% chew tobacco. According to Lee YO et al. 14,9% use only ordinary cigarettes, 6,6% use only cigarette substitutes, and 6,9% of the people use both (5). Brown J et al. report that the prevalence of cigarette substitutes use is 21,9% [19]. Nyman AL et al. reported that people who at least once have used smokeless cigarettes were 2,2% and those who used this type of cigarette regularly were 1,1% [20]. Adkison SE et al. conducted a survey according to which 7,6% of people had ever tried electronic cigarettes with nicotine liquid in their lives and 2,9% used them daily [21]. The results of Sutfin EL et al. confirm ours: 4,9% of the students surveyed have tried e-cigarettes and 1,5% have smoked e-cigarettes in the last month [22]. According to Brose LS et al. 6,24% of people use e-cigarettes [23]. Tabuch T reports that 48% of participants in their study are aware of the existence of e-cigarettes and smokeless cigarettes; 6,6% have used these products at least once and 1,3% have used them at least once in the last 30 days and 1,3% have smoked more than 50 such cigarettes in their lives [24].

Of the 224 smoking students, 76 (33,92%) use 1 to 5 cigarettes per day; 56 (25,0%) use 5 to 10 cigarettes per day; 52 (23,21%) use 10 to 15 cigarettes per day; 30 (13,39%) - 15 to 20 cigarettes per day; 9 (4,01%) - 20-30 cigarettes a day, and 1 (0,44%) smokes 30-40 cigarettes a day. According to Ng M et al. in Bulgaria on average a smoker uses 10 - 20 cigarettes per day. The data we obtained is consistent with the data from the study by Yasso FS et al., - 57,7% of smokers smoke 1 to 10 cigarettes per day, 33,7% use between 10 and 20 cigarettes per day, and only 8,6% use more than 20 cigarettes a day. Emmons KM et al. concludes that 33,7% smoke up to 10 cigarettes a day and 14% smoke more than 20 cigarettes a day. Nazary AA et al. conclude that 89,1% smoke less than 10 cigarettes per day, which does not coincide with the data obtained in our study.

Conclusion

The prevalence of smoking among students at the Faculty of Dental Medicine, at the Medical University of Plovdiv, Bulgaria, in this study coincides with the WHO report of 2018. The prevalence of smoking among male students is the same as in most similar studies, while the prevalence of smoking among female students is much higher compared to the data in the available literature on the topic. Of particular interest is the drastic difference in the prevalence of smoking among Bulgarian-speaking

and English-speaking female students. Ordinary cigarettes are still most widely used, but increasing interest is being observed in cigarette substitutes use.

This study shows that smoking is a huge problem among dental students, despite their awareness of its harmful effects. The fact is that the prevalence of smoking is not decreasing, but rather the opposite. This necessitates the development of more programs for quitting tobacco products use, raise awareness of its harmful effects and promote the fight against smoking.

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