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ORIGINAL ARTICLE

# RISK FACTORS OF SMOKING AMONG STUDENTS OF HIGHER MEDICAL EDUCATIONAL ESTABLISHMENTS OF UKRAINE

## CZYNNIKI RYZYKA PALENIA PAPIEROSÓW W POPULACJI STUDENTÓW MEDYCZYNY NA UKRAINIE

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### ABSTRACT

**Introduction:** Studies of domestic scientists show the unsatisfactory state of health of the population of Ukraine. This is due to a number of socio-economic, political, environmental problems, a low level of material support for the majority of the population, as well as the prevalence of bad habits. Of particular interest is the spread of bad habits among young people, in particular smoking, its connection with various social factors and the impact on health.

**The aim:** The main aim of the study is studying of the factors that cause the spread of smoking among students of higher medical educational establishments of Ukraine and their dependence on the social and economic situation of young people; to investigate the root causes of smoking among students; to analyze the level of the desire to lead a healthy lifestyle and quit smoking in the studied educational establishments.

**Materials and methods:** 435 questionnaires of students of two higher medical educational establishments were analyzed: the Bogomolets' National Medical University, Kiev - 180 and the HSEE of Ukraine «UMSA», Poltava - 255.

**Results:** The study showed that of all respondents, have they tried to smoke once, 268 (61,6%) gave a positive response, and 167 (38,4%) indicated that they had no experience of using tobacco. Among all respondents 162 smoke for the sake of curiosity and in percentage terms it is 37,2%. The personal drama went to the second place and this reason was named by 43 respondents and this is 9,9%. The third position was a combination of two factors of curiosity and drama and is 3,0%.

**Conclusions:** As a result of the study, there is a significant difference between students on smoking daily— 36,7% versus 27,8% ( $p = 0,05$ ). Some differences among the students of the study groups regarding the visit to entertaining establishments – 56,7% of students of the Bogomolets' NMU were determined against 53,7% of the students from the UMSA, but these data are not reliable ( $p=0,33$ ).

**KEY WORDS:** smoking, risk factors, students, medical educational establishments

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### INTRODUCTION

As it known, human health depends on about 10% of high-quality medical care, 16% - from the hereditary fund, 21% - from ecology and 53% - from lifestyle [1, 2]. Studies of native scientists find the unsatisfactory state of health of the population of Ukraine [3, 4, 5]. This is due to a number of socio-economic, political, environmental problems, low level material provision of the majority of the population, as well as the prevalence of bad habits [6, 7].

Way of life is considered one of the main factors of unsatisfactory state of health of the younger generation. The share of its contribution to mortality in poisoning and traumas is almost 60%, with infectious diseases - 43%, with diseases of organs of circulatory system, respiration, digestion, nervous system - 30-35%, with ischemic heart disease and vascular lesions of the brain - > 60%, with malignant neoplasms - 35% [8, 9].

Tobacco smoking is one of the main medical and social problems of our time [10]. On a global scale, about 1 bil-

lion people smoke, the vast majority of whom are men. Smoking is one of the main modified risk factors that lead to an increase in the incidence, disability and mortality of the able-bodied population [11, 12].

The main points of the negative influence of smoking on the human body result in such changes as the development of respiratory infections, the formation of chronic bronchitis, chronic obstructive pulmonary diseases, pneumosclerosis, various oncological diseases of the respiratory tract, an increased risk of coronary heart disease and atherosclerotic changes, the development of vascular lesions of the lower limbs increase the risk of impotence and oligospermia in men, a series of behavioral changes is formed [13].

Particular interest attracts the spread of harmful habits among young people, in particular smoking, its connection with a variety of social factors and its impact on health. According to the literature, in recent years there is an increase in the percentage of smoking among the younger part of the population. As is known from the data of various statistical

studies, the beginning of the use of tobacco smoking is 12-13 years, and subsequently hecatically increases, reaching the maximum figures for 22-25 years [14, 15].

Preventive measures aimed at reducing the use of tobacco products cover all levels from the individual to the governmental [16, 17]. The main preventive mechanisms are the creation of a regulatory framework for the distribution and restriction of tobacco use, reducing the level of popularization of tobacco smoking, and raising the awareness of the general public about the benefits of a healthy lifestyle and mechanisms for modifying behavior, modernizing the work of treatment and prevention institutions by focusing on comprehensive preventive maintenance of behavioral risk factors, etc.

Despite the wide range of measures implemented at both the state and regional levels, indicators of official statistics and subjective well-being of both the general population and students are characterized by unfavorable tendencies. The main reasons for this situation are the lack of inter-sectoral integration of preventive measures, the impact of aggressive environmental factors and unhealthy lifestyles, which is characterized by modern student environments.

According to statistics, 45% of adult men and 9% of adult women are smoked daily in Ukraine; among young people smokes 45% of boys and 35% of girls. In total in the country there are about 9 million active smokers, accounting for one third of all able-bodied population [18, 19, 20].

## THE AIM

The main aim of the study is studying of the factors that cause the spread of smoking among students of higher medical educational establishments of Ukraine and their dependence on the social and economic situation of young people; to investigate the root causes of smoking among students; to analyze the level of the desire to lead a healthy lifestyle and quit smoking in the studied educational establishments.

## MATERIALS AND METHODS

To fulfill the research purpose, we conducted a questionnaire for student youth. For this purpose, closed-form questionnaires were used that contained questions that allowed a broader coverage of the various spheres of education of the factors that stimulated the smoking of our respondents. The questionnaire was conducted in two higher medical educational institutions. This is the Bogomolets National Medical University, Kiev and the Ukrainian Medical Stomatological Academy, Poltava.

The realization of the goal required the use of a set of interrelated and complementary general scientific and special medical and social research methods aimed at obtaining objective and reliable results based on a systematic approach. 435 questionnaires of students of two higher medical educational institutions were analyzed: the Bogomolets National Medical University, Kiev - 180 (41,4%) and the HSEE of Ukraine «UMSA», Poltava - 255 (58,6%), of them men - 140 (32,2%), women - 295 (67,8%).

In this investigation, the following methods of scientific research were used:

1. System approach and system analysis - at all stages of work to form and solve the research problem.
2. Historical-analytical and bibliosemantic - to analyze the data of scientific literature, as well as to study the domestic and world experience on the problem of the study.
3. Medico-statistical - for the collection, processing and analysis of research materials (methods of descriptive and analytical statistics for determining relative indicators), a study of the prevalence of smoking among young people in Kiev and Poltava.
4. Sociological - to study the awareness of young people in higher education institutions regarding smoking using questionnaires.
5. Epidemiological - to assess the prevalence of tobacco smoking among the population of Kiev and Poltava.

## RESULTS AND DISCUSSION

The questionnaires were passed by students from two educational institutions: the Bogomolets National Medical University in Kiev - 180 (41,4%), and the Higher State Educational Establishment of Ukraine «Ukrainian Medical Stomatological Academy» in Poltava - 255 (58,6%) (Fig. 1).

After the initial processing of questionnaires, the respondents distributed as follows. A total of 435 people participated in the study, of which 140 males (32.2%), women 295 (67.8%).

According to the questionnaire, the number of students from the city was 384 (88,3%), from the village 51 (11,7%). By age, we divided them into 2 groups: from 19-21 year - 276 (63,4%); 22 and older - 159 (36,3%). When asked about the experience of smoking: "Have you ever smoked?"; 268 (61.6%) gave a positive answer, and 167 (38.4%) of respondents indicated that they had no experience with tobacco use. 300 (69,0%) of the respondents reported that they did not smoke a minimum of 100 cigarettes or an equivalent amount of tobacco in their entire lives, while 135 (31,0%) of the students answered positively. They answered questions that they do not smoke daily and such amounts was 298 (68,5%), respectively 137 (31,5%) students smoked daily. To date, 318 (73.1%) students do not smoke, while the other 117 (26.7%) do not leave this harmful habit. Sometimes 64 (14.7%) of respondents do it.

The desire to quit was expressed by the majority, which included those respondents who do not smoke at all, it were 402 (92,4%) students. The rest did not decide to get rid of this habit (Fig.2).

For most, the cause of smoking was the inheritance of the idol or personal drama, such persons turned out to be 46 (34%). Example of parents or curiosity prompted to try to smoke 40 (29%) people. For others, among the reasons were the desire to look adult and the desire to lose weight (37%) (Fig.3).

Among the financial income, the following main sources were identified: 168 (38.6%) live at the parents' expense; 67 (15,4%) receive wages; 45 (11,0%) indicated that they receive income from scholarships and parents; 34 (7,8%) reported that they use all listed sources; and only 25 (5,7%) have a scholarship and a salary (Fig. 4).

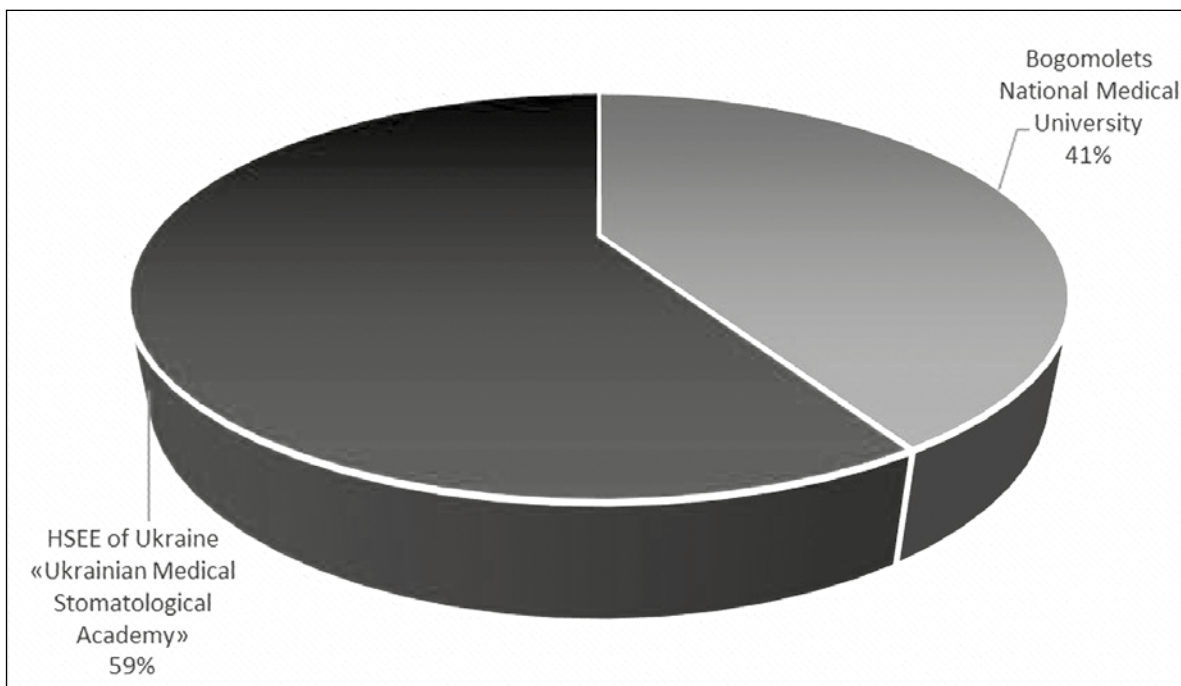


Fig. 1. Distribution of respondents at the place of study.

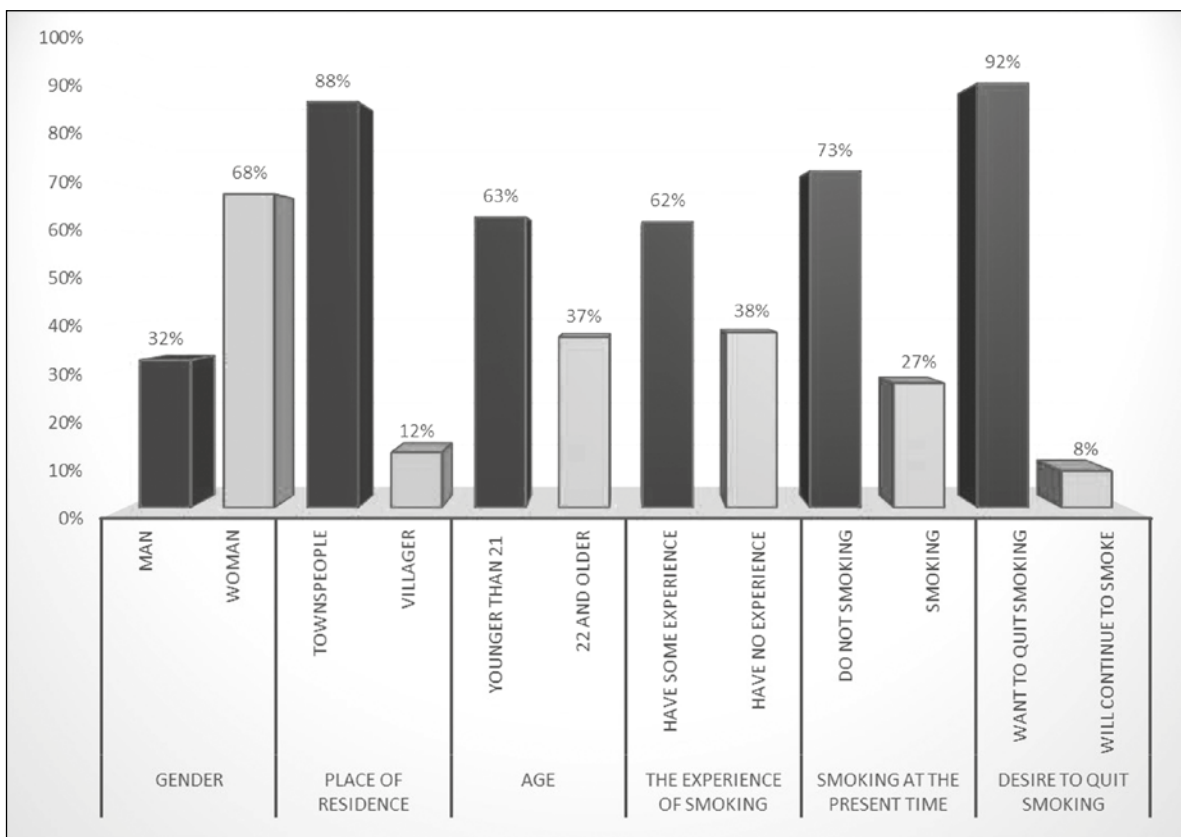
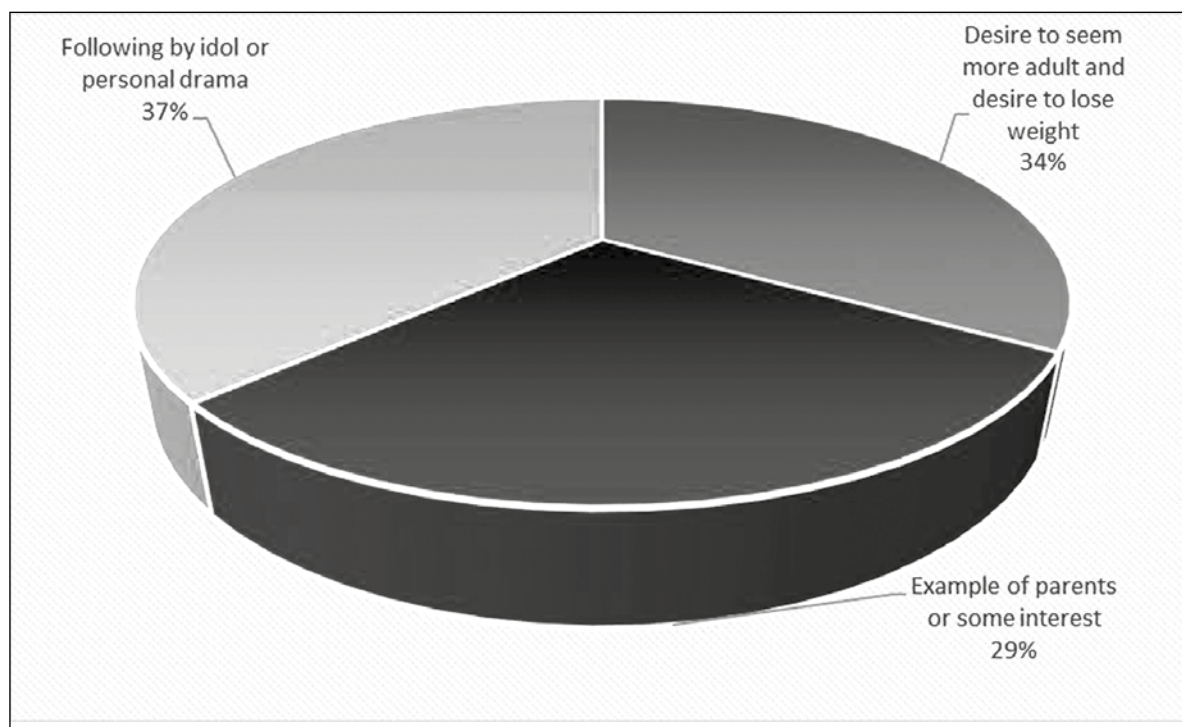


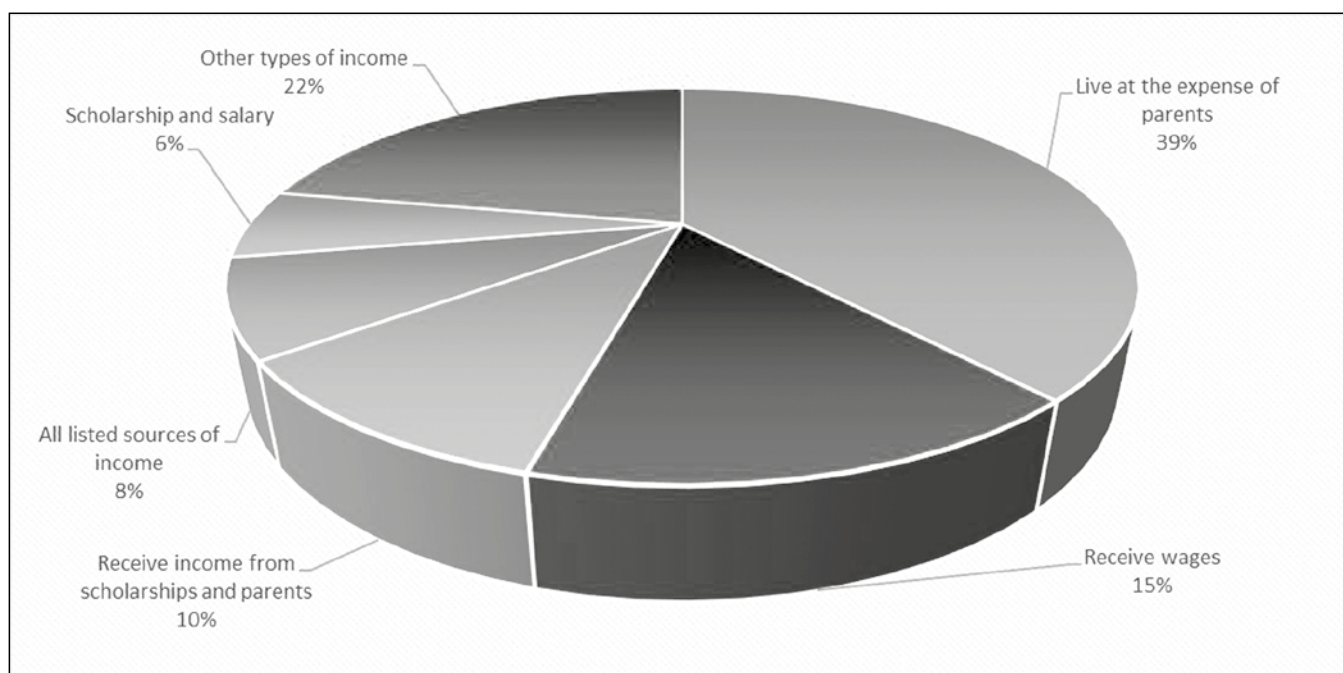
Fig. 2. Epidemiological and sociological characteristics of respondents

When analyzing the answers to the question about visiting entertaining establishments, 239 (54.9%) answered that they were in them, while another 195 (44.8%) pointed to the answer “no” (Fig.5).

To leave a bad habit, 227 (52.2%) of the respondents chose their will as a method of refusing, 186 (42.8%) respondents did not decide this question. Among those who made their choice, the greatest number preferred



**Fig. 3.** The structure of the root causes of smoking according to respondents who smoke at the given time or have smoked in the past.



**Fig. 4.** Distribution of respondents at the place of study.

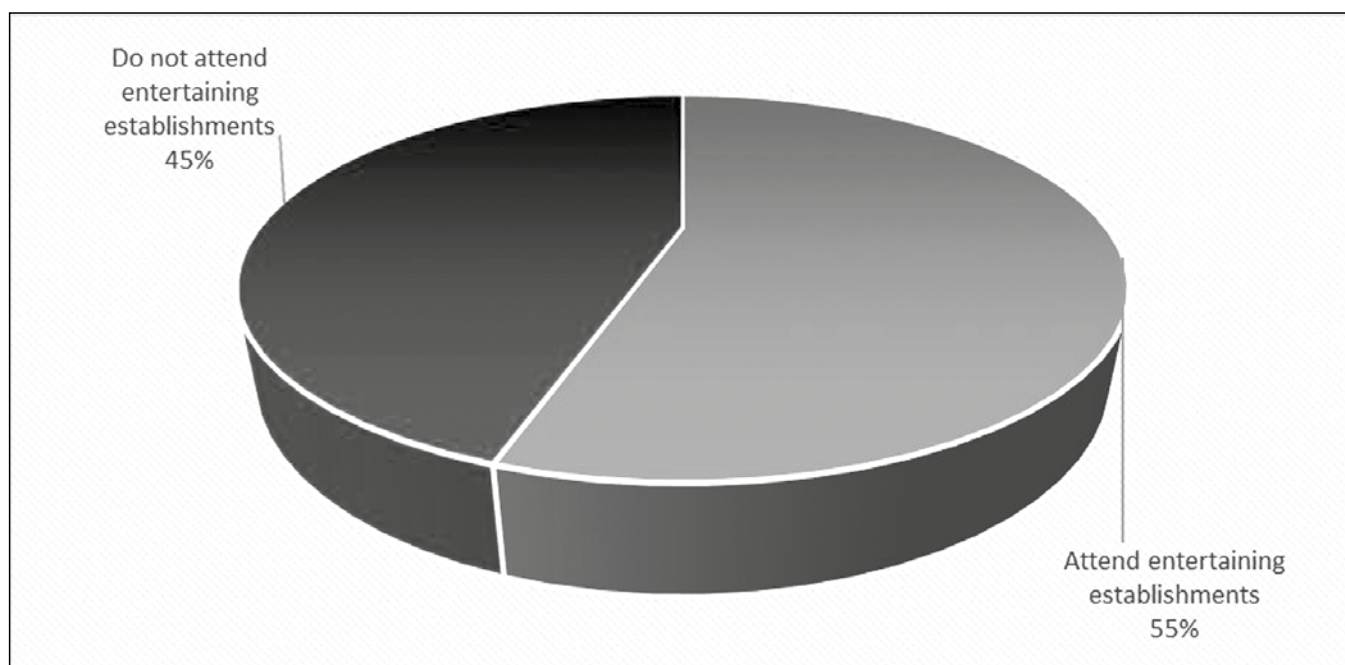
treatment from a psychologist or psychotherapist 7 (1,6%). The remaining 5 (1,1%) determined their preference for medication.

To create a support group and become its initiator decided 80 (18,4%) of the respondents.

Among all respondents 162 smoke for the sake of curiosity and in percentage terms it is 37,2%. The personal drama went to the second place and this reason was named by 43 respondents and this is 9,9%. The third position was a com-

bination of two factors of curiosity and drama and include 3,0% (13). One answer less was desire to look like an adult (12 or 2,8%). Even fewer students indicated curiosity and a desire to be an adult as a reason - 9 respondents (2,1%).

Having considered the obtained data in the context of the examination separately for each university, we found such a distribution. In Kiev, among the respondents, it was revealed that 117 (65,0%) smoked anywhere, in Poltava - 151 (59,2%) respectively ( $p = 0,231$ ) (Table 1, 2).



**Fig. 5.** Epidemiological and sociological characteristics of respondents

**Table I.** Attitude to smoking among students of higher medical institutions in Kiev and Poltava

	Students		P
	Bogomolets NMU abs(%)	HSEE «UMSA» abs (%)	
Smoked anywhen	117 (65,0)	151 (59,2)	0,231
Smoke daily	66 (36,7)	71 (27,8)	0,05
Smoke always now	32 (17,8)	32 (12,6)	0,32
Smoke sometimes now	20 (11,1)	32 (12,6)	0,32
Visit entertaining establishments	102 (56,7)	137 (53,7)	0,33
Plans to quit smoking	163 (90,6)	239 (93,7)	0,270
Initiate support groups	18 (10,0)	62 (24,3)	0,01

Among all respondents 66 (36,7%) and 71 (27,8%) ( $p=0,05$ ) respectively were smoked daily. To date, among the respondents it was revealed that in both cities smoked the same number of people - 32 people, but in percentage terms it was 17,8% and 12,6% ( $p = 0,32$ ) of the number of questionnaires received. Also, a small number of respondents answered that smoking is not always permanent. There are 20 (11,1%) in Kiev University, and 32 (12,6) in Poltava ( $p = 0,32$ ).

In the capital, in the relative dimension, more students attend entertaining establishments and this is 102 (56,7%), in Poltava this figure is 137 (53,7%) ( $p = 0,33$ ). Among our study groups, the result was that the desire to quit smoking had 163 (90,6%) and 239 (93,7%) ( $p = 0,270$ ).

To help and support their friends in the decision to stop smoking by creating a support group, 18 (10,0%) expressed a desire in Kyiv University, in Poltava - 62 (24,3%) ( $p = 0,000$ ).

In the received personal data we found out how many of them tried to smoke and what was the main driving force for this. In general, 64 (35,6%) had no experience in smoking, and in Poltava it was larger number - 99

(38,8%). One of the most-named reason to try was to imitate his idol and personal drama, 17 (9,4%) and 29 (11,4%) students chose this. Imitated their parents and took an example of their behavior, and also for the sake of curiosity - 23 (12,8%) and 17 (6,7%) respectively. The following respondents indicated that all of the above reasons were the basis for them to make a decision to try, at Kiev University - 15 (8,3%) and Poltava - 21 (8,2%). The next reason students called was imitation of parents - 11 (6,1%) and 20 (7,8%). Even fewer respondents named imitations of their parents and wanted to lose weight, in Kiev it amounted to 17 (9,4%), in Poltava - 10 (3,9%). Also interesting is the data obtained by stereotyped desire to imitate parents in their habits, and also look more mature: in the Bogomolets NMU was 14 (7,8%), and in UMSA 6 (2,4%) students. Quite a few students have chosen the options that have absorbed three directions: this is an example of parents, a life drama and a desire to look like an adult (in Kiev 4 (2,2%) was chosen and in Poltava 15 (5,9%) ( $p = 0,016$ ). Other reasons to try was selected by a small number of respondents.

Among the reasons that were chosen as the basis of why they smoke, the championship takes curiosity: in Kiev - 70 (38,9%), in Poltava - 92 (36,2%). In the second place is a personal drama, it was chosen by 24 (13,3%) and 19 (7,5%) of the respondents. The following variant of "curiosity / drama" appears with a lower result: in the capital's university it was not chosen by anyone, but in Poltava it was chosen by 13 (5,1%) students. A desire to look like an adult was chosen quite a bit among the respondents - 2 (1,1%) and 10 (3,9%), respectively. Other of the proposed options were selected by a relatively small number of respondents - from one to six and the total  $p = 0,002$ .

Our respondents have identified for themselves such sources of their income. The support of parents came first: in Kiev it was chosen by 57 (31,7%), and in Poltava by 111 (43,5%). Also, a significant share fell on income from wages: 52 (28,9%) for Kiev students, and only 15 (5,9%) in Poltava. Income from the scholarship and parents in accordance was indicated by 11 (6,1%) and 37 (14,5%) students. Somewhat less indicated the source of their incomes as salaries and parental aid, and for universities this was 15 (8,3%) and 30 (11,8%). Also 13 (7,2%) and 31 (12,2%) indicated that they use only the funds received from the scholarship. Of all the sources listed, income is 17 (9,4%) and 17 (6,7%), respectively. And quite a few receive income from wages and scholarships, these amounted to 12 (6,7%) in UMSA in Poltava and 13 (5,1%) in Kyiv's NMU. The odds ratio was  $p = 0,330$ .

For the refusal of smoking, the majority chose a way of will power, in Kiev - 63 (35,0%), in Poltava - 164 (64,3%). Among the others who made their choice, they preferred the treatment from a psychologist or psychotherapist - 2 (1,1%) and 5 (2,0%), respectively. The following preference was given to the medication: 1 (0,6%) and 4 (1,6%). Other of the proposed methods scored less than 1%.

## CONCLUSIONS

As a result of the study, the prevalence of tobacco smoking as well as some of its predictors among the students of higher medical educational institutions of Ukraine, which are presented by the Bogomolets National Medical University (Kiev) and the Higher State Educational Establishment of Ukraine «Ukrainian Medical Stomatological Academy» (Poltava), the following conclusions were made :

- 1 The number of students who have ever used tobacco between the studied universities is not significantly different ( $p = 0,231$ ).
- 2 There is a significant difference between students in the studied educational institutions on smoking daily (in the past) - 36,7% versus 27,8% ( $p = 0,05$ ). At the time of the study, there was no significant difference among students who smoke regularly: 17,8% versus 12,6% ( $p = 0,32$ ). A similar picture is observed among students who do not always use tobacco products - 11,1% compared to 12,6% ( $p = 0,32$ ). This indicates a positive preventive work in educational institutions for the formation of healthy lifestyle habits.
3. Some differences among the students of the study groups regarding the visit to entertaining establish-

ments - 56,7% of students of the Bogomolets NMU were determined against 53,7% of the students from the UMSA, but these data are not reliable ( $p=0,33$ ).

- 4 In both study groups there is a high level of desire to lead a healthy lifestyle (not to smoke further or to leave this bad habit) - 90,6% versus 93,7%, reliability ( $p = 0,270$ ).
- 5 It is determined that 10% of students from NMU want to create a support group for quitting smoking versus 24,3% in the UMSA, the reliability of such differences is very high ( $p = 0,001$ ).
- 6 Investigation of the causes of smoking attempts determined that the main causes in both groups are the same: curiosity ranks first and is 38,9% in Kiev and 36,2% in Poltava; in the second place is personal drama - 13,3% and 7,5%, other options were chosen by a rather small number of respondents, the total  $p=0,002$ .
- 7 The study of the main sources of income between students of different universities did not reveal any significant differences. The odds ratio was  $p=0,330$ .

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**Authors' contributions:**

*According to the order of the Authorship.*

**Conflict of interest:**

*The Authors declare no conflict of interest.*

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