

ORIGINAL ARTICLE

COMPARISON OF PREVALENCE OF TOBACCO USE AMONG YOUNG PEOPLE IN DIFFERENT COUNTRIES

DOI: 10.36740/WLek202205123

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ABSTRACT

The aim: The prevalence analysis of three ways of tobacco use among young adults: traditional (smoking of cigarillos or cigars) and alternative (hookah smoking and use of E-cigarettes) as well as the development of ways of tobacco smoking prevention.

Materials and methods: Cross-section anonymous survey among young adults 18-44 years of age (n=410) has been conducted. The obtained results were compared with the data of the similar studies from different countries. The statistical methods (analysis of the mean and relative values), structural and logical analysis and systemic approach.

Results: Among those who were interviewed, aged 18-44 years, there are 24.15±2.11 % of respondents - hookah smokers, 9.02±1.42 % persons prefer the traditional method of tobacco use (smoking of cigarillos or cigars), while 6.34±1.20 % ones use E-cigarettes. Such forms of smoking are more common among males. The smokers of cigarillos, cigars and hookahs have appreciated their high availability when buying - 9 (7;10) points out of 10 possible. The study has found that 11.54±1.58 % of smokers of E-cigarettes and 8.08±1.35 % of hookah smokers consider them safe types of smoking and harmless to their health.

Conclusions: The prevention methods of smoking prevalence among young people must be based on the tougher rules of tobacco market and latest devices for smoking at the legislative level.

KEY WORDS: young adults, young people, hookah, E-cigarettes, cigars and cigarettes

Wiad Lek. 2022;75(5 p1):1180-1184

INTRODUCTION

Tobacco smoking remains a global problem of humanity. There are 1.3 billions of tobacco smokers in the world. Every year, 7 millions of active smokers and 1.2 millions of passive smokers who are influenced by the passive smoking, died [1].

The problem of prevalence of tobacco use among youth has acquired the global significance. In comparison with the adults, the young people need smaller number of cigarettes and less time to become nicotine dependent [2].

In the WHO report on the global tobacco epidemic of 2021 [3], the information is given concerning the prevalence of new forms of tobacco use, in particular such as electronic nicotine delivery systems (ENDS).

Simultaneously, in view of propaganda conducted by the tobacco manufacturers as to security of such forms of smoking, the number of users of this type of tobacco consumption continues to grow, and particularly with involvement of youth.

Within limits of the WHO Framework Convention on Tobacco Control, the cooperation between the participating countries as to strengthening the evidence base continues as well as the development of relevant legislation in the field of another form of tobacco use – hookah smoking [4]. The relevance of this research is stipulated by the analysis of prevalence of the latest forms of tobacco use, and par-

ticularly among young people, as well as the development of educational and political activities in the field of public health for prophylaxis [5, 6].

THE AIM

The prevalence analysis of three ways of tobacco use among young adults: traditional (smoking of cigarillos or cigars) and alternative (hookah smoking and use of E-cigarettes) as well as the development of ways of smoking prevention.

MATERIALS AND METHODS

One-time anonymous survey among young adults aged 18-44 years in Lviv region (n=410) has been conducted; out of them 200 males (48,78±2,47 %) and 210 females (51,22±2,47 %). Time of the survey: 15 of January – 14 of February 2020.

The obtained results were compared with the data of the similar studies from different countries. The statistical methods (analysis of the average and relative values), conceptual modeling, structural and logical analysis and systemic approach were used.

During the analysis of the average values in order to determine the normality of distribution, the Shapiro-Wilk criterion/test was used. In case of Gaussian distributions, the

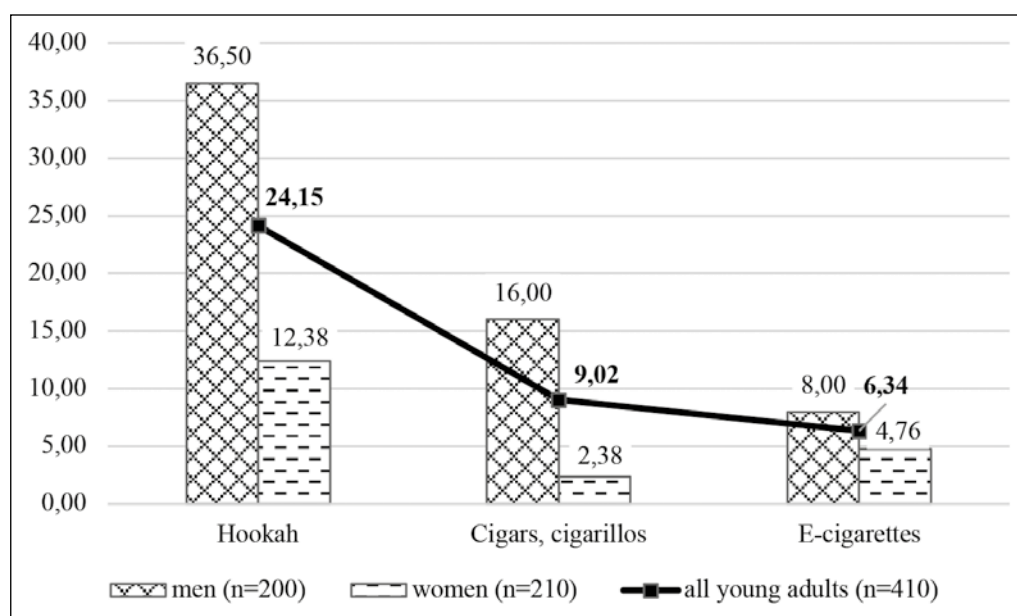


Fig.1. Prevalence of separate forms of tobacco use among young people (%)

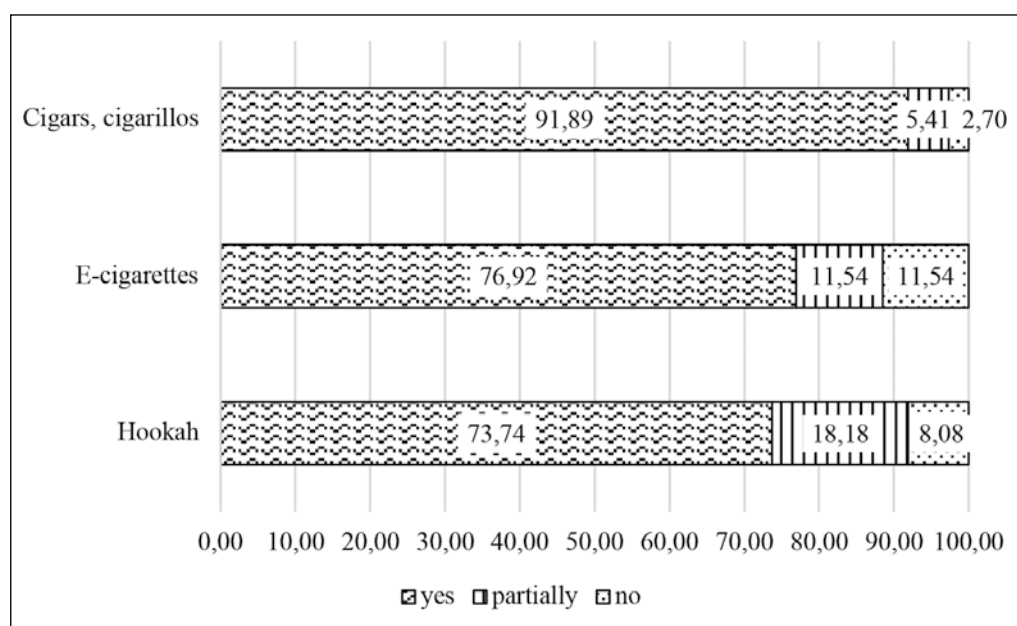


Fig.2. Awareness of smokers as to the harmful effect of tobacco use on their health status (%)

results were given as $M \pm SD$ (arithmetic mean and its standard deviation); in case of non-Gauso skirstinys, the results were given as $Me (25\%; 75\%)$, where Me – median, 25% – the first quartile, 75% – the third quartile.

The results of analysis of the relative values were given as intensive indicators and their mistakes, which were calculated by Wild method ($P \pm p$). The reliability of difference between the relative values was established with the help of xi-square.

The difference of samples was considered reliable in $p < 0,05$. All statistical calculations were performed using software RStudio v. 1.2.5042.

RESULTS

The research has found that a quarter of young respondents ($24.15 \pm 2.11\%$) are smokers or were hookah smokers,

$9.02 \pm 1.42\%$ prefer to smoke cigarillos or cigars, while $6.34 \pm 1.20\%$ use E-cigarettes.

The distribution by sex allows us to state that such forms of smoking are more common among males: so, the number of young males who smoke hookah is 2.8 times higher in comparison with females, the E-cigarettes are preferred by males, 1.6 times higher than by females, as to the traditional method of tobacco use, i.e., smoking of cigarillos or cigars is in 6.4 times more common among males (Fig.1).

The median (middle) value of age for the start of active cigarillos or cigars' use – 18 (16; 20) years (the minimum value of age for the start of active cigarillos or cigars' use among young people – 14 years, the maximum value of age – 37 years). The middle age for the start of active hookah smoking – 18 (17; 20) years, (the minimum value of age – 15 years, the maximum 35 years). Young people start to use E-cigarettes actively in the middle in 25 (19; 37) years (the minimum age – 16 years, the maximum age – 41 years).

The age distribution of smokers considering their gender, no significant gender differences as to smoking of cigarillos or cigars and hookah were established. But the start of E-cigarettes use actively by young males is 29 (19.75; 37.25) years, while for the young females – 22.5 (18.25; 27) years.

The frequency analysis of the analyzed methods of tobacco use has testified that among the smokers of cigarillos or cigars 43.24±2.45 % smoke them every day, 37.84±2.40 % – at leisure, parties, celebrations, 13.51±1.69 % – several times a week and 5.41±1.12 % – several times a month.

The majority of the interviewed young people, namely 69.70±2.27 %, smoke hookah at leisure, parties, celebrations, 25.25±2.15 % use it several times a month and only 5.05±1.08 % – several times a week.

One third of smokers of E-cigarettes (34.62±2.35 %) use them several times a month, 30.77±2.28 % – at leisure, parties, celebrations, a quarter of respondents use them every day and 7.69±1.32 % – several times a week.

The mean number of smoked cigarillos, cigars is equal to 4 (1; 8) cigars for a week. The minimum quantity of smoked cigars – 1 cigar for 3 weeks, while the maximum – 20 cigars for a week.

There is a significant difference in the mean number of the smoked cigarillos, cigars among males and females, namely, 4 (1; 8,25) cigars in males and 2 (1; 5) cigars in females. The minimum quantity of smoked cigars by females is 1 cigar once every 2 weeks, while the maximum – 10 cigars a week.

The median value of smoked hookahs is 0,5 (0,5; 1) of hookah a week, i.e., 1 hookah once every 2 weeks. The minimum quantity of hookahs – 1 hookah once every 2,5 months, while the maximum – 4 hookahs a week.

57.69±2.44 % of smokers of E-cigarettes use them instead of common tobacco smoking.

The analysis of the respondents' answers as to their awareness of the harmful effects and health risks from those forms of tobacco which they use, has testified that 91.89±1.35 % of cigarillos smokers, cigars, 76.92±2.08 % of electronic cigarette users and 73.74±2.17 % of hookah smokers know about the danger of smoking.

Instead of this, 18.18±1.90 % of hookah smokers partially aware the negative influence of hookah on their health, and 8.08±1.35 % consider it harmless for their health.

In its turn, among the users of E-cigarettes, 11.54±1.58 % of respondents partially aware the negative influence of these products on their health and the same number (11.54±1.58 %) of smokers consider them a safe type of smoking (Fig.2). The reported results allow us to make a conclusion that perception by youth the E-cigarettes and hookah as a safe and harmless methods of smoking to their health, is erroneous. Consequently, it is necessary to strengthen the informational, educational and elucidatory policy among young adults concerning harm to their health of the methods of tobacco use that have been considered as well as negative consequences in remote perspective.

Further, it was suggested to respondents to assess availability of the selected methods of smoking, using a ten-point scale (1-unavailable, 10 – available), when buying

tobacco products. Smokers of cigarillos, cigars and hookahs assessed their availability in 9 (7;10) points, while the users of E-cigarettes – in 7,50 (5; 9,75) points.

High availability of cigarillos, cigars and hookahs can be seen as an extra stimulus of young people to start smoking. Therefore, at the state level, it is necessary to strengthen the restrictive measures as to selling these products, to strengthen the educational work at higher educational institutions, that, in its turn, will contribute to the reduction of their attractiveness and accessibility for young people.

Tobacco smoking is not only harmful to smokers' health, but it causes significant financial damage. So, during the research, we've calculated the median value of smokers' weekly expenses as to these specified methods of tobacco use.

In particular, the smokers of cigarillos and cigars, on average, spend on these tobacco products 200 (100; 400) hrn a week, hookah smokers – 120 (85; 200) UAH / a week and those young people who use E-cigarettes 60 (50; 100) hrn a week.

The purchase costs of those young people who prefer the traditional form tobacco use, i.e., cigarillos or cigars smoking are from 50 to 1000 hrn a week. Those young people who use alternative methods of smoking spend 20 – 750 hrn a week on a hookah smoking and 30 – 350 hrn – for E-cigarettes.

We've calculated during the research that in case of recalculation, taking into account the current US dollar exchange rate, the median annual costs of cigarillos or cigar smoking wasted by youth in Lviv region were equal to 428.87 US dollars per year, for hookah smoking – 257.32 US dollars, for the E-cigarettes – 128.66 US dollars.

The majority of respondents (76.92±8.26 % of electronic cigarette smokers, 68.69±4.66 % of hookah smokers and 40.54±8.07 % cigarillos or cigars smokers) failed to give a clear answer what was the reason for their smoking start. However, among the answers given by respondents, we have identified the main ones.

In particular, 16.22±6.06 % of young smokers of cigarillos or cigars claim to have smoked for the first time in order to relax in stress situations; 13.51±5.62 % of young people recognize that were influenced by propaganda and start to smoke because it was fashionable and cool; 10.81±5.10 % smoked for the first time for the company.

However, 12.12±3.28 % of hookah smokers decided to try it for first time for a pleasant pastime in the company of friends, i.e., as a means of socialization.

It is noteworthy that interest and curiosity were the dominant factors for smoking start in 10.81±5.10 % of cigarillos or cigars smokers and 9.09±2.89 % – hookah smokers.

Wherein, 23.08 % of electronic cigarettes users, 10.10 % of hookah smokers and 8.11 % of respondents who smoke cigarillos or cigars have indicated other reasons that were much less common.

DISCUSSION

The study of the latest methods of tobacco use by youth is the circle of interests of the international scientific community.

A significant number of scientific research is dedicated to finding out the reasons of using the alternative methods of smoking by young people such as E-cigarettes and hookah. In particular, Okawa S., Tabuchi T., Miyashiro I. (2020) according to the results of the cross study which was carried out among the individuals, 15-29 years of age, have found that the main reasons of the E- cigarettes' use are interest in fruit flavors, a stylish design and as well as the influence of friends who are already in use of E-cigarettes [7].

Kinouani S at al. [8] based on the systematic review of literature have summed up that regardless of smoking status, interest is the most frequent reason of smoking start of E-cigarettes among young people.

In turn, for young people, 18-23 years of age, who are hookah smokers, this procedure is associated with relax and social experience (Barnett T.E., Lorenzo F.E., Soule E.K., 2017) [9].

The similar data of hookah use as a means of socialization were received by Nicksic N.E. at al. [10] based on the personal interviewing the hookah smokers, from 18 to 29 years, who live in the city of Austin (State of Texas); according to it, only one third of the study participants smoked hookah alone and not in the company.

This study confirms the fact of influence of the hookah flavoring peculiarities when it is consumed: all study participants used the flavored tobacco on the first try of hookah smoking. Wherein, the fruit aromas were the most popular both at the beginning of smoking and for further current use [10].

The age research of smokers of E-cigarettes is given in the publication of the Polish scientists Jankowski M., at al. (2020) [11], who has carried out a cross poll among the Polish university students; it has shown that the middle age of those who firstly use the traditional cigarettes was much lower if compared with the consumers of E-cigarettes.

Much attention of scientists is focused on the study of subjective evaluation of consumers of alternative methods of smoking and harm to their health.

Despite the fact that the hookah smokers consider it harmful and addictive, however, most of them are not sure whether hookah is just as harmful for health as smoking of traditional cigarettes [10].

The results of the study of hookah smoking among young people in Mumbai (India) are interesting. The survey was conducted among 500 college students. The obtained results of the survey were classified into 2 groups: hookah smokers and those who do not use it. Dani K.K., at al. [12] state that perception of hookah use among its users and non-users, as well as between males and females showed significant differences as to the harmful effect on their health and the possibility of causing cancer and addiction. Whereas the differences in perception of hookah as a means of communication and its security compared with the traditional cigarettes in a group of hookah smokers and non-smokers, were not observed.

The disappointing trend as to the level growth of constant use of hookah tobacco among young Americans is reflected in the work of the American scientists Soulakova J.N., at al (2018). Based on data analysis from the Addition/Annex

as to the tobacco use for 3a 2010–2011 and 2014 – 2015 years, a team of scientists was able to find out that the level growth of constant hookah tobacco use was the highest among the people 26–30 years of age and was due to many socio-demographic factors [13, 14].

The information provided below shows the importance of further research in this direction, in particular it will be relevant as to efficient use of the alternative (latest) methods of tobacco consumption by young people with the aim to stop smoking the traditional cigarettes.

CONCLUSIONS

For the purpose of prevention the prevalence use of tobacco products, including the latest forms of tobacco consumption among the young people, it is necessary to strengthen measures of primary prophylaxis aimed to impede the desire to start smoking as well as creating tougher conditions of anti-tobacco legislation. It is also important to strengthen the educational work among education applicants on pre- and postgraduate levels in all educational institutions (primarily medical) concerning the questions on prevention all types and forms of tobacco use.

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The present study is a fragment of the research project «Determinants of rural health and life expectancy» (2018-2022, № state registration 0118U000099).

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Conflict of interest:

The Authors declare no conflict of interest.

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Received: 17.11.2021

Accepted: 06.04.2022

A - Work concept and design, B - Data collection and analysis, C - Responsibility for statistical analysis, D - Writing the article, E - Critical review, F - Final approval of the article



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