

PREVALENCE OF ELECTRONIC CIGARETTES AMONG YOUNG PEOPLE

Rasa GLINSKIENĖ, Reda JONUŠAUSKIENĖ

Panevėžio kolegija / State Higher Education Institution, Lithuania

Abstract. Smoking is a global epidemic that has posed serious health concerns for many years. Recently, e-cigarettes and innovative heated tobacco products have become increasingly popular among young people in various European countries, including Lithuania. The increased prevalence of e-cigarette use among youth is attributed to several factors, including the misconception that e-cigarettes are harmless. One of the primary reasons why adolescents use e-cigarettes is social acceptance and companionship. Given the rapid spread of e-cigarette use among young people and the fact that the long-term consequences of their use may not be less than those of conventional tobacco products, it is important to analyse in detail their use patterns and causes in order to reduce their spread. This study aims to determine the prevalence, habits, and causes of e-cigarette smoking among young people aged 18-35 in a north-eastern Lithuanian town. To achieve the objective of the study, a descriptive research design was employed and primary data were collected by means of a survey method, based on a questionnaire developed by the authors of this study. 351 young people aged between 18 and 35 in the north-eastern Lithuanian town participated in the survey, over the course of March and April 2023. Study shows that of all respondents, 44.4% had smoked (vaped) at least once in the last 12 months and 10% had smoked (vaped) at some point in the past 12 months but had quit. The largest proportion (34%) smoke only e-cigarettes and 25% only heated tobacco products (HTPs). More than half (54.5%) of young smokers in the city of study have smoked (vaped) for more than five years and almost 39% for more than one year. Almost 90% of smokers smoke and/or vape daily. 31% smoke and/or vape 6-10 times a day. Almost 14% of smokers smoke and/or vape more than 20 times a day.

Keywords: young people, electronic cigarettes, prevalence

INTRODUCTION

The prevalence of smoking has become a global pandemic. In recent years, the use of electronic cigarettes and other innovative smokeless tobacco products has become increasingly popular among young people in many European countries, including Lithuania.

While implementing tobacco control measures the number of daily smokers in Lithuania has decreased from 24.5% to 18.9% between 2005 and 2019. Although the largest decrease was observed in the 25–34 age group, there were no changes in the youngest 15–24 age group, where the number of smokers remained at around 20% (Statistics Lithuania, 2020). Eurobarometer surveys in Lithuania showed that in 2020, 37% of those who smoked electronic cigarettes (hereinafter referred to as e-cigarettes) were 15–24 years old, and 36% of smokers were 25–39 years old. During the COVID-19 pandemic, the use of tobacco products has become an even more pressing problem, as this infection is particularly dangerous for people with smoking-related diseases (Vaitkevičiūtė et al., 2022).

The increasing number of young people using e-cigarettes is due to a number of factors, one of which is the prevailing young people's attitude that e-cigarettes are harmless to health. One of the main rationales of adolescents who use e-cigarettes is companionship.

In Lithuania, the control of both traditional and novel tobacco products is implemented by the Tobacco, Tobacco Products and Related Products Control Act of the Republic of Lithuania. In 2014, a version of the law was adopted that transferred the provisions of the European Parliament and Council Directive 2014/40/EU of 3 April 2014 into national law, which strengthened the regulation that was in force before. The law defines conditions for the sale and use of novel tobacco products and regulates their restriction on the sales to minors. Currently, persons under the age of 18 are prohibited from using these devices or possessing them. The regulation of modern tobacco products is not much different from that of traditional tobacco products. The sale, manufacture, and distribution of these products are subject to a comprehensive regulatory framework that includes licensing requirements, excise duty obligations, advertising prohibitions, including hidden advertising, remote sales prohibitions, and mandatory labelling and warnings regarding potential health risks. Since July 1, 2022, e-cigarettes and their cartridges with liquid have been banned if they contain flavouring substances, except for tobacco flavour and taste (*Law on Control of Tobacco, Tobacco Products and Related Products of the Republic of Lithuania*, 1995; *Directive 2014/40/EU*, 2014). Since October 23, 2023, an amendment to the Law on Tobacco, Tobacco Products and Related Products has been adopted, which prohibits the sale of heated tobacco products with added flavour or taste.

Successful smoking prevention and support for people who want to quit smoking helps to effectively and economically improve individual and public health indicators. The Lithuanian Health Strategy for 2025 aims to reduce the prevalence of tobacco use by 3% from the 2020 level (*Lithuanian Health Strategy 2014-2025*, 2014). To achieve this goal, it is very important to understand the trends and habits of consumption of different nicotine-containing products.

Innovative tobacco products, such as e-cigarettes and heated tobacco products, have entered the market relatively recently, so it is very important to monitor the trends in consumption of these products, the habits of consumers and to study their impact on health.

The tobacco industry is generally making a lot of effort to try to circumvent tobacco control restrictions, reduce the effectiveness of control measures, and grow a new generation of nicotine-dependent consumers. According to the manufacturers, heated tobacco products are safer because they do not burn, and e-cigarettes are better because they do not contain tobacco. Great attention is paid to creating a more attractive image of these products (World Health Organization, 2021; Vaitkevičiūtė et al., 2022), the variety of flavours and tastes encourages young people to use (McKelvey et al., 2018).

THE RESEARCH METHOD

Given the rapid spread of e-cigarettes among young people and the fact that the long-term consequences of their use may not be less than those of conventional tobacco products, it is important to analyse in detail their use patterns and causes in order to reduce their spread.

The aim of the study was to determine the prevalence, habits and causes of e-cigarette smoking among young people aged 18–35 in the north-eastern Lithuanian town.

Objectives of the study:

1. To find out the smoking habits of electronic cigarettes among young people in the north-eastern Lithuanian town.
2. To determine the reasons behind the prevalence of e-cigarette smoking among young people.

To achieve the objective of the study, a descriptive research design was chosen and primary data were collected by means of a survey method, based on a questionnaire developed by the authors of this study.

351 young people aged between 18 and 35 in the north-eastern Lithuanian town participated in the survey. The study period: April-May 2023.

Organisation of the survey. The questionnaire was posted on the website www.manoapklausa.lt. The survey was sent to students of City Training Centre and Panevėžio kolegija/State Higher Education Institution.

RESULTS OF THE STUDY

Characteristics of the subjects. The survey was completed by 351 young people (aged 18–35 years). 45.6% of respondents had never smoked, 44.4% had smoked (vaped) e-cigarettes and/or smoked heated tobacco products (hereafter HTPs) at least once in the last 12 months, and 10% had smoked at some point in the past but had given up. A quarter of the respondents were male – 23.1% and 74.1% were female, while 2.8% did not want to disclose their gender. The age distribution was as follows: almost half of the respondents were between 18 and 25 years of age, a fifth were between 26 and 30 years of age, and the remaining 34% were between 31 and 35 years. The majority of respondents had below than higher education level, lived in the city, were working or in education.

Use of tobacco and other products. Almost half of the respondents (45.6%) reported not smoking at all, while a tenth said they used to smoke but had quit. Of the remaining 156 smokers, 3.8% smoke both HTP and conventional cigarettes and 17.3% smoke both electronic and conventional cigarettes. Meanwhile smoking only e-cigarettes was reported by 34% and only HTP by 25% of respondents (see Figure 1). 9.6% of respondents answered smoking only conventional cigarettes. It is easy to see that e-cigarettes are the most popular.

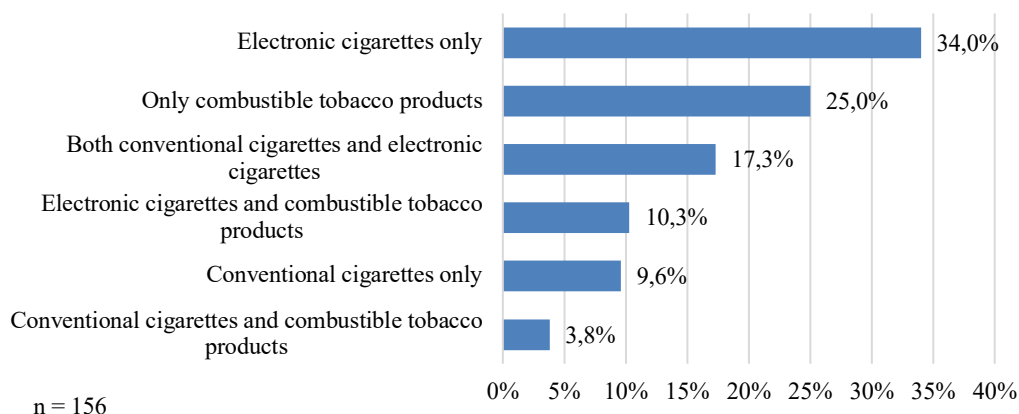


Figure 1. Distribution of respondents by products consumption (%)

Respondents were asked how long they have been smoking for. More than half (54.5%) have been smoking for more than five years and almost 40% have been smoking for more than one year. Almost 6% were those who started

smoking a few months ago (see Figure 2). Two respondents said they smoke irregularly, one smokes very rarely, and one is not addicted, usually smokes when friends get together.

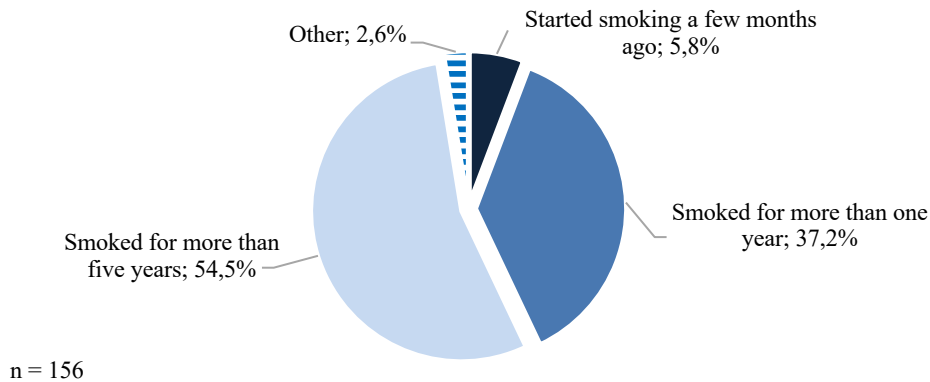


Figure 2. **Distribution of respondents by years of smoking (%)**

Subjects were divided into two groups based on the frequency of use of e-cigarettes and/or HTPs (in the last 12 months): frequent users and infrequent users. Frequent users were those who reported using e-cigarettes and/or HTPs daily or several times a week; infrequent users were those who reported using e-cigarettes and/or HTPs several times a month or less (see Figure 3).

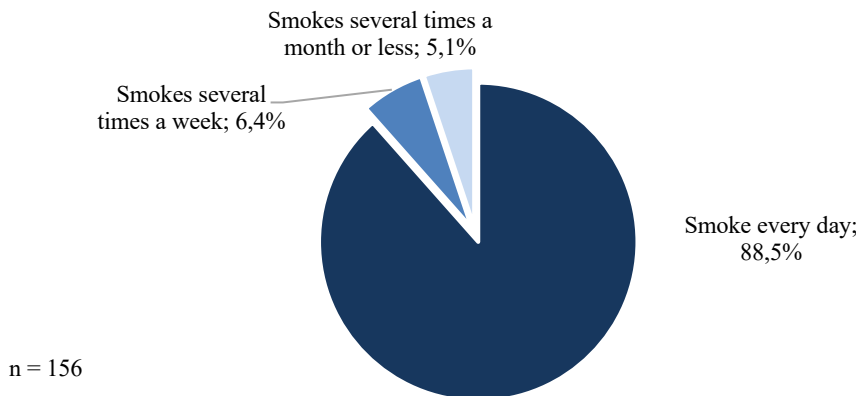


Figure 3. **Distribution of respondents by frequency of smoking (vaping) in the last 12 months (%)**

The survey found that almost 95% of smokers smoke and/or vape regularly, either daily or at least several times a week. Only 5% smoke and/or vape several times a month or less. This latter result suggests that these respondents are not addicted to smoking.

Around a third of daily e-cigarette and/or HTP users smoke between 6 and 10 times a day, 12.3% smoke between 16 and 20 times a day and 13.8% smoke more than 20 times a day (see Figure 4).

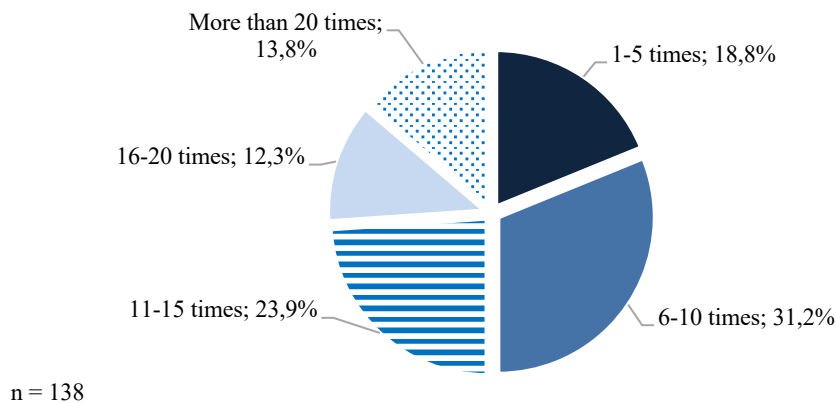


Figure 4. **Distribution of respondents who smoke e-cigarettes and/or HTPs on a daily basis, by frequency of use per day (%)**

A third of e-cigarette and/or HTP users reported that they first tried smoking (vaping) e-cigarettes and/or HTPs between the ages of 18 and 24 years. Notably, 42.3% reported that they had tried e-cigarettes and/or vaping HTPs when they were minors, i.e. under 18 years of age. Around 20% tried smoking/vaping when they were slightly older (see Figure 5).

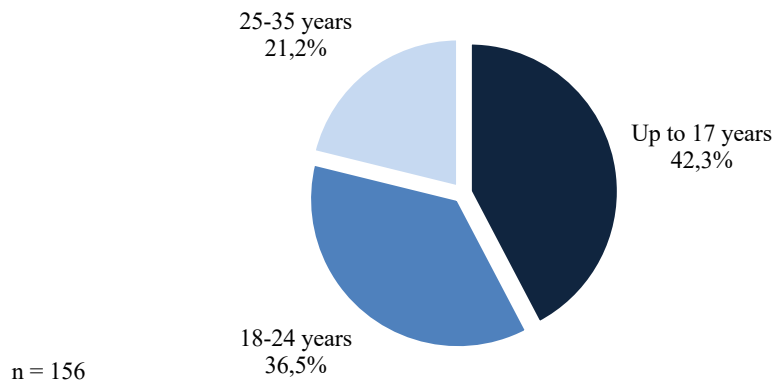


Figure 5. **Age distribution of respondents' age at first attempt to smoke/vapour e-cigarettes and/or HTPs (%)**

Respondents were asked how much they spend on average per month on liquids or heated tobacco products. Around a third of smokers reported spending on average between 11 and 20 euros per month on e-cigarettes and e-liquids. 25.6% spend up to 10 euros and around 19% spend 40 euros or more (see Figure 6).

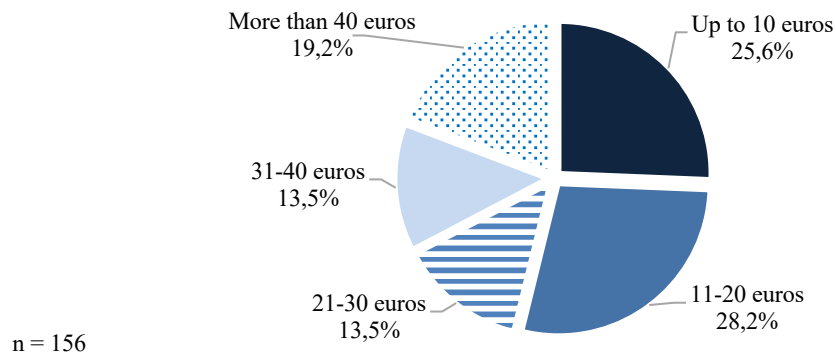


Figure 6. **Distribution of respondents by average monthly spending on e-cigarettes and e-liquids (%)**

Subjects were asked if they had ever tried to quit vaping e-cigarettes. About one fifth of the respondents indicated that yes, they had tried to quit smoking e-cigarettes in the last 12 months. 28.2% said they had tried to quit more than a year ago, and 29.5% said they had not tried to quit smoking e-cigarettes and had no plans to do so. Only one fifth of respondents would like to quit smoking (see Figure 7).

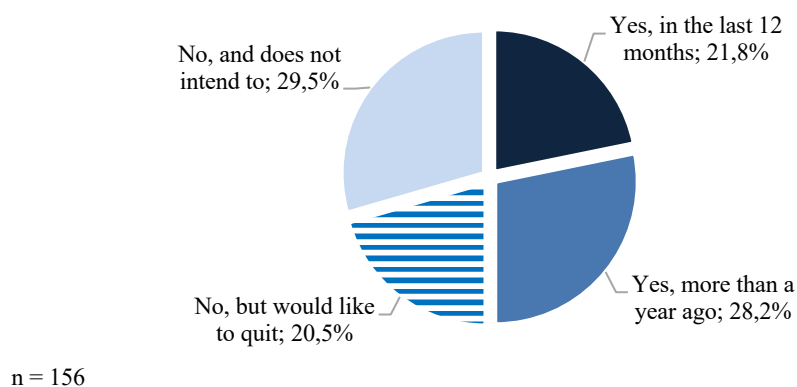


Figure 7. **Distribution of respondents' views on their intention to quit smoking (vaping) e-cigarettes (%)**

Almost half of the respondents, 49.4%, answered that they usually buy e-cigarettes, e-liquids and/or HTPs from regular outlets (e.g. grocery stores, petrol stations, cafes, newsagents, etc.). A significant number of people also reported buying these products in specialised tobacco shops – 45.5%. 4.5% of respondents searched for e-cigarettes, e-liquids or HTPs on the internet or social networks (see Figure 8).

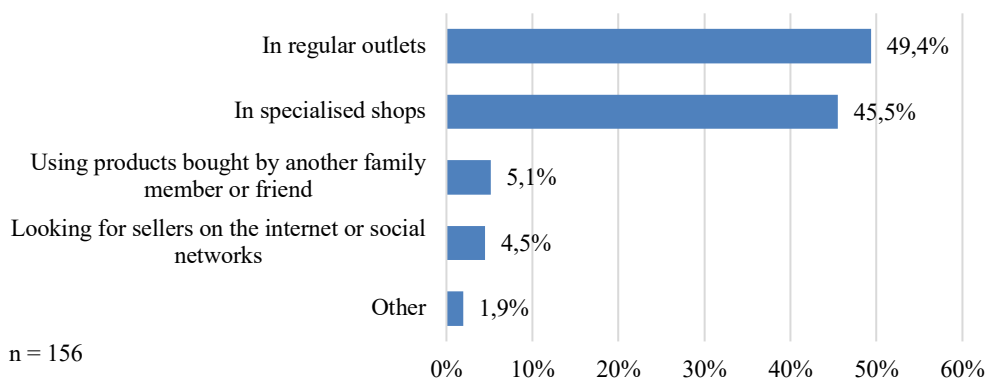


Figure 8. Distribution of respondents according to their reported place of purchase of e-cigarettes, e-liquids and/or HTPs (%)

It should be noted that one respondent indicated that e-cigarettes, e-liquids and/or HTPs are purchased illegally as other possible alternatives, while one respondent buys from an acquaintance who mixes liquids at home.

The main factors influencing the choice to start using e-cigarettes and/or HTPs were the desire to try the novelty (42.3%) and the example of friends, colleagues or others who smoked novel smokeless tobacco products (35.9%), also the availability of a wide range of different flavours and fragrances (28.2%) (see Figure 9).

The desire to stop smoking conventional cigarettes or to reduce the number of conventional cigarettes smoked was cited as a key factor by just over one sixth of respondents – 12.8%. However, almost one fifth of respondents indicated that the fact that e-cigarettes and/or HTPs can be smoked in places where conventional cigarettes are prohibited (e.g. cafes, bars, public transport, airports, residential areas) was a motivating factor for them to quit smoking regular cigarettes. Respondents are also attracted by the appearance of the devices (9.6%) and the price of tobacco and liquids (9%) (see Figure 9). It should be noted that similar surveys carried out at national level also show that one of the main reasons why young people smoke e-cigarettes is flavours.

It is worth noting that other reasons behind starting vaping was that e-cigarettes do not smell as strong as regular cigarettes, that they simply need to quench their nicotine cravings, that smoking is a way to relax, or that they smoke just for the sake of not having anything to do.

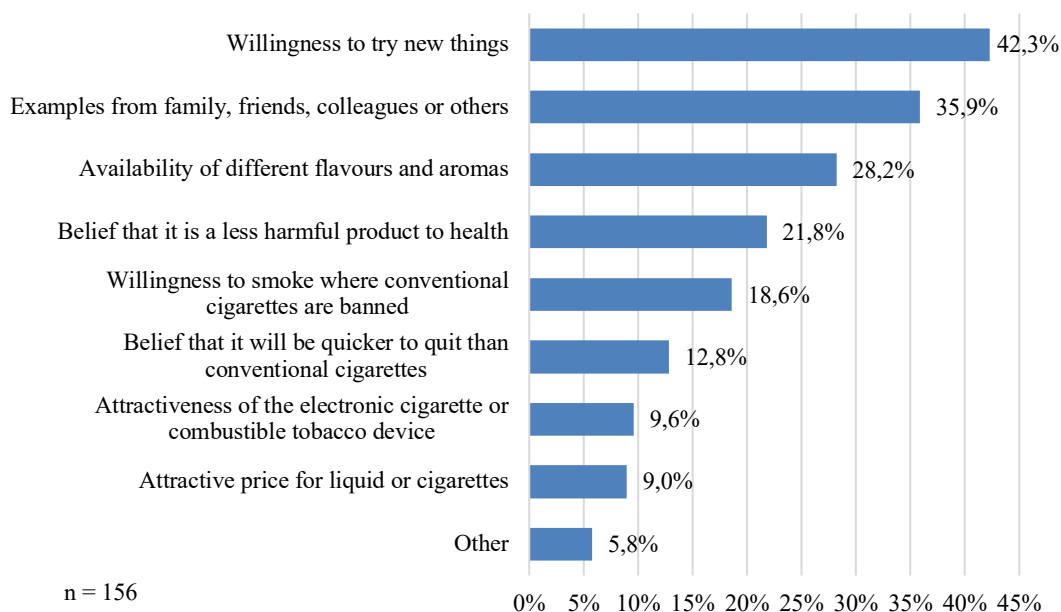


Figure 9. Distribution of respondents' opinions on the reasons for choosing to smoke e-cigarettes and/or HTPs (%)

Prevention of smoking e-cigarettes or heated tobacco. Research shows that e-cigarettes are rich in a variety of heat-irresistant organic particles that break down when heated into various toxic substances such as acetaldehyde,

acrolein and formaldehyde, which are strong respiratory irritants and known carcinogens. There is already evidence that the consumption of these products by young people is linked to an increase in the incidence and exacerbation of asthma, wheezing, chronic obstructive pulmonary disease, and the development of bronchiectasis. There is also no doubt that e-cigarettes have a negative impact on the cardiovascular system (Department of Drugs, Tobacco and Alcohol, 2022).

Respondents were further asked whether they were aware of the health effects of such smoking. The results showed that more than half of the respondents are aware of the health effects but do not pay attention to them. Just over a third of respondents (34.6%) are not concerned about the health effects of vaping. 9% of respondents do not know anything about the health effects of e-cigarettes (see Figure 10). The results of the survey suggest that the preventive measures used against smoking do not reach all young people in the city under study.

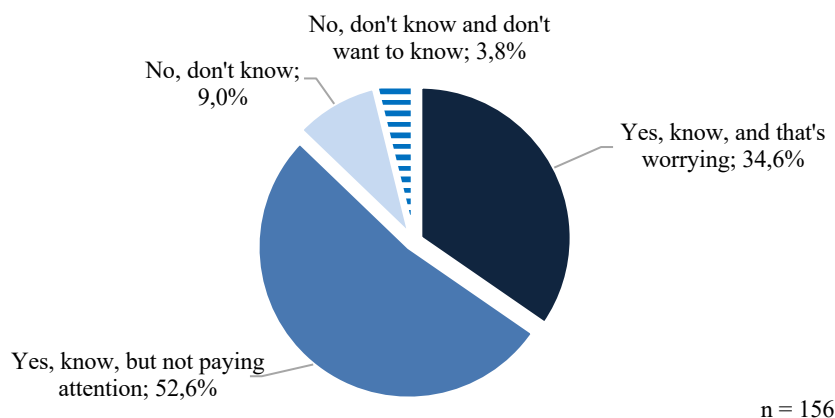


Figure 10. Distribution of respondents' attitudes towards e-cigarettes and/or HTPs in relation to health harms (%)

However, it is also noteworthy that even if they had more information about the health effects of smoking, a tenth of respondents would not quit smoking, while two-thirds (68.6%) of respondents are unsure. (see Figure 11).

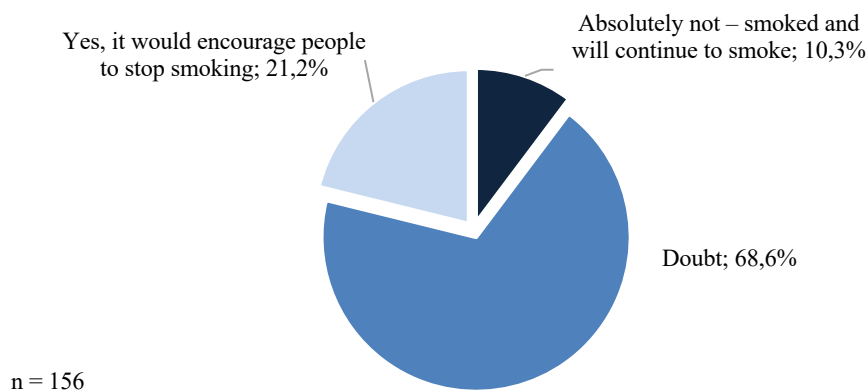


Figure 11. Distribution of respondents' opinions on the impact of information on their intention to quit smoking (%)

There are many prevention programmes offered to the public, but according to the experts, they are rarely consistently implemented. The Ministry of Health is planning a major publicity campaign for prevention, a helpline and a mobile app. The Ministry of Education, Science and Sport is also developing programmes to prevent the use of psychoactive substances. However, as many as two thirds of respondents think that no preventive measures will help unless the smoker is willing to quit. This question was answered by all (351) respondents.

CONCLUSIONS

Of all respondents, 44.4% had smoked (vaped) at least once in the last 12 months and 10% had smoked (vaped) at some point in the past 12 months but had quit. The largest proportion (34%) smoke only e-cigarettes and 25% only heated tobacco products (HTPs). More than half (54.5%) of young smokers in the city of study have smoked (vaped) for more than five years and almost 39% for more than one year. Almost 90% of smokers smoke and/or vape daily. 31% smoke and/or vape 6-10 times a day. Almost 14% of smokers smoke and/or vape more than 20 times a day.

The main reasons for choosing to start using e-cigarettes and/or HTPs were the desire to try new products (43.2%), the example of friends, colleagues or others who smoked innovative heated tobacco products (36%) and the availability of different flavours and aromas (28.2%). The results showed that almost 30% of respondents have not tried to quit smoking/vaping and do not intend to, while 21% have not tried to quit but would like to.

A tenth of respondents would not quit smoking even if there were more information about the health effects of smoking while two thirds (68.6%) are unsure. 21.8% of smokers have not tried to quit but 20.5% would like to. 29.5% of respondents have not tried and do not intend to quit smoking. E-cigarettes and heated tobacco products were mostly smoked in places where conventional cigarettes are banned, such as cafés, bars, public transport, and other public places.

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