

# PREVALENCE OF SMOKING IN CROATIA – HOW TO SOLVE THE PROBLEM?

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Tobacco use is the leading preventable cause of death, which is why a number of measures to reduce its use are carried out in the world. The purpose of this paper is to highlight the indicators related to the use of tobacco products in Croatia, as well as possible solutions within the framework of existing and proposed policies against tobacco. We have used data collected in the EU countries in 2016, according to which the prevalence of smoking in Croatia is among the highest in Europe. In order to reduce the prevalence of smoking and improve the health of its population, Croatia needs to strengthen and adopt additional policies on tobacco control.

**Key words:** smoking, prevalence, tobacco policies, Croatia

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## INTRODUCTION

During the 20<sup>th</sup> century, the consumption of tobacco has grown to an epidemic with far-reaching medical consequences. Along with many other factors, development of the tobacco industry has been the leading cause of that epidemic (1).

The morbidity and mortality caused by the consumption of tobacco are the result of many complex interactions in the human body. Tobacco smoke is known to contain over 4,000 different chemical compounds. Exposure to tobacco smoke in closed spaces is harmful to everyone, smokers and non-smokers alike, and can be the cause of disease of almost every organ of the human body (1).

Smoking is also a risk factor for major non-contagious diseases, heart diseases, stroke, malignant diseases, diabetes and chronic obstructive pulmonary diseases (2). It has been connected to six out of eight leading mortality causes in the world (3). According to the World Health Organization (WHO), the tobacco epidemic of the 20<sup>th</sup> century is responsible for death

of around 100 million people around the world, and if urgent measures are not taken soon, that number might grow to one billion in the 21<sup>st</sup> century (4). It is assumed that these numbers are even higher, given that only certain diseases were considered, and the research shows ever more diseases to be connected to smoking (1). Smoking also affects the economy; the financial losses associated with medical consequences of smoking are enormous. It is estimated that the European Union (EU) spends around 25 billion € on medical treatments of the diseases caused by smoking (5).

Given that smoking is the highest avoidable health risk in Europe, and in the developed world in general, causing more problems than alcohol, drugs, high blood pressure, obesity or high cholesterol levels, the governments' efforts around the world to decrease the prevalence of smoking are intensive (6). During the last few decades, the programs in certain countries have shown significant results. During the 2000-2010 period, the prevalence of smoking among adults (15 years of age and above) was decreased by 37.6% in Iceland and by 40.6% in Norway (7). In addition, some

countries have set a high goal to eliminate or reduce the prevalence of smoking almost to zero in a very short period of time. New Zealand aims to eliminate the usage of tobacco completely by the year 2025 (8), whereas Finland aims to achieve that goal by the year 2040 (9).

While the prevalence of smoking is decreasing in many developed countries such as Australia, New Zealand, United Kingdom, Canada and USA, in some countries such as developing countries, countries of Southern, Central and Eastern Europe, including Croatia, the prevalence is still growing, or does not show any changes (2).

Therefore, the aim of this study was to highlight the indicators related to the use of tobacco products in Croatia, as well as the possible solutions within the framework of the existing and proposed anti-tobacco policies.

## RECENT EVIDENCE ON SMOKING TRENDS IN CROATIA

To show the current pattern of tobacco use in Croatia, this study used the selected data from a survey conducted in 2016 in the EU countries, in which Croatia participated as a member state for the second time (5). The survey was carried out by the TNS Opinion & Social network. A total of 27,901 respondents from different social and demographic groups were interviewed face-to-face at home in their mother tongue.

The methodology used was that of Eurobarometer and survey is described in the Special Eurobarometer 458 report (5).

## Prevalence of smoking in Croatia

The prevalence of smoking shows the amount of smokers in a certain country, and helps shape the policies against smoking. According to the research conducted in the EU in 2016, 35% of the adults in Croatia are smokers, which is the third highest prevalence of smoking in the EU, right behind 37% in Greece and 36% in Bulgaria and France (Table 1). In addition, the prevalence of smoking in Croatia is higher among men than women (38% vs. 32%), while the EU average is 30% vs. 22% (5).

The amount of people that have never smoked is 49% in Croatia, less than the average in the EU (Table 1), while the amount of people that have quit smoking is 16%, amongst lowest in the EU, right behind Bulgaria (13%), Hungary, Italy, Portugal and Romania (14%) (Table 1).

In Croatia just as in almost all EU member countries, apart from Sweden, more than 9 out of 10 smokers use tobacco products on everyday basis, usually packed cigarettes (above 79%) (5).

Croatians smoke a mean of 17.9 cigarettes a day, which is a bit less than in Austria (18.4) and Cyprus (18.9), the countries with the highest smoker ratio in the EU (Table 1).

Table 1.

*Prevalence of smoking in the European Union and number of cigarettes smoked per day. (%; mean + evolution compared with EB82.4 2014.). Source: European Commission. Attitudes of Europeans towards Tobacco and Electronic Cigarettes: special Eurobarometer 458. Brussels: EC, 2017. doi: 10.2875/804491*

Country	Smoking prevalence		Never smoked		Ex-smokers		Cigarettes per day*	
	%	2017 - 2014	%	2017-2014	%	2017 - 2014	Mean	2017-2014
Greece	37	↓1	44	=	19	↑1	17.8	↓1.8
Bulgaria	36	↑1	51	↑2	13	↓3	15.9	↑0.1
France	36	↑4	42	↓4	22	=	12.6	↓0.6
<b>Croatia</b>	<b>35</b>	<b>↑2</b>	<b>49</b>	<b>↓2</b>	<b>16</b>	<b>=</b>	<b>17.9</b>	<b>↑0.8</b>
Latvia	32	↑2	45	↓4	23	↑2	11.5	↓1.3
Poland	30	↑2	52	↓4	18	↑3	15.9	↑0.2
Czech Republic	29	↑4	52	↓5	19	↑1	15.4	↑0.6
Lithuania	29	↑3	53	↓3	18	=	12.2	↓0.4
Republic of Cyprus	28	↓3	55	↑1	17	↑2	18.9	↓0.6
Austria	28	↑2	53	↓4	19	↑2	18.4	↓1.7
Romania	28	↑1	58	↓2	14	↑1	15.7	↑1.2
Slovenia	28	↓2	53	↑1	19	↑1	15.7	↓1.6
Spain	28	↓1	50	↓2	22	↑3	11.7	↓2.2
Hungary	27	↓3	59	↑1	14	↑3	16.3	↓0.2

Table 1. - continued

Portugal	26	↑1	60	↓3	14	↑2	13.2	↓1.9
Slovakia	26	↑5	57	↓6	17	↑1	15.9	↑2.8
Germany	25	↓2	52	↑2	21	↓1	15.2	↓0.4
Malta	24	↑4	57	↓4	19	=	17.0	↑1.4
Italy	24	↑3	62	↓1	14	↓2	13.6	↑0.4
Estonia	23	↑1	53	↓3	24	↑3	13.2	↑1.3
Luxembourg	21	=	57	=	22	=	14.8	↑1.6
Finland	20	↑1	51	↓6	29	↑5	12.7	↓1.2
Belgium	19	↓6	57	↑1	24	↑5	13.8	↓0.8
Denmark	19	↓4	48	↑1	33	↑3	13.7	↓0.1
Ireland	19	↓2	63	↑4	18	↓1	13.8	↓0.7
The Netherlands	19	↓4	49	↑3	32	↑1	12.6	↑0.9
United Kingdom	17	↓5	60	↑1	22	↑3	12.4	↓2.3
Sweden	7	↓4	52	↓1	41	↑6	10.4	↓1.3
<b>EU28</b>	<b>26</b>	<b>=</b>	<b>53</b>	<b>↓1</b>	<b>20</b>	<b>=</b>	<b>14.1</b>	<b>↓0.6</b>

\*Base respondents who smoke cigarettes daily, N=6,741

### Exposure to tobacco smoke in public places

More than half (77%) subjects in Croatia said that they had been exposed to tobacco smoke when visiting bars (Table 2). This is significantly higher than the EU average (25%) (Table 2). In contrast, only 2% of the subjects in Sweden, 5% in the UK, and 6% in Slovenia and Ireland said so (Table 2).

Table 2.

*Exposure to tobacco smoke in public places, a drinking establishment such as a bar (% + evolution compared with EB82.4 2014.). Source: European Commission. Attitudes of Europeans towards Tobacco and Electronic Cigarettes: special Eurobarometer 458. Brussels: EC, 2017. doi: 10.2875/804491*

	A drinking establishment such as a bar	2017-2014
Greece	87%	↑4
<b>Croatia</b>	<b>77%</b>	<b>↓1</b>
Czech Republic	73%	↓10
Republic of Cyprus	65%	↓9
Austria	57%	↓17
Slovakia	50%	↓7
Bulgaria	42%	↑5
Malta	39%	↓10
Denmark	39%	↓4
Portugal	38%	↓5
Germany	22%	↓7
Latvia	22%	↓6
The Netherlands	20%	↓11
Belgium	18%	↓5
France	16%	↓2
Italy	15%	↑2

Poland	14%	↓7
Spain	12%	↓5
Romania	11%	↓69
Luxembourg	11%	↑3
Estonia	11%	↓5
Lithuania	11%	↓7
Finland	7%	↓1
Hungary	7%	↓2
Ireland	6%	↑1
Slovenia	6%	=
United Kingdom	5%	↓1
Sweden	2%	=
<b>EU28</b>	<b>25%</b>	<b>↓5</b>

### Starting/stopping smoking tobacco

Croats begin smoking regularly at the mean age of 17.9 years, and every other smoker tried to quit smoking at some point in their life (5). In doing so, the majority (85%) of them tried to quit smoking (and some managed to quit) without help, 3% used nicotine substitutes (patches, etc.), the same number had support from their doctors or other health professionals, and 5% used electronic (e)-cigarettes or similar products (5).

### Awareness and attitudes towards the use of e-cigarettes

In Croatia, 11% of respondents were using e-cigarettes. None is currently using them, 1% used them briefly, while 10% tried but never used them regularly (5). In general, in this research, the most common reason for switching to e-cigarettes was a desire to reduce or stop smoking (61%). About one-third (31%) say that they

started using e-cigarettes because they considered them less harmful than tobacco. An additional factor for the usage of e-cigarettes was their use in the places where 'regular' smoking was not allowed (15%) (5). Older respondents who use e-cigarettes reported that they most commonly used those containing nicotine (5).

In all EU member states, smokers and former smokers who have tried or used e-cigarettes usually say that their tobacco smoking is not reduced as a result of using e-cigarettes (5). Thus, in Croatia, more than half (76%) of the subjects have not reduced their smoking by using e-cigarettes; on the contrary, 10% of them increased their consumption of tobacco (5). More than half of all subjects in the EU believe that e-cigarettes are harmful (55%), and Croats seem to have the same opinion (51%) (5).

### HOW TO SOLVE THE PROBLEM?

The prevalence of smoking in Croatia is among the highest in Europe (5), and according to the WHO estimate, if these trends continue, the situation will not change significantly in the next ten years (11). That is to say, if Croatia does not adopt the global objective of reducing tobacco consumption by 30% by 2025, this goal will not be reached despite the measures taken so far (11).

To put it simply, reducing the prevalence of smoking could be achieved by prohibiting the sale of tobacco, which is not surprising given the fact that the harmful effects of tobacco on human health have been evidenced for more than half a century (12). The sale of tobacco is currently only entirely banned in Bhutan, although the desired success in the absolute elimination of tobacco use has not been achieved, which suggests that regulation is still a more preferable measure than prohibition, a measure which proved to be a bad example already in the 1930s (13,14). In addition to the fact that the tobacco industry is currently one of the strongest and most influential industries in the world, including Croatia, which has a long tradition in the production of tobacco products and a strong and promising national industry, this legal possibility, however, should be replaced by other, more appropriate measures. For example, California state legislators and staff expressed greater interest in annual reduction in licenses of tobacco retailers *versus* total sale ban. Similarly, Finland has decided to increase the fee for retail license, as specified in the Finland 2016 Tobacco Act. Regulation of the retail environment is a likely indicator of achieving an endgame goal (15).

Therefore, other legal options should be considered, particularly those regulating smokeless environment.

One of the measures would certainly be ban on smoking in public places, which could, among other things, have a significant impact on denormalizing smoking in the community. The ban on smoking affects the behavior of the general population by reducing opportunities and increasing social non-acceptance of smoking. It also reduces the exposure of children to negative influences of the social pattern of behavior, which was the reason for the ban on smoking in parks and other public places in New York a few years ago (16). In 2008, the law on banning smoking from the public areas was adopted in Croatia (17). However, under the pressure from the tobacco lobby, the law was soon amended. Smoking is permitted in bars in separate zones, while restaurants must have a separate area for smokers where food and drink are not served. Catering facilities smaller than 50 m<sup>2</sup> can be determined as a smoking area in its entirety (18). In this research, the majority of Croats (77%) said they had been exposed to tobacco smoke during their visits to bars, and the amount of exposure to smoke in bars is considered to be an indicator of success in implementing the anti-smoke policies (16). When this kind of legislation was proposed in Ireland, the tobacco industry also strongly argued that smoking was an integral part of the pub culture of the country and that the ban would be impossible to achieve and cause an irreparable economic damage to the owners of pubs (19). Yet, now the country has been smoke-free for several years, with strong public support and no negative impact on the business (19,20). Ireland provides strong evidence for the positive health effects of no-smoke environment, and researches in other countries also confirm the beneficial health effects of these policies. Thus, after the introduction of measures to reduce exposure to secondhand smoke, the number of admissions for acute coronary syndrome has also been reduced (21). In order to achieve the implementation of these measures, which requires appropriate amendments to the existing legislation, Croatia should follow the WHO recommendations, the step by step process, as the most effective method to achieve a smoke-free environment (22).

Most tobacco users start smoking at an early age, as confirmed by the research presented in the EU countries. Smoking habits are usually created and adopted at a teen age, which indicates that preventive programs directed towards young people should have a key role in reducing the prevalence of smoking (1). In addition, children are particularly vulnerable to the negative effects of either active or passive smoking, become quickly addicted to tobacco, and the earlier they start smoking the harder it is to quit later in life. Therefore, the initiative of Singaporean scientists to ban the sale of tobacco to those born in 2000 and later seems reasonable (23). Although some authors consider

this proposal unconvincing (24), it is still less likely for people who have not started smoking at an earlier age to start smoking at an older age, the age when according to the said proposal they will be no longer forbidden to purchase tobacco products. The potential effective measures to reduce the initiation of smoking among young people could include reducing the number of stores for sale of tobacco. By decreasing the number of places where tobacco is sold, restricting the access to young people to these places, not allowing the sale of tobacco products in stores near schools, the perception of tobacco as an abnormal product shall be reinforced, while tobacco products shall be less available (25).

There are many factors that influence the choice of a particular brand of cigarettes, and among the most common are its price and taste. It is believed that an increase of taxes on tobacco products is the most effective way of reducing the prevalence of smoking (26,27). Extensive researches have shown that higher taxes on tobacco products can help promote cessation among current users, deter initiation among potential users, and reduce tobacco use among those who remain users (28). Increasing the price of tobacco tends to decrease the prevalence of smoking among young people and adults, to which middle- and low-income countries are particularly sensitive (29). A survey conducted in 2010 in 20 lower/middle-income countries claimed that an increase in price by 10% reduced consumption among young people by 18%, which is a three times higher rate than among adults (30). Studies have also shown that changes in the relative prices of tobacco products can cause some users of tobacco to switch to the use of less expensive products (28). However, due to the belief that all tobacco products are seriously harmful to health, all products should be taxed similarly. For years, almost all EU countries have raised taxes on tobacco products, including Croatia, where this measure is one of the most important. However, the taxes are different, as well as the costs of cigarette pack in certain EU countries, and other countries. According to the 2016 report, tobacco prices in Croatia are among the lowest in EU countries (cigarette weighted average retail price was 3 € in 2016). Cigarettes are most expensive in Ireland (9.42 €) and cheapest in Bulgaria (2.42 €) (31). Cigarette prices are even lower in non-EU countries (e.g., Serbia, Bosnia and Herzegovina). All this creates the preconditions for purchasing tobacco products in the 'neighborhood' and illegal trading, which indicates that the prices of tobacco products in the region should not vary (6).

This survey also showed that around half of regular smokers smoke cigarettes with special characteristics. Interestingly, the observation of the tobacco industry in the survey on the attitudes of its customers shows

that long-time users do not want to use cigarettes with low nicotine levels (32). Therefore, Peters considers that with the implementation of other necessary measures, "only the elimination of a tolerable, addictive cigarette will truly address the harms of smoking and the most vulnerable groups and is the cheapest, effective action as the full costs are transferred to the tobacco manufacturer" (24).

Additionally, there is a lot of evidence showing that cigarette packaging, including box format (size, shape, opening), color, logo and descriptors affect the perception of the health risks of smoking, the claim and attitudes towards smoking (33,34). Due to the increasing restrictions on tobacco advertising and marketing, in many countries, and in Croatia as well, cigarette packaging has become a key promotional medium of the tobacco industry (33,34). Therefore, today, the plain packaging is considered to be part of the entire public health strategy that aims to eliminate the morbidity and mortality caused by the use of tobacco (35,36), primarily by reducing the number of new, young smokers, and by promoting quitting amongst current smokers. Recently, after the implementation of measures of plain packaging of cigarettes, the Ministry of Health in Australia presented information on reducing the use of cigarettes. Cigarette sales declined in 2013 by 3% compared to 2012, and the amount of everyday smokers (14 years and older) decreased from 15.1% in 2010 to 12.8% in 2013 (37). Although these changes are not directly attributable just to plain packaging, they, however, suggest that the plain packaging contributes to the reduction of smoking at the population level (33). Warnings about the harmful effects of tobacco are placed on cigarette packs in Croatia, and according to the revised Tobacco Products Directive, those warnings feature pictorial health warnings as well (38).

The majority of smokers want to quit (85% plans to, and 50% actually tries to quit every year), but only the minority manages to quit (4%-6%) (39), which has also been confirmed by the study according to which every other smoker in Croatia has tried to quit. The interventions that have helped smokers quit smoking are considered to be among the most efficient, cost-effective medicine procedures. Roughly, after 35 years of age, every year of smoking reduces life expectancy by three months, and smoking cessation makes up most of this loss (40). In order to restrict access to tobacco products and encourage smoking cessation, Chapman proposed a smart card license for smokers, whose key feature is daily limit (41). With the proposal of such measures, the costs of treatment and pharmacological therapy should be covered for those people who wish to stop smoking. These procedures already exist in a number of EU countries (42), but unfortunately, not in

Croatia. For that reason, deficiencies in smoking cessation services were regarded by many as the greatest challenge to Tobacco-Free Finland 2030 (15).

E-cigarettes are a product that appeared a few years ago and attitudes towards them are contradictory. While some see e-cigarettes as a potential tool to quit smoking (43), to others they represent a health hazard by encouraging adolescents to start smoking conventional tobacco products (44). Some, however, see e-cigarettes as a means of the tobacco industry to create new marketing opportunities (45). Respondents in Croatia said that their use of e-cigarettes helped neither quit nor reduce tobacco use, and they resorted to them in places where tobacco smoking was not allowed, which is consistent with the observation that with the use of e-cigarettes, smokers actually become dual smokers, smokers who smoke both standard tobacco and e-cigarettes (43). Furthermore, in accordance with the expected social non-acceptance of tobacco use and consequent marginalization of smoking, it is reasonable to suspect that the e-cigarettes could replace the classic tobacco products, and that there is a need for appropriate regulation and measures to prevent their use by those who have never smoked (especially children), to protect non-users, to maximize their effectiveness as an aid to quit smoking and discourage their dual use for a longer period (46).

## CONCLUSION

In order to decrease the prevalence of smoking and to improve the health of its citizens, Croatia should strengthen the current tobacco control policy, and adopt certain other policies. The successful experiences of other countries that have managed to decrease the prevalence of smoking have shown that only the integrated approach can be completely effective. Comprehensive approach should include effective policies for tobacco control such as raise taxes on tobacco products, protect people from tobacco smoke, warn about the dangers of tobacco, enforce bans on tobacco advertising, promotion and sponsorship, and offer help to quit tobacco use, which is a key element of the WHO Framework Convention on Tobacco Control.

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## S A Ž E T A K

### UČESTALOST PUŠENJA U HRVATSKOJ – KAKO RIJEŠITI PROBLEM?

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Uživanje duhana vodeći je preventabilni uzrok smrtnosti zbog čega se u svijetu provode brojne mjere kako bi se smanjila njegova uporaba. Stoga je cilj ovoga rada prikazati pokazatelje vezane za korištenje duhanskih proizvoda u Hrvatskoj kao i moguća rješenja u okviru postojećih i predloženih protuduhanskih politika. U prikazu su korišteni odabrani podatci ankete provedene u zemljama Europske unije 2016. godine prema kojoj je učestalost pušenja u Hrvatskoj među najvišima u Europi. Kako bi smanjila učestalost pušenja i unaprijedila zdravlje svoga stanovništva Hrvatska treba ojačati postojeće i usvojiti dodatne politike o kontroli duhana.

*Ključne riječi:* pušenje, učestalost, protuduhanske politike, Hrvatska