

# The Gap between the Knowledge and Current Practices – A Case of Tobacco Control Programs in Croatia

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## ABSTRACT

*Despite the availability of numerous evidence-based smoking prevention and cessation programs, many countries are still not implementing these research-proven programs. The primary aim of this paper is to summarize the extent to which evidence-based smoking control programs have been implemented in Croatia over the last two decades. Data from the systematic reviews of the Cochrane Tobacco Addiction Group, which are readily available worldwide, were used as criteria to evaluate whether effective, evidence-based programs have been implemented in Croatia. According to our findings, the most effective behavioral and pharmacological smoking cessation interventions have thus far been underutilized in Croatia. In addition, some interventions that have been continuously implemented in Croatia – such as using self-help materials, school-based programs and the celebration of World No Tobacco Day – have only small, short-term beneficial effects according to the Cochrane reviews. However, Croatia is a party to the World Health Organization Framework Convention on Tobacco Control and therefore has effective national legislation on tobacco control. Croatia should develop and implement programs that integrate the existing high-quality empirical evidence on the effectiveness of various behavioral, pharmacological, and social interventions for smoking prevention and cessation. This programming should become a part of a continuous national strategy, and should be implemented throughout all of Croatia.*

**Key words:** *cessation; prevention; tobacco control; treatment and intervention*

## Introduction

Increasing global attention is focusing on the significance of the systematic translation and/or utilization of evidence-based research findings into measurable improvements in health care policy, quality, cost, use, access and outcomes. With regard to tobacco control programming, effective strategies that are based on research-tested studies are numerous, cost-effective and readily available for use<sup>1</sup>; however, many countries are still not implementing these empirically-proven programs.

It has been estimated that across the world the increase in the burden of tobacco-related disease will be most pronounced in the former European socialist economies due to the transitional changes (occurring over the last 22 years) that are likely to lead to a higher prevalence of tobacco consumption due to increased market competition

and targeted advertising that may eventually yield lowered prices to the consumer. Furthermore, it has been estimated that 25% to 80% of the cigarette consumption in southeastern Europe (and approximately 25% in Croatia) is comprised of smuggled cigarettes purchased more cheaply on the black market<sup>2</sup>. Estimates suggest that by 2020 approximately one quarter of all deaths in this region will be attributable to tobacco<sup>3</sup>. Currently, Croatia is still among the European countries with the highest male lung cancer incidence and mortality<sup>4</sup>. Cardiovascular disease is the leading cause of death and accounts for more than half of the overall mortality<sup>5</sup>. Lung cancer and cardiovascular diseases, are both closely linked to smoking. Thus, in Croatia, tobacco use is recognized as a public health problem that requires effective prevention and cessation programming. Still, as in many other countries, and although the amount of active smokers has decreased over the last de-

cares, a sizeable percentage of the Croatian population continues to smoke<sup>6,7</sup>. The existing empirical literature provides evidence that various forms of smoking prevention and cessation programming are effective in increasing the number of successful attempts to quit<sup>8</sup>. Accordingly, the primary aim of this paper is to summarize the extent to which evidence-based smoking control programs have been implemented in Croatia over the last two decades.

## Methods

Smoking cessation and smoking prevention programs have never been appropriately evaluated in Croatia, except for the program „Say YES to No-Smoking” which is described in details below. Therefore, data from the systematic reviews of the Cochrane Tobacco Addiction Group – which are readily available worldwide (on the internet) and considered by international health experts to be the leading resource for systematic reviews in health care – were used as criteria to evaluate the extent to which effective, evidence-based smoking control programs have been implemented in Croatia. To date, the Cochrane Tobacco Addiction Group has developed and published up to 70 reviews and further protocols in progress. Cochrane Tobacco Addiction Group also manages some non-tobacco related reviews (6 reviews). Their reviews are grouped into four groups: (1) Interventions at the population level; (2) Interventions to help smokers and other tobacco users to quit; (3) Interventions to prevent tobacco use; and (4) Interventions to reduce harm in people who use tobacco. Their reviews collect data from relevant randomized controlled trials that evaluate the effectiveness of different intervention methods to reduce and prevent tobacco use. The primary objective for their systematic reviews is to summarize current knowledge on a particular topic, and help clinicians, policymakers and individuals or patients to better understand and facilitate choices that they face in health care<sup>9</sup>. Details about the methods and results of each of these systematic reviews are available in the Cochrane library and can be accessed at <http://tobacco.cochrane.org/our-reviews>.

For the purpose of this paper, two authors (MC and LTC) independently selected and abstracted the Croatian interventions. Our analysis included national interventions (specific and exclusive to tobacco) that were implemented in Croatia over the last 22 years (including those that are ongoing). Sources of information about the interventions included: (1) Reports on the implementation of international tobacco control programs; (2) Relevant Croatian laws and bylaws published in the Official Gazette of the Republic of Croatia; (3) Relevant archives and the publications of the Croatian Ministry of Health, Croatian National Institute of Public Health and Andrija Štampar School of Public Health; and (4) Papers published in the Pubmed database and in Croatian health professional journals – using the keywords of »Croatia« with »tobacco« and/or »smoking« and/or »smoking cessation«. Our search yielded various tobacco control programs (including prevention and cessation interventions, as well as governmen-

tal policies). For the most part, these interventions were either national public health interventions, either part of international programs aimed at combating smoking in Croatia or part of the Croatian government policy on Tobacco use. The Ministry of Health, Croatian National Institute of Public Health, and Andrija Štampar School of Public Health are institutions that are responsible for organization and implementation of national public health interventions.

## Results

Interventions that were implemented in Croatia from 1990-2012 are described and analysed below:

### *»Quit and Win« contests for smoking cessation*

The empirical literature indicates that smoking cessation can be achieved with or without assistance from healthcare professionals or the use of medications. However, smokers have a higher rate of success when they seek help with quitting<sup>10</sup>. One of the first cessation programs that Croatia implemented was an international cessation program called the »Quit and Win« contests for smoking cessation. Quit and Win contests were developed in the 1980s by the Minnesota Heart Health Program in the United States, and have been widely used since then as a population-based smoking cessation intervention at the local, national and international levels. In 1994, the first international contest was conducted under the auspices of World Health Organization (WHO) and has been run every two years and has grown exponentially. Croatia joined this activity two years later<sup>11,12</sup>. According to the results of a Cochrane review on »Quit and Win contests for smoking cessation«, this intervention appears to deliver quit rates above baseline community rates at local and regional level, although the population impact of the contests seems to be relatively low<sup>12</sup>.

### *»Say YES to No-Smoking« program*

Until 2002, Croatia had no experience with implementation of intersectorial smoking cessation programs at the national level until its adoption of the Australian »Say YES to No-Smoking« antismoking program and its various components<sup>13</sup>. The project was initiated and coordinated by the Croatian Ministry of Health, the Australian Embassy in Zagreb, »Andrija Štampar« School of Public Health and Croatian National Television<sup>13-15</sup>. This national campaign was implemented by the National Centre for Prevention of Addictions, which was established at the »Andrija Štampar« School of Public Health and was in function from 2002 until 2004. The Centre was in charge of expanding initial television advertisement activity and further developing the program to include several additional prevention and cessation components: development of a free telephone help line, interactive Internet sites for smoking cessation, health education campaigns, training

of general practitioners and medical school physicians, group therapy for smokers previously included in a program for smoking cessation, community-based campaigns, self-help materials for smoking cessation, mass media leaflets, books, radio and television programs, and various public events. Furthermore, as part of the synergistically growing campaign, the first national »Smoke Out Day« was organized in 2003 under the slogan »Croatia Breathes«<sup>13,15</sup>. Based on the results of Cochrane systematic reviews for evaluating effectiveness of interventions for smoking cessation, the »Say YES to No-Smoking« program had much potential to produce positive results<sup>16-19</sup>. Unfortunately, the implementation of this program ended in March 2004 because of lack of financial support.

### ***The Dental Team Against Smoking – »Training of Trainers«***

A smaller, regional cessation program was implemented in the dental setting. The Dental Team Against Smoking – »Training of Trainers« was established in Croatia in 2007 and involved dentists in combating smoking. The main objective of this project was the training and motivation of dental teams to carry out systematic actions in prevention of smoking, smoking cessation and health promotion. The project included four regional Croatian centres (Split, Slavonski Brod, Rijeka and Zagreb). The evidence from the Cochrane systematic review: »Interventions for tobacco cessation in the dental setting« suggests that behavioural interventions for tobacco use conducted by oral health professionals incorporating an oral examination component in the dental office and community setting may increase tobacco abstinence rates among smokeless tobacco users<sup>20</sup>.

### ***Government policy on tobacco use***

Based on the Croatian Act on Tobacco Control's the Minister of Health appoints the Commission to combat smoking. The Commission's main tasks includes: monitoring the prevalence of smoking, proposing measures to reduce the harmful effects of tobacco on the health of the population, proposing programs to quit smoking, and preparation of educational materials and self-help materials for smoking cessation. The Commission collaborates with Ministry of Science in preparation of educational programs in kindergartens and schools with the aim to prevent young people from initiating smoking. One of the main problems is the lack of continuous evaluation of the effectiveness of the Commission's work and performance.

Furthermore, restrictive legislation on tobacco control is an important intervention to reduce exposure to second hand smoking, smoking prevalence and to decrease morbidity and mortality associated with tobacco smoking<sup>21-23</sup>. The first time Croatia passed a restrictive law on tobacco use was in 1999, with subsequent amendments in 2008 and 2009<sup>24-26</sup>. A Cochrane systematic review on the impact of smoking bans in reducing smoking and exposure to passive smoking included 50 relevant studies<sup>21</sup>. The authors

of this review concluded that the statutory ban on smoking in public places reduced exposure to second-hand smoke, but it did not make changes when it comes to exposure to second-hand smoke in cars or in smokers' residences. However, there is evidence that such measures lead to the reduction in the prevalence of smoking, or at least a reduction in the number of cigarettes smoked per day<sup>21</sup>. As well, improvements of other health indicators (such as respiratory and sensory symptomatology, cardiovascular events, including hospital admission rates for acute coronary syndrome or myocardial infarction) have been found<sup>21</sup>.

In addition to the restrictive legislation passed in 1999, the Croatian Act on Tobacco Control was implemented to determine the measures to reduce and restrict the use of tobacco products, harmful ingredients of cigarettes and mandatory labels on tobacco product packages, preventive measures against smoking, and supervision over the implementation of the Act. A subsequent, and more restrictive Act (Official Gazette no. 125/08 and 55/09) came into force in October 2008<sup>25</sup>. With this Act, smoking was completely banned in all enclosed public spaces, with the exception of psychiatric institutions. However, shortly afterwards, in September 2009, the Croatian Parliament adopted the Law on Amendments of the Act restricting the use of tobacco products in restaurants and other public indoors and allowing cafes to once again have a room designated for smoking, but under special conditions<sup>26</sup>.

### ***World Health Organization Framework Convention on Tobacco Control (WHO FCTC)***

Furthermore, Croatia is a Party to the WHO FCTC. WHO FCTC is the first global treaty negotiated under the auspices of the WHO, developed in response to the globalization of the epidemic of tobacco use, and an agreement based on evidence that confirms the right of everyone to the highest standards of health. It represents the first legal instrument to reduce morbidity and mortality caused by smoking<sup>27</sup>. The Convention provides new legal dimensions for international health cooperation and health promotion because its articles and bylaws allow the regulation of all key components of tobacco control, not only at national level but also at the level of all parties or by second hand smoke<sup>27</sup>. Croatia was among the first countries to sign the convention (in June 2004). However, five years had passed since the signing of the agreement until its ratification, despite the fact that Croatia was the regional leader of international project »Public Health Capacity Building for Strengthening Tobacco Control in South-Eastern Europe« (May 2005-October 2007). The main objective of this project was to develop a public health infrastructure for tobacco control and ratification of the WHO FCTC in countries involved in the project (Albania, Bosnia and Herzegovina, Bulgaria, Montenegro, Macedonia, Croatia, Serbia, Romania and Moldova)<sup>28</sup>. According to the results of Cochrane reviews analyzing effectiveness of tools for smoking prevention and smoking cessation, the WHO FCTC is a very effective package of interventions<sup>21,22,29,30</sup>.

### ***The World No Tobacco Day (WNTD)***

Each year the Commission appointed by Ministry of health is in charge for the celebration of The World No Tobacco Day (WNTD). The WNTD has been celebrated in Croatia since 1990. On that day, thematic conferences and various training programs and public events are organized in Zagreb and in all other parts of Croatia. The organization of these activities involved the Ministry of Science, Education and Sport, Ministry of Health and Social Welfare, National Institute of Public Health and County Institutes of Public Health. According to the results of Cochrane systematic reviews, this type of education and intervention is essential to change attitudes, inform the population and improve the knowledge; however, their overall effectiveness in smoking cessation is low<sup>29,30</sup>.

### ***Self-help materials***

The Commission also prepares relevant self-help, educational and promotional materials, brochures, posters, instructional articles, templates for creative workshops for children and young people, etc. The results of a Cochrane systematic review, which included 68 studies on the effectiveness of self-help materials, indicate that standard self-help materials may increase quit rates compared to no intervention, but the effect is likely to be small<sup>31</sup>. However, tailoring materials to provide individualized support is more effective<sup>31</sup>.

### ***School-based programs***

Moreover, school-based programs for smoking prevention have been developed in Croatia and are part of the national strategic plan. These programs are organized continuously and they start with implementation in kindergarten. However, data from the Croatian Global Youth Tobacco Survey shows that smoking rates in adolescents are high in Croatia; that is, one in 4 students currently uses any form of tobacco; almost one-third of the students currently smoke cigarettes; 14.9% of students currently smoke cigars; and 22.1% of never smokers are likely to initiate smoking next year<sup>32</sup>. The Cochrane systematic review on the effectiveness of school-based programs for preventing smoking indicates that there is a lack of evidence on the effectiveness of such interventions in youth, although half of the best quality studies in this group found beneficial short-term effects on children's smoking behaviour<sup>33</sup>.

### **Discussion and Conclusion**

To the best of our knowledge, this is the first attempt to summarize evidence for the potential effectiveness of the smoking prevention and cessation interventions implemented in Croatia in the last two decades. This review shows that indeed there are effective strategies available to Croatian individuals and the health professionals who

advise them, and that several types of these programming strategies are actually being successfully implemented within Croatia.

Based upon the information in the Cochrane review studies, effective interventions for smoking cessation are: improvements in the quality and extent of information, comprehensive bans on tobacco advertising, restrictions on smoking in public places, prominent warning labels, and increased access to nicotine replacement treatments<sup>8</sup>. Croatia has a progressive law which covers most of the above-mentioned tools, and as a party to the WHO FCTC is continuously working on their improvement.

More specifically, quite similar to other nations across Europe, Croatia has a ban on tobacco advertising on national television and radio, as well as a ban on direct and indirect tobacco advertising and promotion (although, with a few large loopholes). Smoking is banned in government buildings, private worksites, educational and health care facilities, taxis, and domestic or international air flights. However, smoking is restricted (not banned) on trains, ferries, restaurants, nightclubs and bars, and other public place. Bans are in place for sales to minors, single cigarette sales, vending machines, and free products. Although some product labelling and regulation is required (including health warnings and ingredient information on the package label), it could be much improved. Regarding enforcement of violations, many of these current bans and restrictions may need much stricter enforcement across Croatia; however, stricter enforcement is still sorely needed all over the globe.

Further, according to the Cochrane reviews, all forms of nicotine replacement therapy (NRT) have proven to be effective and seem to increase the quit rate from baseline levels, including NRT trials that have also incorporated at least some brief advice on smoking cessation<sup>8,34</sup>. To date, Croatia has never had any type of organized NRT program; therefore, NRT, supplemented with brief cessation advice, should be a priority given the strong positive results found by the Cochrane Tobacco Addiction Group. However, NRT is expensive in Croatia; for example, 15 gums cost 35 HRK (Croatian Kunas) which is approximately \$5.98 USD (United States Dollars) and seven patches cost 110 HRK which is approximately \$18.80 USD. Efforts should be made to make this effective modality available on prescription or more affordable in the near future. As well, Croatian smokers should also be better informed on its effectiveness.

In 2003 and 2008, almost half of Croatian smokers expressed the desire to quit smoking<sup>6</sup>. This result is encouraging in that many smokers should be willing to discuss smoking cessation with clinicians and might be susceptible to treatment or other smoking cessation intervention. The existing evidence found in the Cochrane Reviews shows that advice from doctors, structured interventions from nurses, individual and group counselling are effective interventions<sup>8,18,35,36</sup>. Currently, these interventions are not a part of the Croatian national strategy for reducing smoking, and are left to the initiative of individuals. They have only once been implemented at the

national level and appropriately evaluated as a part of the »Say YES to No-smoking« program. As well, beneficial short-term effects on smoking behaviour have been observed with the implementation of self-help materials and school based programs<sup>31,33</sup>.

However, besides the legislation on tobacco use, only these interventions (i.e., self-help materials and school based programs) have thus far been continuously implemented in Croatia.

Our study has a few limitations. Most of the sources of information on smoking cessation interventions conducted in Croatia in the last twenty years (used in this paper) are not peer-reviewed. An effort was made to include all relevant sources of information, but there is still a chance that relevant studies or reports from the Commission of Ministry of health were missed or not available from the Archive.

In summary, this review indicates that, in some aspects, Croatia is following global trends in combating smoking, e.g., Croatia is a party to the WHO FCTC and has effective national legislation on tobacco control. Effective interventions such as physician advice in smoking cessation, telephone helplines, and group therapy for smoking cessation have been implemented at the national level, but not in a continuous fashion. According to the Cochrane Reviews, some of the interventions for smoking cessation that have been implemented in Croatia have potential to be effective. One of the best examples of an effective intervention is the program »Say YES to No-Smoking« which was implemented at the national level, and has incorporated effective treatment aids and interventions. However, for the most part, treatment aids for smoking cessation that should improve smokers' chances of quitting have not yet been fully developed and implemented in Croatia. All initiatives aimed at helping smokers quit smoking are only a part of various larger projects or short-term media campaigns. Accordingly, a major impediment that we have identified is the lack of a comprehensive, continuous national program.

Finally, in terms of future directions, there is a need to develop and implement programs that are similar to the »Say YES to No-Smoking« Program that should be a part of a continuous national strategy. Additionally, new research is needed that continues to build on comprehensive

research- tested multicomponent prevention initiatives utilizing school-, family-, community-, and mass media-based delivery modalities, although the Cochrane review has not yet reviewed such multi-component programming. In particular, Croatia needs prevention programs that largely focus on the social context of smoking given that throughout the country, in small villages and large cities, among the very young to the very old, smoking is still widely viewed as socially acceptable and almost customary. Thus, prevention programs should be tailored to emphasize social factors, ranging from the individual to community level, such as parental and sibling use, peer influences (including actual peer use and peer approval of use), perceived norms of approval for use, and relatively high prevalence estimates, all of which are particularly important in the early (e.g., uptake) and later (e.g., dependence) stages of tobacco use.

Cochrane Tobacco addiction group provide two reviews on harm reduction. One of this reviews did not find clear evidence of a significant health effect with a reduction of smoking<sup>37</sup>. The second review aimed to find out whether electronic cigarettes (ECs) help smokers stop or cut down on their smoking, and whether it is safe to use ECs to do this shows that there is evidence from two trials that ECs help smokers to stop smoking long-term compared with placebo ECs and no evidence emerged that short-term EC use is associated with health risk<sup>38</sup>. However, the quality of evidence of this review overall is low because it is based on only a small number of studies<sup>38</sup>. With regard to Croatia, there are no published interventions intended to help smokers reduce but not quit smoked tobacco use.

Furthermore, in terms of future directions, it is also appropriate to consider using Internet and mobile phones as a tool to increase choice and access to smoking cessation support, since both have become a regular part of daily life in Croatia. A Cochrane review found that some Internet-based interventions, especially if the information is appropriately tailored to the users, may be effective in aiding smoking cessation<sup>39</sup>. Another Cochrane review found that text message mobile phone programs are effective in the short-term (six weeks), and a combined Internet-mobile phone program is effective for up to 12 months<sup>40</sup>. Technology greatly impacts our lives and thus it can be used effectively to enhance public health, most especially among youth.

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## JAZ IZMEĐU ZNANJA I TRENUTNE PROVEDBE –PROGRAM KONTROLE DUHANA U HRVATSKOJ

### SAŽETAK

Iako su razvijeni razni instrumenti za odvikavanje od pušenja čija je učinkovitost znanstveno dokazana, mnoge zemlje ih još uvijek ne koriste u svojim programima za prevenciju pušenja ili za smanjenje prevalencije pušenja. Primarni cilj ovog rada jest prikazati učinkovitost javnozdravstvenih intervencijskih mjera protiv pušenja koje su se provodile u Hrvatskoj u zadnja dva desetljeća. Rezultati Cochraneovih sustavnih pregleda koje je izradila urednička grupa »The Cochrane Tobacco Addiction Group« bili su kriterij za vrednovanje učinkovitosti intervencija koje su se provodile u Hrvatskoj. Prema našim rezultatima, najučinkovitije bihevioralne i farmakološke intervencije za prestanak pušenja još uvijek nisu dovoljno korištene u Hrvatskoj. Osim toga, neke intervencije koje se stalno provode u Hrvatskoj, poput priprema materijala za samopomoć, školskih programa i proslava Svjetskog dana nepušenja, prema rezultatima Cochraneovih sustavnih pregleda, imaju samo male, kratkotrajne pozitivne učinke. Međutim, Hrvatska je stranaka Okvirne konvencije Svjetske zdravstvene organizacije o kontroli duhana i stoga ima učinkovito nacionalno zakonodavstvo o nadzoru nad duhanom. Hrvatska bi trebala izraditi i provoditi programe koji se integriraju u postojeće visoko kvalitetne empirijske dokaze o učinkovitosti različitih bihevioralnih, farmakoloških i socijalnih intervencija za prevenciju pušenja ili prestanak pušenja duhana. Takvi programi trebali bi postati dio nacionalne strategije i biti provedeni u cijeloj Hrvatskoj.