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Original article

SMOKING CESSATION SUPPORT CENTERS: OPPORTUNITY TO ADDRESS THE LEADING PUBLIC HEALTH CHALLENGE IN MACEDONIA

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Abstract

Macedonia is one of the leading countries in Europe with the highest use of tobacco, or 2540 cigarettes per person over 15 years of age, which is twice the world average. The aims of this study were to analyze and assess the organization and efficiency of the smoking cessation support centres, established as part of the Public Health Centres within the country.

A descriptive study was conducted using a questionnaire designed for the purposes of this study and sent to each counselling centre. A review of the reports of smoking cessation services from the official publication of the Institute of Public Health was performed. The SWOT analysis method was used for synthesis and analysis of the data.

The smoking cessation centers in Macedonia are organized and operate according to the protocol of the Institute of Public Health of the Republic of North Macedonia as a main coordinator. Since 2014, 828 smokers have used the services of the centre, which are consisted of assessment of dependence and readiness to quit smoking, very brief advice, counselling individual or group support therapy and pharmacotherapy provided by educated medical specialists in social medicine and public health. Additionally, the centres organize health promotion campaigns and health education programs for the general public, schools and health professionals.

There is a need to strengthen the work performance and effectiveness of the smoking cessation centers. Smoking cessation interventions should be recognized as essential health interventions covered by health insurance, and promotion of these services and referral from primary care will increase the utilization rate, which will lead in tobacco use decline in the country.

Keywords: smoking cessation support centers, very brief advice (VBA), SWOT analysis, behavioural services, counselling

Introduction

The World Health Organization (WHO) defines tobacco use as: "the epidemic that spreads fastest and lasts longest". In 2020, it was estimated that 22.3% of the world population used tobacco, and 80% or 1.3 billion people who smoked lived in low- and middle-income countries. Globally, 8 million deaths per year are a result of the exposure to cigarette smoke, of which about 1.2 million deaths are a result of passive smoking, and 7 million deaths are caused by tobacco use[1].

Macedonia is one of the leading countries, after Montenegro, in the European region, where the use of tobacco is the highest. In Macedonia the average usage is 2540 cigarettes

per person over the age of 15, which is twice the world average[2]. The latest national survey has shown that 46% of the adult population (15 - 64 years old) are active smokers, while 55.4% is the lifetime prevalence[2]. In Macedonia, 22% of deaths are a result of the use of tobacco, or a mortality rate of 247 deaths per 100,000 inhabitants, which is higher in males. For example, 28% of deaths among men in 2019 were the result of tobacco use[3].

The largest percentage of people who use tobacco in Macedonia live in rural areas and are males. Albanian ethnicity and unemployment are also positively associated with tobacco use. Cigarette smoking and tobacco use are perceived by the smokers as "socially acceptable habits"[4].

Tobacco use is the most preventable risk factor. It is one of the leading factors associated with the global burden of chronic non-communicable diseases, one in six premature deaths from chronic non-communicable diseases is a result of tobacco use[5], and one in four deaths from cardiovascular and cerebrovascular diseases is a result of cigarette smoking[6]. In the literature, there is clear evidence of the association between tobacco use and malignant neoplasms, especially lung cancer found in 71% of diagnosed cases, and of chronic respiratory diseases such as chronic obstructive pulmonary disease and asthma. In addition, smokers have a 20-40% increased risk of developing type 2 diabetes, and people who have been diagnosed with diabetes and use tobacco have an increased risk of developing complications[6,7]. In addition to non-communicable diseases, smoking is also a risk factor for onset of infectious diseases such as tuberculosis. Tobacco use can activate the latent form of tuberculosis[7].

Tobacco use is a particularly significant public health challenge that threatens the health of the population, because besides active smokers, every fourth person in the world is exposed to secondhand smoke[6].

According to the Framework Convention on Tobacco Control, each country should provide a structured program for prevention and control of tobacco use[8].

In Macedonia, legislation has been passed to ban smoking in public places; health promotion campaigns and education programs in schools have also been organized[9]. In 2014, smoking cessation support centers in the Regional Public Health Centers were opened. Initially, they were intended only for the health professionals aimed at promoting the harmful effects of cigarette smoking, and also training of health professionals on how to advise patients to quit smoking. Later on, they have been open to the general public, people who use tobacco and want to quit smoking[10], as smoking cessation program with professional support is the most cost-effective intervention that should be available in the health system[11].

The aim of this study was to analyze and evaluate the organization and efficiency of smoking cessation support services that are available in our country through the support centers functioning within the Public Health Centers, as well as to generate opportunities and recommendations for improvement of services in order to successfully address this public health challenge.

Material and methods

A descriptive study was conducted to analyze the organization and functioning of the smoking cessation support centers in the 10 Regional Public Health Centers across the country. A questionnaire was designed for the purposes of this study and sent to each Regional Public Health Centre. Additional data was obtained from the official reports of the Institute of Public Health of the Republic of North Macedonia, which were related to the work of the smoking cessation support centers.

For the analysis and synthesis of the results, the method of SWOT analysis[12] was used, as an effective tool in strategic planning and management in healthcare, to better evaluate the strengths, weaknesses, opportunities and threats of the organization of the

centers, as well as the cessation program and available services. The results are presented in tables using the descriptive method.

Results

The current situation shows that out of a total of 10 smoking cessation support centers opened in 2014, only a few are functioning. The centers in the Centre for Public Health Shtip and Centre for Public Health Veles do not provide advice and support for smokers. The support centers are organized and work according to the protocol of the Institute of Public Health of the Republic of Macedonia, as the main coordinator.

Professional staff is employed in all centers - a team consisting of a medical doctor and/or medical specialist in social medicine, and a medical nurse or other staff trained in smoking cessation. All members of the team have formal education in advising/treatment and providing support to smokers, and they follow the principles of Continuous Medical Education (CME) to improve their knowledge and skills.

Health services available in the smoking cessation centers are based on the principle of equity, accessible and affordable to everyone in need. The smoking cessation program is consisted of the following services:

1. Very brief advice (VBA) and behavioural support to smokers, which is carried out as an individual and/or as group visit and support. The VBA includes explaining the harmful effects of smoking and the benefits of quitting, as well as support in the cessation process.

2. Assessment of the motivation: readiness to quit, planning of services, assessment of the need for pharmacotherapy and psychological therapy, as well as referral of the smokers with cooperation with other more specialized health institutions in the country. It has to be noted that pharmacotherapy and nicotine replacement therapy in these centers was available for a limited period of time by donations.

3. Planning and implementation of health education and promotion campaigns to raise awareness to the public about the harmful effects of tobacco use, as well as educational lectures in primary and secondary schools in accordance with the National program for public health. In addition, the cessation support centers in Skopje has provided education for people involved in the food production industry. On the other hand, the support centers in Ohrid and Veles have provided training and education of health workers within the initial framework as part of the promotion of the centers.

The support and counselling services for smoking cessation in the centers follow adapted protocols from international health organizations such as the WHO protocol for very brief advice (VBA). Since 2018, a smoking cessation guide has also been available and applied in smoking cessation program in the centers. Additionally, the support center in Skopje provides services following the guidelines of the Institute for Lung Diseases and Tuberculosis in Skopje.

The services are free of charge and equally available to all smokers who have the initiative to start the cessation process by contacting the center and book an appointment. All the medical information provided and acquired during the services in the center is documented in a paper-based patient record.

Since 2014, 828 smokers have visited the smoking cessation centers (Table 1), and the most common reasons for requesting services according to patients' records were: pre-existing diseases and medical conditions associated with tobacco use, motivation to quit smoking, referral from a doctor and/or medical specialist. The number of smokers who have quit tobacco use is insignificant compared to those who have used the support services. In particular, successful attempts to cease smoking were recorded during the period when nicotine replacement therapy was available in the centers. The follow-up visits are especially

challenging since depend on patients' will to continue the consultations and support in the centers.

Table 1. Number of tobacco users who visited smoking cessation centers from 2014 to 2022

Year	Skopje	Bitola	Ohrid	Kumanovo	Tetovo	Strumica	Veles	Shtip	Prilep	Kochani
2014	8	40	72	22	8	/	/	/	8	/
2015	5	55	/	10	8	/	/	/	/	/
2016	1	39	/	4	8	/	/	/	/	/
2017	1	45	9	3	8	/	/	/	/	/
2018	/	24	3	1	8	1	/	/	19	/
2019	8	3	30	2	8	/	/	/	15	/

The available services in the smoking cessation centers are promoted to the public through the official websites of the Public Health Centers, the Institute of Public Health of North Macedonia, regional and local media, informative (propaganda) materials, posters for the health institutions in order to provide information and education in the community about tobacco use and services in the centers.

Table 2. SWOT analysis of the smoking cessation support centers

STRENGTHS	**WEAKNESSES**
Educated professional staff led by a medical doctor or specialist in social medicine and public health for counselling and support of smokers. Possibility of individual and group counselling and support services during the quitting process. Continuous cooperation and communication with health workers from primary health care and doctors - specialists from secondary and tertiary care, as well as with the general population, school children, which enable comprehensiveness, continuity, and a holistic approach in the work of the smoking cessation centers. The recognition of public health centers as important actors and leaders in the care of well-being and health in the local communities.	Restricted resources in the smoking cessation centres: - Premises within the public health centres for the smoking cessation services can be organized, especially the group support services. - Technical and technological resources, such as computer equipment, software programs, records, printed material, and brochures. - Financial resources for procurement of pharmacotherapy, psychotherapy, and payment methods and regulation for doctors' services. Unified and national clinical guidelines for very brief advice and behavioural support to be adopted and applied in all smoking cessation centers.
OPPORTUNITIES	**THREATS**
Enhancing the work of the smoking cessation support centers in Shtip and Veles throughout formal education of the medical doctors and residents in social medicine and public health. Including VBA as essential intervention in the basic health services package covered by the health insurance on primary care level with a referral to the smoking cessation centers as a specialized service for smokers motivated to quit for behavioural support, pharmacotherapy and follow-up. Availability of nicotine replacement therapy in the smoking cessation centers with inclusion on the list of medicine with prescription of the National Health Insurance Fund. The centers should take a proactive role in promoting the availability of services, with an end-goal of informing the people using tobacco of possibilities and support. Strengthening the human resources in the centers, equipment and staff with background in psychology, as psychologist/ psychotherapist so that better holistic assessment and counselling can be provided.	Sustainability of the smoking cessation centers due to insufficient professional staff, particularly specialists in social medicine and public health, as well as nurses and psychologists. Understatement of tobacco use as a national public health priority by the health policy makers, and the significance of the public health actions and interventions in addressing smoking cessation

Discussion

It is necessary to enhance the work performance of the smoking cessation support centers in order to reduce the high prevalence of tobacco use among the population, especially among children and young adults in Macedonia. The literature evidence shows that

the smoking cessation centers and programs provide support and encouragement to people who want to quit smoking, and those are three times more successful in quitting smoking when access to professional counselling and support is available. Additionally, smoking cessation programs and centers are important for preventing the start of tobacco use in children, supporting people to quit tobacco use, and eliminating exposure to secondhand smoke[11].

The low coverage and utilization of available services in the smoking cessation centers in Macedonia is probably due to the insufficient promotion among the public, the passive role as the initialization of the counselling is by the smokers, the small number of referred patients by primary care physicians and specialists, as well as the unavailability of pharmacotherapy. Particular opportunities for improving the work performance of the centers include: expanding the professional team with medical doctors, specialists in social medicine and public health, psychologists or psychotherapists who will provide holistic support, as well as continuous education and motivation, promotion of the smoking cessation centers and available services to the public. Community health workers, such as specialists in social medicine and public health, primary care physicians, specialists in family medicine who proactively advice and recruit smokers in smoking cessation program, are determinants of effective interventions, especially provision of patient-centred advice and support with available pharmacotherapy[13].

Education of health professionals is crucial in implementing counselling and support services. The staff in the centers have received formal training, as well as continuous medical education through a certified and nationally adapted program at the Faculty of Medicine in Skopje, designed with support of the Henry Ford Health System. All specialists in social medicine and public health who work in the centers have enhanced their knowledge in counselling for smoking cessation, caring out of population-based surveys to identify smokers and their social determinants, assessment of individual smoking dependence index and willingness to quit smoking. Moreover, they have been trained to provide structured very brief advice and support to motivated patients to quit smoking, and counselling in a standardized form in a smoking cessation guide[14,15]. In addition, smoking cessation interventions need to be implemented and be a part of the formal medical education curriculum, as 29% of the doctors in Macedonia are smokers, who stated in the national survey that they rarely advised their patients to quit smoking[16]. The smoking cessation centers can also be a suitable basis for training of doctors during their clinical internship for receiving medical license.

Monitoring and following the people who use the services is a challenge for the centers, mainly because this service is not included as an essential healthcare intervention in the basic service package covered by the National Health Insurance Fund. Moreover, pharmacotherapy for smoking cessation is not on the list of medicines nor is covered by the Health Insurance Fund. Recognizing smoking cessation as an essential health intervention is a great opportunity to increase the effectiveness of the work performance of the centres, as well as integrative and continuous care for smokers between primary healthcare and the smoking cessation centers, through referral in the system. The results of the first national randomized control trial on smoking cessation interventions in primary care settings in Macedonia, showed that interventions must be first implemented in on primary healthcare level, as this is the primary contact for patients who use tobacco, and that the trust and patient-primary care doctor relationship, for many it was the only reason to enter in a smoking cessation program[17]. The highest level of evidence indicates that besides primary care level, functioning counselling centers where patients can be referred for continuous support are crucial for effectiveness of the interventions. Additionally, for an effective program the counselling centers should have electronic patient records, system of following

and supporting patients, telemedicine services, telephone counselling, and SOS numbers easily accessible, and all services should be available to the entire population[18,19].

Table 3. Available smoking cessation interventions and services in certain countries of the world and European region, selected according to the prevalence of tobacco use

State and prevalence of tobacco use	National response to cigarette smoking	Type of smoking cessation intervention available in the health care system
Great Britain[1]	Counselling is integrated into all levels of health care. It is particularly improved in primary health care, not just in counselling centers which are available in every city free of charge. The design of the programs includes individuals who quit smoking, and it is by principle, individually oriented toward the patient. National evidence-based guidelines for smoking cessation are also included.	1. A very brief tip; 2. Measurement of exhaled carbon monoxide levels. 3. Accessible pharmacotherapy by prescription, which is free of charge in counselling centers; 4. Daily contact with the doctor via phone during the first four weeks and free contact with local counselling centers for a total period of 12 weeks; 5. Free mobile application for monitoring and support.
USA[2]	Legislation and policies with a ban on tobacco product advertising, warnings on cigarette packaging, and campaigns to raise awareness through mass media. In the USA, there is a practice of identifying patients who use tobacco in all healthcare facilities. Additionally, every healthcare worker is trained to assess these patients and provide appropriate interventions.	Programs based on multiple intervention guidelines in counselling centers and clinics in three phases: A) Preparation and motivation of the smoker, and increasing trust with the doctor; B) Intervention - behavioral support, pharmacotherapy, hypnosis, acupuncture, and other evidence-based interventions in the healthcare system; C) Maintenance of change – ongoing support, strategies for coping with withdrawal symptoms and relapse.
New Zealand[3]	Legislation aimed at preventing minors from starting tobacco use has been adopted in New Zealand, and a lifetime ban on cigarettes sale to individuals born after 2008 has been enacted. The ban on cigarettes sale to individuals under 18 is being gradually increased each year, until the entire population is covered. New Zealand's goal is to have the smoking rate below 5% by 2025.	A) Programs including education for the population about the harmful effects of cigarette smoking. B) Ban on tobacco products sale in all stores. C) Adequate penalties for any violation of the bans.
Serbia [4]	In Serbia, there are counselling centers available in health care facilities. Counselling is provided by a professional medical team consisting of a doctor, specialist, nurse and psychologist, all trained to provide counselling.	Telephone counselling with medical professionals.

Sources:[1]Public Health England. Health matters: stopping smoking-what works? [2]Schwartz J.J. Methods of smoking cessation. Med Clin North Am.1992;76(2):451-76 DOI:10.1016/s0025-7125(16)30362-5 [3] The New York times; New Zealand bans cigarette sales to everyone born after 2008https://www.nytimes.com/2022/12/14/world/asia/new-zealand-smoking-ban.html [4]Counseling centers for smoking cessation, Novi Sad

All these services and interventions including behavioural counselling and pharmacotherapy which is available by prescription from a doctor, are already available as a standard care and service in the health system in most European countries, the United States

of America and New Zealand, (Table 3). In the UK, 18 out of 100 people in smoking cessation programs quit tobacco use with an integrated professional counselling and behavioural support with psychotherapy and pharmacotherapy.[11] In European countries, the main focus is on primary prevention and start of tobacco use through health promotion campaigns, and health education programs for young people in the schools, as well as promotion of all available interventions. The insufficient promotion of the available services for smoking cessation among the population and health professionals results in reduced utilization of these services[20].

Tobacco use and cigarette smoking should be perceived as a serious risk factor which leads to complex and chronic disease and addiction, therefore it requires to be addressed with interventions and pharmacotherapy. First-line medications which are safe and approved by the European Medicines Agency, and can be used to treat nicotine addiction are nicotine replacement therapy, varenicline, and bupropion[15]. The only countries from the European region where this therapy is unavailable are Macedonia and Georgia. According to the WHO Framework Convention on Tobacco Control (FCTC), every country should provide access to nicotine replacement therapy, free of charge or at affordable prices[21].

Successful implementation and delivery of interventions and services within the healthcare system in Macedonia as well as enhancing the work of counselling centers for smoking cessation depend on the health legislation and policy, particularly on the support from the national government. Macedonia is among the largest producers and exporters of tobacco, and this crop receives the highest subsidies from the government, tobacco being a source of income for many households[22].

Smokers living in a country with a national program covered by health insurance, pharmacotherapy, and other interventions are more likely to use standardized medical care and have higher success rate in quitting. This shows that national policy plays a central role in tobacco use and quitting[23].

Conclusion

The smoking cessation support centers in Macedonia have been functioning since 2014. Their establishment is a significant government strategy in addressing the high prevalence of tobacco use in Macedonia. These counselling centers are necessary to support people who use tobacco in the process of quitting with services provided by highly trained and educated healthcare staff.

For improvement of the organization of these centers, a greater promotion of the centres and available services is needed among the public and healthcare workers which will increase the utilization of services. Implementation of evidence-based smoking cessation interventions following the principles of good medical practice as a standard and essential health service in the basic package covered by the Health Insurance Fund and provided on primary healthcare level and in the cessation support centres, where behavioural support and pharmacotherapy will be available and affordable is the necessary reform in the Macedonian Healthcare System, as country that is obliged to the WHO FCTC. Many of these proposed interventions are standard services in almost all European countries besides Macedonia. Investment in the healthcare workforce in the smoking cessation centers through equipping, education, and motivation is particularly important.

Addressing this public health challenge besides decreasing the high prevalence of tobacco use will also improve the health status of the population, by reducing the effects of second-hand smoking and the high burden of chronic non-communicable diseases. This will result in achieving most of the national health goals and action plans, particularly reducing the premature mortality from chronic non-communicable diseases by 2025.

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