World Health Organization

Eastern Mediterranean Region

Quit tobacco use

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WHO Library Cataloguing in Publication Data

Names: World Health Organization. Eastern Mediterranean Region

Title: Quit tobacco use: status of tobacco cessation in the Eastern Mediterranean Region / World Health Organization. Eastern Mediterranean Region

Description: Cairo: World Health Organization. Eastern Mediterranean Region, 2024

Identifier: ISBN 978-92-9274-197-6 (pbk.) | ISBN 978-92-9274-198-3 (online)

Subjects: Tobacco Use Cessation - methods | Smoking Prevention | Pharmaceutical Services - organization & administration | Tobacco Use - epidemiology | Global Health | Eastern Mediterranean Region

Classification: NLM WM 290

Contents

Acronyms and abbreviations

CDC	Centers for Disease Control and Prevention
COVID-19	coronavirus disease
CVD	cardiovascular disease
DALYs	disability-adjusted life years
ENDS	electronic nicotine delivery systems
ENNDS	electronic non-nicotine delivery systems
GATS	Global adult tobacco study
GCC	Gulf Cooperation Council
GDP	gross domestic product
GYTS	Global youth tobacco surveys
HLM	High Level Ministerial Group on the Control of Tobacco and Emerging Tobacco and Nicotine Products in the Eastern Mediterranean Region
HTPs	heated tobacco products
NRT	nicotine replacement therapy
PAF	population attributable fraction
QALYs	quality-adjusted life years
SARS-CoV-2	severe acute respiratory syndrome coronavirus 2
SLTs	smokeless tobacco products
TAPS	tobacco advertising, promotion and sponsorship
WHO	World Health Organization
WHO FCTC	WHO Framework Convention on Tobacco Control

Acknowledgements

This report has been prepared by the Tobacco Free Initiative, Department of Universal Health Coverage and Noncommunicable Diseases in the World Health Organization Regional Office for the Eastern Mediterranean. Contributors include Dr Sarah Sadek, Dr Fatimah El-Awa and Ms Sophia El-Gohary from the Tobacco Free Initiative at the WHO Regional Office; and Dr Dongbo Fu from the No Tobacco Unit, Department of Health Promotion at WHO.

Data on tobacco cessation services and other tobacco-related indicators were provided by Member States of the WHO Eastern Mediterranean Region through the WHO report on the global tobacco epidemic, 2023.

1. Global tobacco epidemic

1.1 Tobacco use globally and in the Eastern Mediterranean Region

Despite a constantly growing number of control policies to counter consumption, tobacco remains one of the leading global disease risk factors and an underlying cause of ill health, disability and preventable death. According to the 2021 WHO Report on the global tobacco epidemic, tobacco kills 8.7 million people worldwide each year, making it the biggest cause of preventable death. More than 7 million tobacco users die as a result of direct tobacco use *(1)*, accounting for more deaths each year than HIV/AIDS, tuberculosis and malaria combined. This amounts to a figure almost equivalent to the population of Lebanon. The majority – 80% – of tobacco users live in low- and middle-income countries where cessation services are limited *(2)*.

Tobacco use has steadily decreased among adult men and women across all income groups over the last two decades, a trend that is projected to continue **(Fig. 1)**. In 2000, 32.7% of the global population used tobacco products in some form. By 2020, the figure had declined to 22.3%. The decline in tobacco use rates is expected to continue if tobacco control measures are maintained, falling to 20.4% of the global population by 2025. In 2000, 49.3% of men were using tobacco in some form, a figure that had declined to 36.7% by 2020. Over the same period the number of women using tobacco products fell from 16.2% to 7.8% in 2020 and is estimated to fall to 6.6% by 2025. Despite the decline in tobacco use globally, roughly 1.3 billion people continue to use tobacco

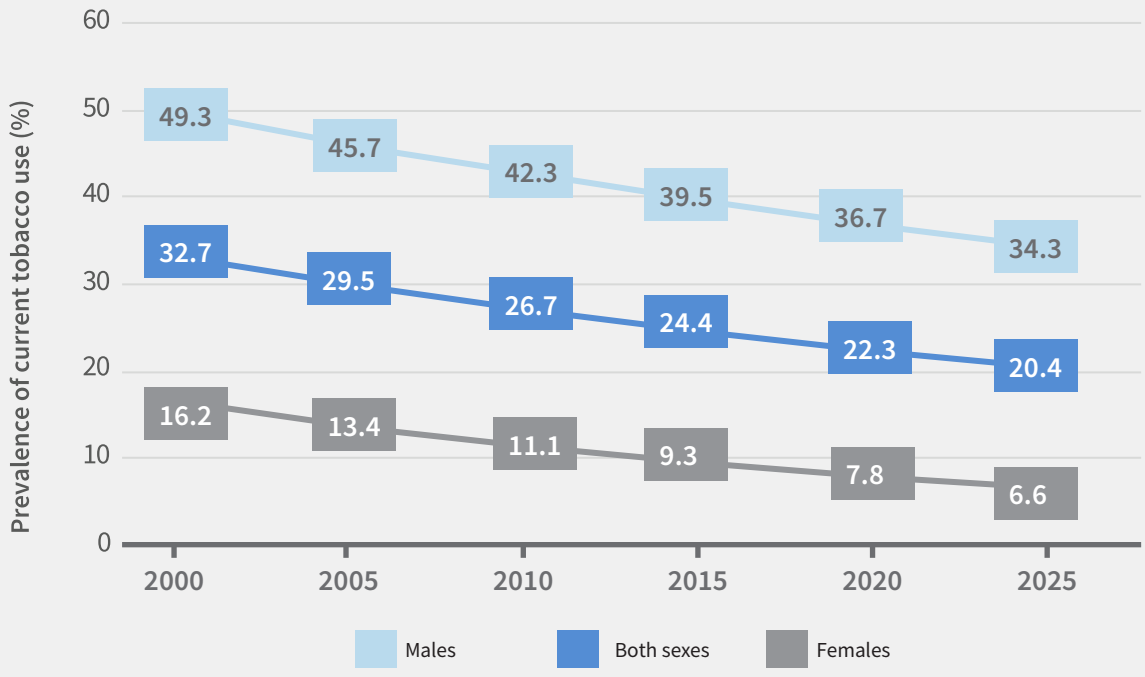


Fig. 1. Global trends in prevalence of tobacco use among people aged 15 years and older, by sex *(3)*

products *(3)*. According to WHO, "tobacco cessation is the only approach with the potential to reduce tobacco-related morbidity and mortality in the short- and medium-term".

The WHO Eastern Mediterranean Region is home to an estimated 745 million people. Although tobacco use prevalence is expected to slightly decrease in the Region, 92 million people – 19% of the adult population – currently use tobacco in some form. The majority of users – 82 million – are men. The low number – 9.5 million – of women has raised questions about possible underreporting of female tobacco use.

The Region was once thought to have the slowest decline of all WHO regions *(4)*. The latest WHO trend report, however, showed improved reduction rates. Yet the Eastern Mediterranean still trails the global average reduction rate of 24%. Several factors might explain this. Data from the Region is weak: it includes several countries with insufficient data due to lack of monitoring. Of the six countries in the world where tobacco use is expected to increase, four – Egypt, Jordan, Lebanon and Oman – are in the Region. Despite better than previously thought reduction figures, an increase in absolute numbers of tobacco users in the Region is anticipated due to population growth.

Smokeless tobacco products (SLTs), which can be chewed, sniffed, applied on teeth and gums, gargled or drunk, are often perceived as less harmful than regular tobacco products though they carry equally severe health risks. SLTs are consumed by 240 million men and 96 million women globally (5). The highest consumption rates are in in the South-East Asia Region (24.7% of males and 11.6% of females), followed by the Eastern Mediterranean Region where the prevalence rate among men is 7.3%, or around 21 million adult users of SLTs. An estimated 2.6% of 13–15-year-olds also use smokeless tobacco products globally – 3.2% of boys and 1.9% of girls. The highest rates of adolescent use are found in the Eastern Mediterranean and the South-East Asia regions where 4.7% of boys and 3.1% of girls, and 4.7% of boys and 2.9% of girls respectively, use SLTs **(Fig. 2)** *(3)*.

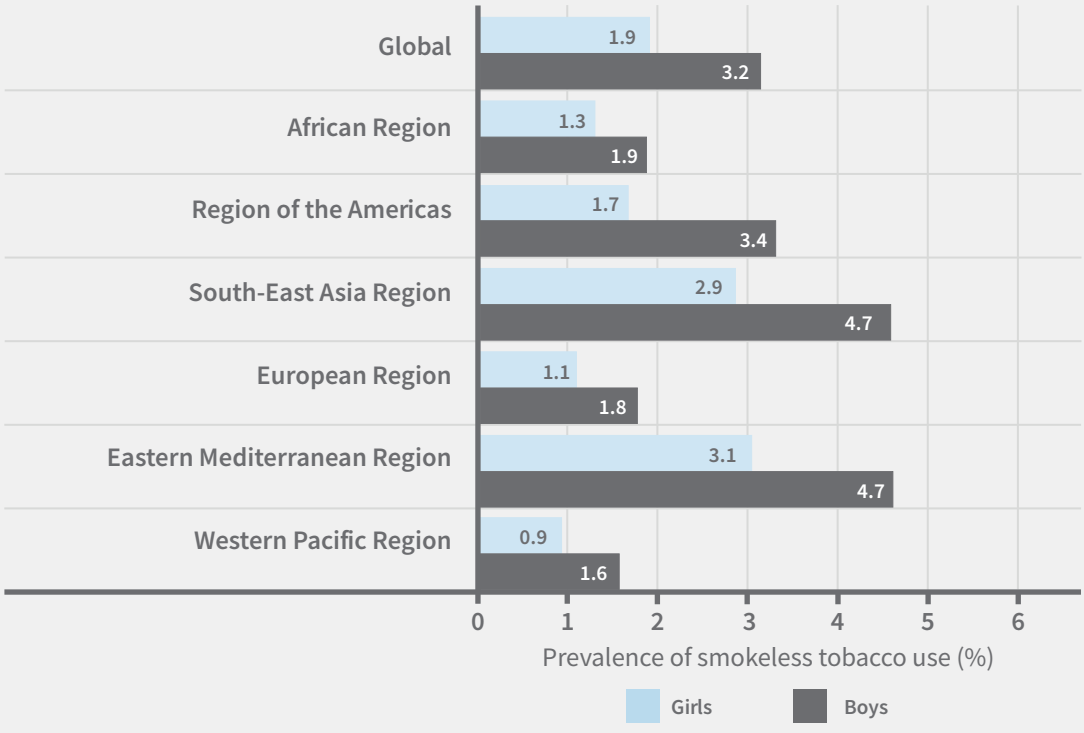


Fig. 2. Prevalence of smokeless tobacco use, adolescents aged 13–15 years *(3)*

Efforts to control SLTs lag behind those to curb cigarette consumption. Despite growing awareness of the dangers of SLTs few countries collect data on use under global or national surveillance mechanisms *(6)*. Measures for SLT cessation are as essential as those for smoking cessation *(7)*.

Waterpipe smoking exposes users to many of the same toxic compounds as cigarettes but at significantly higher levels *(8)*. The Eastern Mediterranean Region has the highest prevalence estimates of waterpipe smoking among WHO regions *(9)*, with Saudi Arabia (8.5%) leading the group of countries and Lebanon, at 48.4%, with the highest waterpipe usage among female tobacco users *(10)*. A study from Lebanon has shown that despite its addictive nature and the high prevalence rate, there is a lack of knowledge of water pipe cessation techniques *(11)*.

In recent years electronic nicotine delivery systems (ENDS), electronic non-nicotine delivery systems (ENNDS), nicotine pouches and heated tobacco products (HTPs) have been steadily increasing in popularity despite substantial health risks *(12)*. Population-based survey data on the use of ENDS/ENNDS are starting to gather more information and WHO has recommended increased monitoring of their use.

Tobacco use among adolescents (aged 13–15 years) is endemic in many parts of the world, with nearly 10% of adolescents using some type of tobacco product *(3)*. Around 38 million 13–15-year-olds – 13 million girls and 25 million boys – are estimated to use tobacco, and 48% live in low- and middle-income countries. The highest tobacco use rate among adolescent boys is in the Eastern Mediterranean Region, where almost 16% currently use tobacco **(Fig. 3)** *(3)*. Adolescence can mark a dangerous entry point into an often life-long and potentially deadly habit and encouraging cessation among youth is a key strategy in lowering global prevalence.

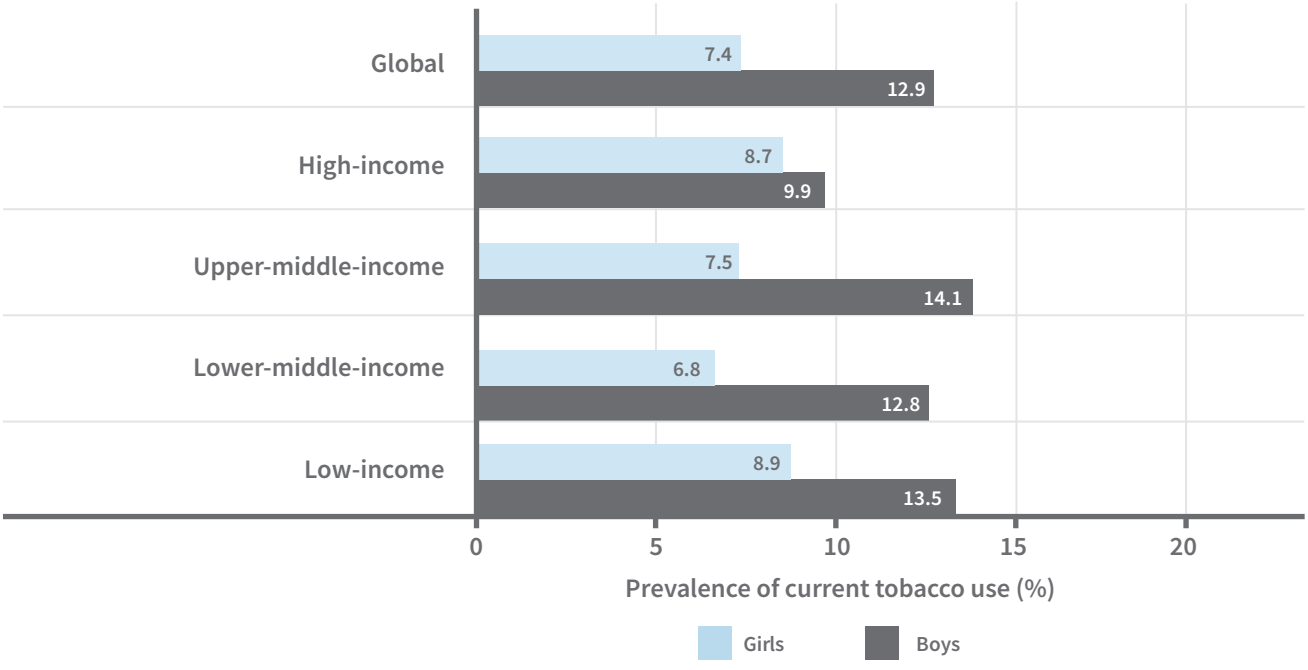


Fig. 3. Prevalence of current tobacco use, adolescents aged 13–15 years, by World Bank income group *(3)*

1.2 Public health burden of tobacco use

The number and variety of fatal and disabling diseases and conditions tobacco use causes underscores the importance of effective cessation measures. Inhaling cigarette smoke and the more than 7000 chemicals it contains can cause at least 20 different types of cancer. Lung cancer, which accounts for nearly one in five cancer deaths, is most closely associated with tobacco use *(13, 14)*, though tobacco can cause cancers of the throat and oral cavity, the bladder, kidney, stomach and cervix.

Tobacco use is the second leading cause of cardiovascular disease (CVD) after high blood pressure. Smoking causes chronic lung diseases that can be severely disabling or fatal, increasing the risk of death 12 to 13 times *(15)*. After smoking five packs of cigarettes, 60% of smokers are dependent, with catastrophic personal and public health consequences *(16)*. Investing in cessation means not only investing in the health of an individual but investing in public health, and there are major governmental returns on outlay *(2)*.

As the Region undergoes demographic and socioeconomic transitions, cancer as a cause of morbidity and mortality becomes ever more striking. The population attributable fraction (PAF) is used to statistically identify and analyse the association between exposure to a risk factor and its outcome. The PAF allows us to assess the public health impact of exposure in populations *(17)*. At 14.9%, smoking has the second highest PAF in the Region. It means that 14.9% of cancer cases can be attributed to smoking *(18)*.

Another way to describe the health impacts of tobacco use are disability-adjusted life years (DALYs), a measure of the years of healthy life lost. DALYs are calculated from the sum of years lost due to premature death and years lived with disability *(13)*. In 2019, 15.4% of all deaths were due to tobacco use in some form *(1).* Tobacco use and high blood pressure have been identified as the leading cause of DALYs in the Eastern Mediterranean Region *(19)*.

Exposure to second-hand smoke has its own disease burden. While an estimated 8.7 million people die annually from direct tobacco use, 1.2 million premature deaths – the majority of them women – are due to the consequences of secondhand smoke. An estimated 65 000 of these premature and preventable deaths are children and adolescents under 15 years. In the Region, 38% of 13–15 year-olds are exposed to secondhand smoke at home *(1, 20)*.

The total economic damage of smoking worldwide has been estimated at more than US$ 1.4 trillion annually, equivalent to 1.8% of the world's annual gross domestic product (GDP) *(5, 21).* The cost of loss of productivity due to smoking-attributable illnesses and deaths is estimated to be around US$ 1436 billion, with 40% of the costs incurred in low- and middle-income countries *(15)*. Evidence from Saudi Arabia has shown that the return on investment for tobacco control interventions is US$ 5.37 per US$ 1 invested in direct and indirect tobacco control *(22)*.

Several studies have shown that measures for smoking cessation are cost effective. They often examine the cost per quality-adjusted life years (QALYs) saved, QALY being a standardized measure of disease burden which combines both survival and health-related quality of life in a single index. For example, a study that presented data from a return-on-investment analysis of 124 low- and middle-income countries found that additional per capita cessation investment of US$ 1.68 over a period of 10 years results in 152 million successful quitters globally and nearly 3 million lives saved. By the time quitters reach the age of 65 years, this would equal 16 million lives saved. It means that the return on every dollar invested is US$ 7.50 *(2)*. In a global comparison across countries, the cost per life year saved from the use of pharmacological treatment interventions for tobacco cessation ranged between US$ 128 and US$ 1450 and up to US$ 4400 per QALY saved *(23)*.

Tobacco cessation counselling, combined with accessible and evidence-based medications, are cost effective and provide long term results when delivered consistently *(24)*.

2. Control and cessation measures globally and in the Region

2.1 Introduction

The adoption of cessation measures is an integral part of State Parties' obligations to the WHO Framework Convention on Tobacco Control (WHO FCTC). The WHO FCTC entered into force on 27 February 2005 and has 182 State Parties, covering more than 90% of the world's population. It is the primary international treaty to address tobacco control, obliging State Parties to adopt measures to reduce demand for tobacco and reduce its supply. The fastest decline in tobacco use prevalence was recorded in the years immediately after WHO FCTC entry into force *(2)*.

Article 14 of the WHO FCTC calls on signatories to offer tobacco cessation services to support tobacco users to quit. In 2007, WHO introduced the MPOWER measures – six cost-effective and high impact actions. MPOWER is an acronym of key policy strategies proven to effectively reduce the demand for tobacco: monitoring tobacco use and prevention policies; protecting people from tobacco smoke; offering help to quit tobacco use; warning people about the dangers of tobacco; enforcing bans on tobacco advertising, promotion and sponsorship, and raising taxes on all tobacco products *(15)*.

In 2010, the Conference of the Parties adopted guidelines for implementing Article 14 of the WHO FCTC, with recommendations that include:

- developing an infrastructure to support tobacco cessation and treatment of tobacco dependence;
- key components of a system to help tobacco users quit;
- developing cessation support using a stepwise approach;
- monitoring and evaluation; and
- international cooperation over the implementation of the most effective tobacco cessation measures.

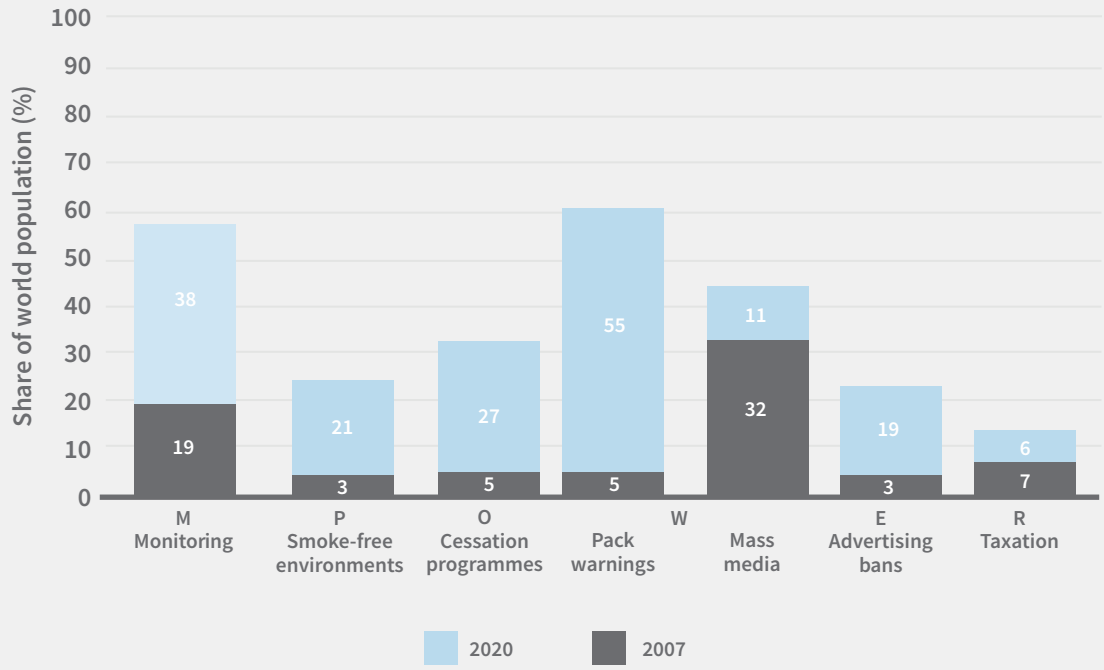
To date, 37 million lives have been saved through the implementation of MPOWER tobacco control measures *(5)*.

2.2 Implementation of MPOWER measures on a national level

According to the eighth WHO Report on the global tobacco epidemic, 75% of countries and 5.3 billion people out of 7.96 billion globally are protected by at least one MPOWER measure at best-practice level, and 4.4 billion by at least two measures, leaving 2.4 billion people unprotected by any tobacco control measure at highest level *(5)*. Brazil and Turkey are the only countries to have implemented all MPOWER measures at the highest level **(Fig. 4)**.

There are huge differences in implementation of MPOWER tobacco control policies. Adoption of complete TAPS bans, of comprehensive cessation services and the raising of tobacco taxes to highest level must be accelerated globally *(25).* Offering help to quit – i.e., cost effective and evidence-based cessation services – are offered by 26 countries at best practice level, covering 2.5 billion people **(Fig. 5)** *(5)*.

The Eastern Mediterranean Region, where 18.6% of the population are tobacco users, faces specific challenges in terms of MPOWER implementation *(3)*. The challenge of tobacco control "continues to escalate" as novel tobacco products, population growth, ongoing tobacco industry interference and competing health issues hinder tobacco control implementation *(26)*. Though the Region has the highest proportion of populations living in countries where tobacco use is estimated to rise, it trails behind all the other regions, with the exception of the African Region, in terms of policy implementation and enforcement *(3).* Fully implemented and enforced MPOWER measures effectively reduce smoking prevalence *(27)* yet to date only three countries in the Region – Egypt, Islamic Republic of Iran and Jordan – are implementing four MPOWER measures at the highest level.



Note: *2010 for W Mass media, 2008 for R Taxation

Fig. 4. Increase in the world population covered by selected tobacco control policies, 2007* to 2020 *(5)*

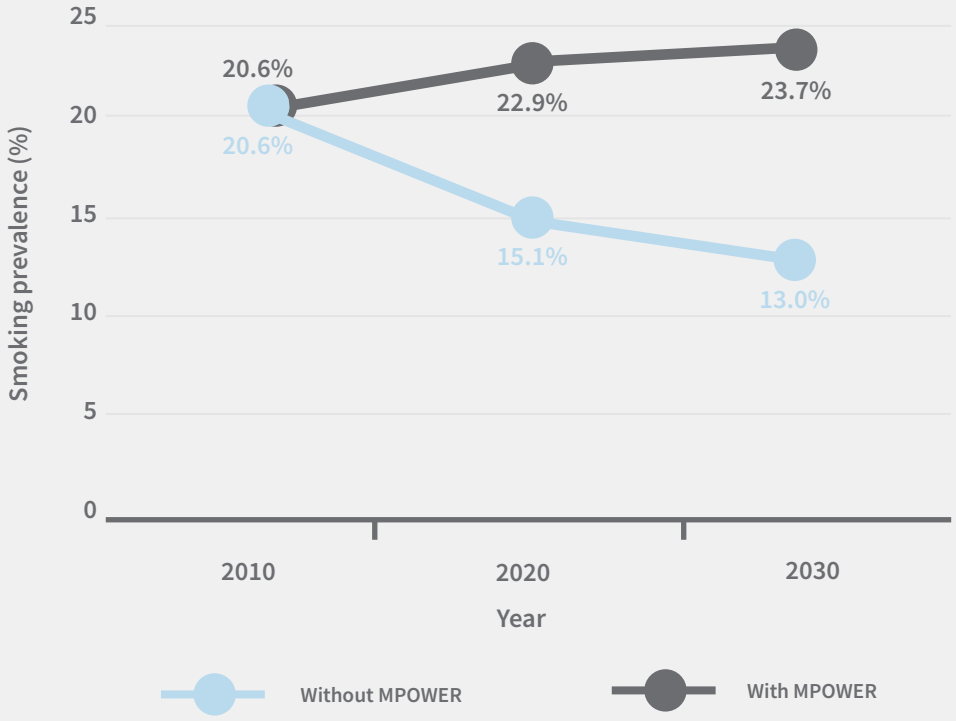


Fig. 5. Impact of implementing versus not implementing MPOWER on smoking prevalence in the Region *(26)*

To better understand tobacco control in the Region a brief overview of each MPOWER measure is necessary, together with a close examination of cessation policies.

Monitoring

Data from the Eastern Mediterranean Region is among the weakest of all regions with several countries failing to sustain monitoring efforts over the past five years *(3)*.

Protecting people from the harms of tobacco

Sixteen out of 22 countries/territories have adopted tobacco free public places policies but weak implementation, including the allocation of designated smoking areas, has led to gaps in successfully protecting people from the dangers of secondhand smoke *(5)*.

Offering help to quit tobacco use

While cost effective and evidence-based cessation services are offered by 26 countries globally at best practice level, covering 2.5 billion people, only four countries in the Region offer cessation services at best practice level, leaving 19 with non-effective coverage.

Best practice in tobacco dependence treatment includes cost covered nicotine replacement therapy (NRT) and other cessation services, and provision of a toll-free national quit line. Intermediate level includes NRT and some partially cost covered cessation services. The lowest level has neither of these evidence-based cessation methods.

Currently, Islamic Republic of Iran, Jordan, Kuwait, Saudi Arabia and United Arab Emirates are the only countries in the Region to have achieved best practice in terms of offering help to quit. Other states have minimal, weak or no policy in place, with 13 at intermediate level and four at the lowest level *(3, 27)*. Since 2018, Oman and the Syrian Arab Republic have declined in terms of cessation services from intermediate to the lowest level of implementation *(5)*.

Warning about the dangers of tobacco

Thirteen out of 22 countries/territories in the Region use graphic health warnings, and Saudi Arabia has progressed to plain packaging. Some countries apply warnings that are lacking in features stipulated by the WHO FCTC.

Enforcing bans on tobacco advertising, promotion and sponsorship

With the exception of Somalia, all countries in the Region apply partial or complete bans on TAPS *(5)*. Vigilance is needed, however, as advertising and promotion of novel tobacco products has emerged as a challenge, with companies able to circumvent TAPS bans due to lax regulation, and use of tobacco products such as ENDS, ENNDS and HTPs have recently appeared in television productions in the Region, including by actors of both sexes in Egypt and in Islamic Republic of Iran.

Raising taxes

Though four countries/territories – Egypt, Jordan, Morocco and West Bank and Gaza Strip – are performing at best practice level, overall the Eastern Mediterranean lags behind other WHO regions.

2.3 Types of control and cessation measures

The need to scale up cessation services in the Region is high given absolute numbers of tobacco users are increasing *(3)*. Many countries have improved services though they have yet to attain best practice level. Morocco, Saudi Arabia, Syrian Arab Republic and Tunisia offer cessation support in most health care facilities. Cessation support is free in Bahrain, Jordan, Kuwait, Qatar and Saudi Arabia. National toll-free quit lines are available in Egypt, Islamic Republic of Iran, Kuwait, Saudi Arabia and United Arab Emirates *(28)*. A majority of people living in the Region has legal access to NRT, though it is cost covered for only 23%.

MPOWER measures implemented at an intermediate level are far less effective in reducing prevalence than best practice level. More effort is needed to reach the highest level of implementation *(29, 30).* The Hamad Medical Center, a WHO collaborating centre in Qatar, has been set up to offer specialized training for countries seeking to scale up their cessation services. The collaborating centre supports WHO's work in building the capacity of health care providers in tobacco cessation and treating tobacco dependence in the Region.

WHO recommends cessation as one of the essential noncommunicable disease interventions. Evidence-based cessation support (medication and behavioural interventions) can double a tobacco user's chance of quitting successfully *(4)*. Key components of population-wide tobacco cessation measures recommended by WHO include:

- integration of brief cessation advice into primary health care services;
- establishing national toll-free quit lines; and
- digital and mobile cessation support.

Different evidence-based types of tobacco cessation interventions are displayed in **Fig. 6**. Though these interventions work best when combined, they can be introduced in a stepwise manner if resources are limited *(15)*.

Behavioural support to cease tobacco use and free access to specialized practitioners are proven to increase the rate of cessation among adults *(31)*. To provide this service, health care professionals need to be trained to not only ask about tobacco use but actively promote cessation. WHO has developed a comprehensive training package for brief tobacco interventions, strengthening health systems for treating tobacco dependency in primary care. It is available free of charge, as well as an e-learning course *(32).*

According to the 2019 WHO Report on the Global Tobacco Epidemic, 60% of tobacco users indicated a desire to quit, but without cessation support only 4% were successful in stopping tobacco use *(15)*. Since a combination of behavioural and pharmacological interventions such as NRs and non-nicotine pharmacotherapies is the most effective way to quit, these services should be offered to tobacco users where resources allow *(15, 31, 33).*

A cost-effective analysis from Jordan has shown that the use of NRT regimens results in up to 64 030 life years gained in a male population who intended to quit *(34).* Yet in the Region the price of NRTs, where they are available (Afghanistan, Bahrain, Islamic Republic of Iran, Iraq, Jordan, Kuwait, Morocco, Oman, Pakistan, occupied Palestinian territory, Qatar, Saudi Arabia, Tunisia and United Arab Emirates) *(28),* is higher – sometimes triple the price – than a pack of cigarettes *(35)*. In Bahrain, Jordan, Kuwait, Qatar, Saudi Arabia and Tunisia, NRTs are fully cost covered by national health insurance. In 67% of countries

Behavioural interventions	Population-level approaches	Brief advice	Advice to stop using tobacco, usually only a few minutes, is given to all tobacco users during the course of routine consultaions and/or interaction with a physician or health care worker.
		Quit lines	A national toll-free line is a telephone counselling service that can provide both proactive and reactive counselling. A reactive quit line provides an immediate response to a call initiated by the tobacco user, but only responds to incoming calls. A proactive quit line involves setting up a schedule of follow-up calls to tobacco users to provide ongoing support.
		mTobaccoCessation	Tobacco cessation interventions are delivered via mobile phone text messaging. Mobile technologies provide the opportunity to expand access to a wider population, and text messaging can provide personalized tobacco cessation support in an efficient and cost effective manner.
	Inidvidual specialist approach	Intensive behavioural support	Behavioural support refers to multiple sessions of individual or group counselling aimed at helping people stop tobacco use. It includes all cessation assistance that imparts knowledge about tobacco use and quitting and provides support and resources to develop skills and strategies for changing behaviour.
		Cessation clinics	In many coutries, clinics specializing in tobacco cessation services are available. These clinics offer intensive behavioural support and can offer medication or give advice on the provision of medication if needed.
Pharmacological interventions	Nicotine replacment therapies (NRTs)		NRTs are available in the form of gum, lozenges, patches, inhalers and nasal spray. They reduce craving and withdrawal symptoms by providing a low and controlled dose of nicotine without the toxins found in cigarettes.
	Non-nicotine pharmacotherapies		These include medication such as bupropion, varenicline and cytisine. These pharmacotherapies reduce cravings and withdrawal symptoms and decrease the pleasurable effects of cigarettes and other tobacco products.

Fig. 6. Types of tobacco cessation interventions: WHO Report on the global tobacco epidemic, 2019 *(15)*

where NRTs are available, tobacco users can access them over the counter *(33).* While consensus draft guidelines for health care workers in North Africa and the Greater Middle East to improve smoking prevention and cessation were published in 2013, only six countries include NRTs in their essential medicines lists *(33, 36).*

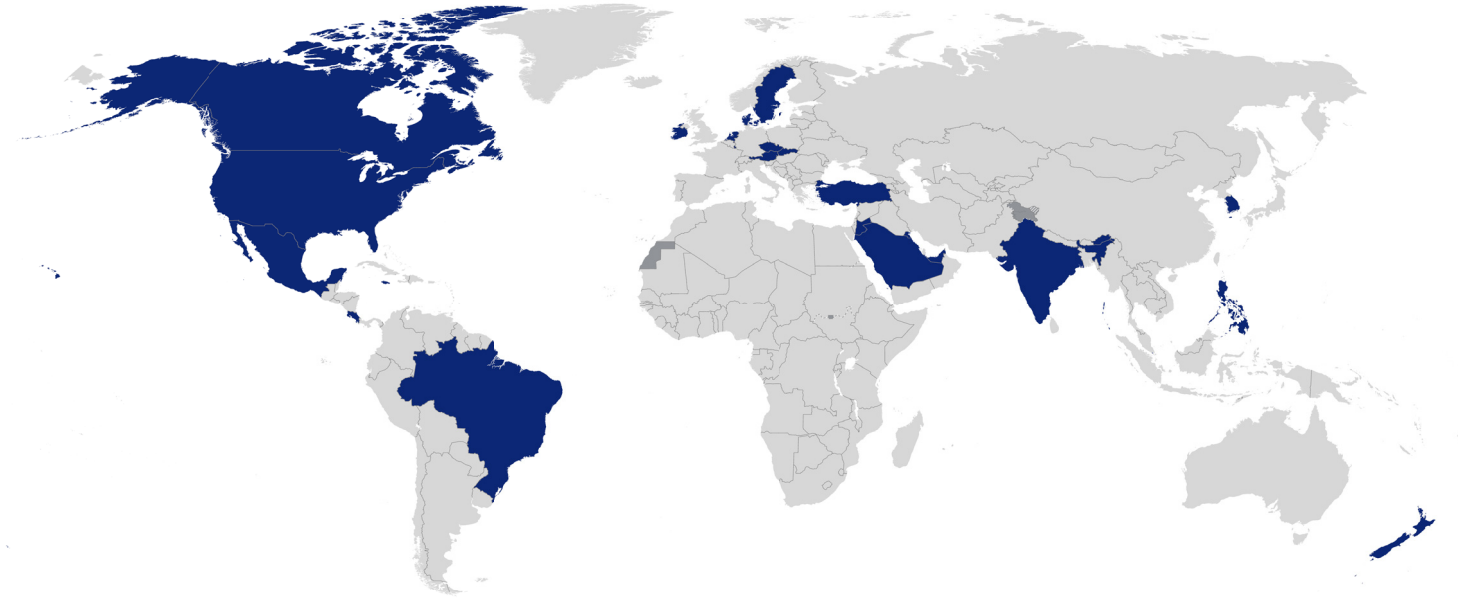
Current cessation practices in the Region leave much room for improvement in terms of quit lines. Less than one third of people living in the Region – Egypt, Islamic Republic of Iran, Kuwait, Saudi Arabia and United Arab Emirates – have access to a national toll-free quit line. While currently there is no national toll-free quit line in Qatar, the Hamad Medical Corporation's Tobacco Control Center has a 24-hour hotline to respond to inquiries. Such lines, which offer cessation support by quit coaches trained in motivational techniques, have great potential, especially for tobacco users who want to quit but lack adequate information. They are easy and relatively cheap to implement and have proven their potential to increase quit rates *(33)*. Quit lines can also be tailored to reach specific subpopulations and can be used to offer free or subsidized NRT to callers.

Cessation support is currently available in at least some primary health care facilities in the majority of countries/territories in the Region, though not in Djibouti, Egypt, Oman, Pakistan, Somalia and Yemen. In roughly half these facilities, the cost of cessation support is partially covered *(15).*

Gaps widen when comparing support programmes in hospitals: nine of the 22 countries/territories in the Region offer smoking cessation support in at least some hospitals. Modern cessation support reaches beyond primary care facilities and hospitals and includes offices of health care professionals and the community at large. With adequate training, health care professionals can be involved in cessation programmes and helpers from within the community can motivate, educate and offer social support to tobacco users seeking to quit.

3. Tobacco cessation: global best practices

A number of promising cessation interventions have been implemented since WHO FCTC came into force in 2005. Some countries have implemented cessation services fully, reaching the highest level of achievement in terms of tobacco dependence treatment **(Fig. 7)** *(15, 37)*. In the Region, Jordan, Kuwait, Saudi Arabia and United Arab Emirates have achieved the highest level of cessation.



Best-practice countries
Other countries
Not applicable

Countries with the highest level of achievement: *Austria, Brazil, Canada, *Cook Islans, Costa Rica, Czechia, Denmark, India, Ireland, Jamica, *Jordan, Kuwait, Luxembourg, Mexico, Netherlands, New Zealand, *Philippines, Reoublic of Korea, Saudi Arabia, Singapore, Slovakia, *Tonga, Turkey, United Arab Emirates, United States of America.

*Country newly at the highest level since 31 December 2018.

Fig. 7. Highest achieving countries implementing "offer to quit" measures *(5)*

Global best practices, which can inform cessation initiatives in the Region, are summarized in Table 1 below.

Table 1. Summary of best practices in implementation of cessation services

Country	Intervention
India	The government implemented the mTobaccoCessation programme, a cost-effective and accessible cessation service, to reach out to tobacco users across rural and urban India. mTobaccoCessation uses two-way messaging and interactive voice response between the individual seeking to quit and programme specialists in 12 languages, providing dynamic support for those who wish to quit. The programme's progress is monitored in real time through an online dashboard. In addition to the integration of brief advice in primary care, a toll-free quit line and a national framework for joint tuberculosis-tobacco activities, India has leveraged technological solutions to increase access.
Republic of Korea	In 2006, a national toll-free quit line was launched to strengthen and support the national cessation programme. In 2015, the National Health Insurance Service started to cover the cost of tobacco cessation consultation and cessation drug fees in hospitals and clinics across the country. An outreach service, known as Quit Bus, was introduced to help and encourage socially marginalized smokers, such as women and out-of-school youth, to quit. Regional smoking cessation centres were established to provide free intensive treatment for heavy smokers. The earmarking of tobacco tax revenue for quit services and providing cessation services in conjunction with other tobacco control initiatives are key factors that contributed to this success.
Senegal	The Ministry of Health and Social Action has created a national toll-free quit line offering trained counsellors who are able to give advice on smoking cessation and advise callers about treatments available in Senegal to help them quit. The National Tobacco Control Programme has developed a National Tobacco Control Strategic Plan 2018–2022, which details the cessation services available.
Ecuador	The Ecuadorian Ministry of Health has established a national training network, linking together training institutions responsible for on-the-job training of primary care providers. WHO and the Pan American Health Organization conducted a joint train-the-trainer tobacco cessation workshop for 55 national trainers in January 2018. Integration of brief tobacco interventions into primary care began in March 2018.

4. Gaps and challenges facing tobacco cessation in the Region

There is an urgent need to scale up tobacco cessation services in the Region given the high numbers of tobacco users and the disease burden tobacco use causes.

4.1 Tobacco use bans in public places

Implementation of WHO FCTC Article 14 has progressed slowly in the Region. There is a pressing need for governments and health organizations to reinforce existing laws. Poor compliance with existing policies will not lead to a reduction in prevalence. Ongoing political instability in many countries also acts to shift attention away from the tobacco epidemic *(33).*

While eight countries in the Region – Afghanistan, Egypt, Islamic Republic of Iran, Jordan, Lebanon, Libya, Pakistan and occupied Palestinian territory – have successfully implemented laws to permanently ban tobacco smoke in indoor public places, including workplaces, cafes and restaurants, other countries have opted for partial bans. Enforcing smoke-free laws remains a major challenge. Large numbers of adolescents report exposure to secondhand smoke in public places despite existing laws *(27).* To maximize impact, smoke-free laws must be applied without exemptions, including the provision of designated smoking areas.

National efforts in the Region vis-a-vis coronavirus disease 2019 (COVID-19) showed that a multisectoral approach with strong support from relevant national authorities, combined with effective public awareness campaigns, could ensure smoke-free policies are enforced successfully. Once a high level of compliance is achieved, smoke-free laws become self-enforcing *(15).* Positive policy implementation needs to be maintained, and governments must remain vigilant about industry efforts to interfere in health policy (e.g., by undermining smoke-free laws, claiming that these policies economically harm businesses and the hospitality industry, and seeking exemptions from bans for e-cigarettes and heated tobacco products) *(27)*.

A public health survey compiled in Alexandria, Egypt showed that public opinion supports the development of stricter smoke free laws *(38)*. Analysis of data released by the Global Agricultural Trade System indicated that for many low-and middle-income countries, the higher the rate of exposure to worksite smoking bans, the better the odds for tobacco cessation *(39).* To achieve the desired results of the MPOWER strategy, governments in the Region need to execute and enforce smoke-free indoor legislation in all public places and on public transport. That a comprehensive tobacco control approach is key to reducing prevalence has been proven by the examples of Brazil and Turkey *(15)*: uniform implementation in the Region must be further promoted *(39, 40)*.

4.2 Behavioural and pharmacological tobacco cessation interventions

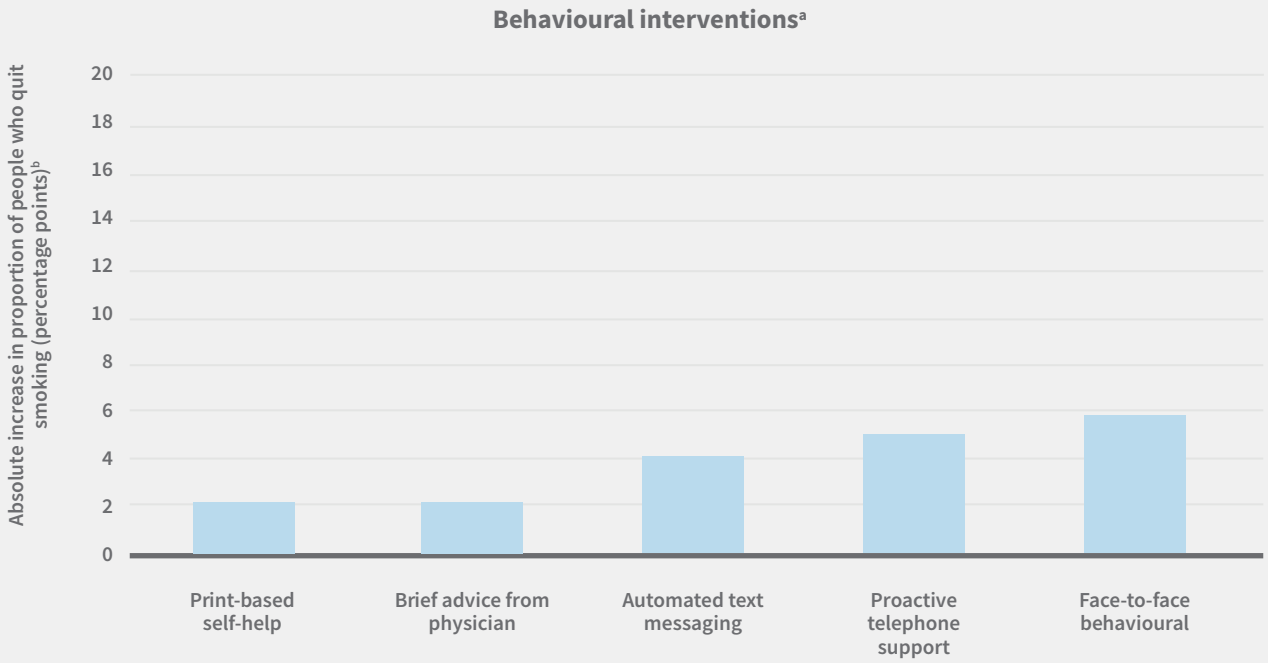
Over 60% of tobacco users have expressed the wish to quit. Without support, however, only 4% succeed.

Evidence based cessation assistance can double a tobacco user's chance of quitting *(15)*. Interventions can be behavioural and/or pharmacological. Brief behavioural advice in primary health care facilities is an effective yet low-cost measure that has the potential to reach large numbers of tobacco users. The role of hospitals and other medical institutions is also crucial in promoting healthy behaviour in the community, and health professionals in particular can play an important role in offering help to quit. Evidence has shown the effectiveness of cessation advice and cessation medications, such as NRTs and non-nicotine pharmacotherapies, given by medical doctors. Health professionals such as dentists, pharmacists, midwifes, psychologist, nurses and pediatricians can also help highlight high-risk disorders and complications due to smoking. Implementing strategies which are designed to increase the assessment and documentation of tobacco use, and routine provision of cessation advice, can double long-term quit rates *(41)*.

Using existing infrastructures such as the primary health care system to promote cessation is feasible and affordable and aligns with Article 14 of the WHO FCTC guidelines which calls for stepwise national tobacco cessation systems is to be developed rapidly and cost-effectively *(15)*. Unfortunately, health professionals in the Region lack adequate training to assess and provide advice for tobacco cessation *(42)*. A study using GATS data found that fewer than 50% of smokers who interacted with health care providers were screened for tobacco use or offered advice to quit *(15, 43)*. The findings underline the importance of providing health professionals with specific training, which should be integrated into primary care disease prevention and control programmes, on tobacco cessation techniques as part of medical, nursing and dental curricula. Identification of the smoking status and the provision of brief intervention strategies should be routinely performed as part of each health service contact. More than 80% of tobacco users can be reached annually if brief advice is integrated into already existing health care systems, representing a huge opportunity in terms of cessation services *(15)*.

Toll-free quit lines, as well as text messages and innovative, easily accessible tools using artificial intelligence, are a cost effective and comfortable way to respond to the needs of tobacco users seeking cessation advice. In low- and middle-income countries where a lack of infrastructure leads to poor access to cessation interventions, artificial intelligence and mcessation in general can bridge existing gaps *(15, 33)*. Using quit lines can increase the absolute quit rate by 2–4 percentage points, which translates into a doubling of people's chances of successfully stopping tobacco use. Proactive quit lines that provide follow up further increases this success rate **(Fig. 8)**. Text message interventions can also significantly increase quit rates *(44, 45)*.

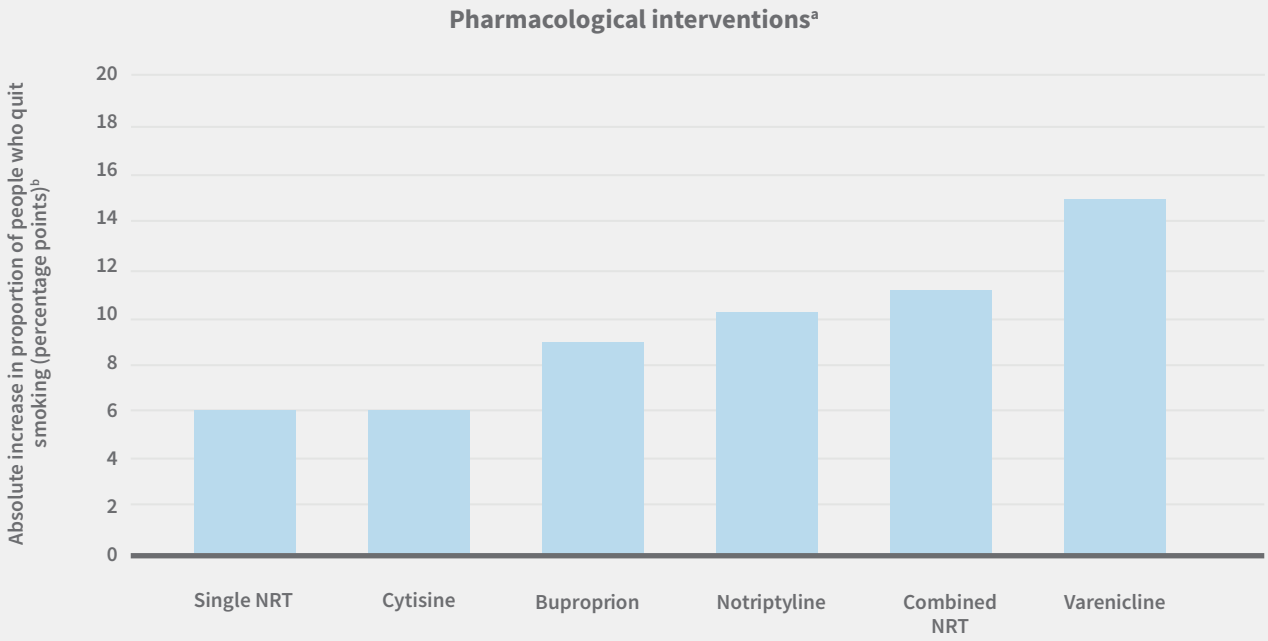
Pharmacological interventions can be divided into medications containing nicotine replacement and medication with no nicotine replacement. The latter treat tobacco withdrawal symptoms. **Fig. 9** shows the effectiveness of different pharmacotherapies. The combination of more than one NRT can lead to better outcomes.



[a] Each bar represents the findings of a meta-analysis and the strength of evidence associated with each study will vary.
[b] This represents the "projected percentage point increase in 6–12-month abstinence compared with no intervention". The authors adjusted the published percentage point increase in 6–12-month abstinence to allow for direct comparison between each intervention where the meta-analyses did not use a comparator equivalent to "no intervention". Assessments were based upon the published effectiveness of the comparison intervention through a consensus.

Fig. 8. Increased proportion of people who abstain from smoking for 6 months or more due to a specific behavioural intervention *(15, 46)*

Providing tobacco cessation support and behavioural interventions in non-health care settings by trained non-health care providers should also be considered, especially when evidence suggests tobacco users are better served by the provision of brief advice and personal counselling.



[a] *Each bar represents the findings of a meta-analysis and the strength of evidence associated with each study will vary.*
[b] *This represents the "projected percentage point increase in 6–12-month abstinence compared with no intervention". The authors adjusted the published percentage point increase in 6–12-month abstinence to allow for direct comparison between each intervention where the meta-analyses did not use a comparator equivalent to "no intervention". Assessments were based upon the published effectiveness of the comparison intervention through a consensus.*

Fig. 9. Increased proportion of people who abstain from smoking for 6 months or more due to a specific pharmacological intervention *(15, 46)*

4.3 Affordability of pharmacological interventions

Affordability of NRTs is a key factor. Since 2016, the number of countries providing NRTs decreased to 45. While in high- and middle- income countries the costs of NRTs is lower than the costs of smoking, this is not the case in low- and lower middle-income countries where NRTs are often more expensive than cigarettes *(24)*. Though not commonly accessible, NRT as a cessation tool is relatively affordable compared to the costs of smoking. Cost-coverage of NRTs is an important tool that governments in the Region should consider when trying to expand access to effective cessation tools.

Two forms of NRT, nicotine gum and nicotine patches, were added to the WHO model list of essential medicines in 2009 yet only six countries in the Region currently include NRTs in their national essential medicines list *(15, 33)*. More countries need to do so, thus increasing the chances of NRTs being cost covered by national health insurance. Evidence shows that payment for any kind of cessation support creates a major barrier to tobacco users taking advantage of cessation measures. Key to success is therefore not only the availability of cessation services and medication, but partial, and at best full, full cost coverage *(47, 48, 49)*.

4.4 Implementation of graphic health warning to support tobacco cessation

Placing toll-free quit line numbers on tobacco packaging or promoting them through mass media campaigns has been successful in terms of promoting cessation and reaching a large number of tobacco users *(50).* Accurate and prominent warnings on tobacco products encourage tobacco users to think about quitting and increases the chance of cessation *(51).* Yet only four countries in the Region – Egypt, Islamic Republic of Iran, Saudi Arabia and United Arab Emirates – have integrated quit line information on packaging. No low-income countries with national free quit lines in place have incorporated quit line numbers on graphic health warnings or in mass media campaigns *(15).*

4.5 Synergetic effect of WHO MPOWER measures

To strengthen tobacco cessation, it is important to understand the synergetic effect of WHO MPOWER measures that support cessation.

MPOWER - how can each measure support cessation? The synergetic effect

M (monitoring) – Monitoring and evaluating quality, effectiveness, reach, impact and cost of tobacco cessation services will help improve evidence-based and cost-effective tobacco cessation interventions *(52).*

P (protect people from tobacco smoke) – Creating smoke free environments encourages smokers to reduce consumption, try to quit and at best remain smoke free *(15).*

O (offer help to quit tobacco use) – Brief cessation advice in primary care settings, national toll-free quit lines and pharmacological therapy that includes NRT are proven to be cost effective and improve the chances of successfully quitting *(53).*

W (warn about the dangers of tobacco) – Significant evidence shows that accurate and prominent warnings encourage tobacco users to consider quitting *(15, 54).*

E (enforce bans on tobacco advertising, promotion and sponsorship) – Bans on tobacco advertising, promotion and sponsorship decrease tobacco use by decreasing sales and consumption *(55, 56).*

R (raise taxes on tobacco) – The single most effective tobacco control measure: higher tobacco product prices reduce affordability, leading to less demand and consumption. Earmarking tobacco tax revenue for cessation services has been a great success in the Republic of Korea *(15).*

4.6 Tobacco cessation interventions for vulnerable groups

One of the greatest challenges facing tobacco cessation is to find practical ways to reach as many tobacco users as possible. Every cessation initiative in the Region needs to consider social norms related to gender, age, culture, religion, educational background and socioeconomic status, factors that can deeply influence an individual's experience with tobacco, including quitting *(15).* To effectively deliver tobacco cessation intervention, vulnerable risk groups need to be addressed.

Tobacco use in the Region is concentrated among males, with tobacco use rates among men aged 15 years and above estimated to be 33% *(3).* There is evidence, however, that tobacco use is increasing dramatically among young people, people with a low socioeconomic status, poor education and the rural population *(15)*. Studies have shown that established smoking cessation initiatives in the Region are mainly directed towards adults, and cessation efforts targeting women, adolescents and young adults are lacking.

Cessation initiatives with target group involvement in their design and implementation tend to be more successful than non-participatory interventions *(57).* Future tobacco cessation interventions should be standardized to reach a wide range of the Region's population, and be delivered through mass media and school-based programmes targeting high-risk adolescent groups *(58).* These cessation interventions should also aim to educate females who are being targeted by tobacco companies under a false message of liberty and equality *(59).* Treatment studies have shown that women are less likely to achieve long term abstinence than men *(15)*, and are less likely to be asked about their tobacco use status and offered brief advice at primary care services, possibly due to health workers' imbibing of gender stereotypes *(60, 61).*

Key points

- involving target groups;
- considering people with low socioeconomic status and the poorly educated;
- providing risk group-specific cessation approaches and education material; and
- applying psychotherapeutic approaches for those with mental illness.

5. Moving forward in the Region

5.1 Improving tobacco cessation interventions

Successful cessation is key to lowering the prevalence of tobacco use and reducing tobacco related diseases, deaths and health care costs *(15)*. A structured and evidence-based approach combines population- and individual-based interventions to create a synergetic effect. Providing access to proven cessation treatments and methods, and creating awareness of the need for cessation, is necessary in order to decrease the current number of 1.3 billion adult tobacco users worldwide *(5)*. Ideally, cessation programmes should be integrated in primary health care systems. Because tobacco dependence is a chronic addiction with a high relapse rate – smokers make on average 30 attempts to quit before they succeed *(62)* – repeated interventions are needed.

Such interventions are best done when patients visit a primary health care facility where they can be screened for tobacco use, advised to quit and provided with evidence-based treatment options *(63)*. Brief advice in primary health care facilities has the potential to reach a large number of patients and is cost effective given the facilities already exist *(64)*. Only 18 countries worldwide provide fully cost-covered tobacco cessation support in primary care facilities, and five countries in the Region – Bahrain, Jordan, Kuwait, Qatar and Saudi Arabia – are among them.

With an average coverage of 6.7%, cessation measures in the Region are significantly lower than the average global coverage of 32% *(27)* and have yet to achieve a major reduction in tobacco use prevalence. Several reasons, including political and economic instability in the Region and the impacts of the COVID-19 pandemic, have contributed to diminish policy success.

A multisectoral approach, stricter law enforcement and high compliance rates from all involved parties, as seen when 15 countries in the Region took the decision to temporarily ban water pipe use in public places during the COVID-19 pandemic *(15)*, are indispensable to securing higher success rates (Table 2).

Table 2. Overview of existing measures and possible new approaches

Public health	
Strategy	Method
Strengthen government	Create taskforces for tobacco control to support health ministries (e.g., the newly developed High Level Ministerial Group on the Control of Tobacco and Emerging Tobacco and Nicotine Products in the Eastern Mediterranean Region)
	Multisectoral approach with support from all relevant national authorities (e.g., governmental and nongovernmental organizations)
Monitoring and quality control improvement	Create a national/regional tobacco data base of tobacco users
	Record prevalence of tobacco use (all tobacco products)
	Integrate monitoring to track screening, treatment, quit rates and long-term follow up
	Increase scale, scope and frequency of monitoring of all risk groups/hard to reach populations (low-income, female, rural, low socioeconomic status, illiterate)
	Increase research and raise awareness of the dangers of alternative tobacco products such as e-cigarettes and HTPs
Best practices	Lessons learned from other public health campaigns (e.g., schistosomiasis, polio, hepatitis C, severe acute respiratory syndrome coronavirus 2) and tobacco cessation best practices
Decreasing tobacco accessibility	
Strategy	Method
Make tobacco less affordable and harder to purchase	Increase taxes to more than 75% of retail price, adjusted to inflation (27)
	Stricter laws or bans on sales to minors, with a minimum tobacco purchase age of 18 and higher penalties for violations
	Ban tobacco vendors from the periphery of educational institutions
	Increase surveillance of illicit cross-border trade
	Propose designated licensed retail points as sole tobacco vendors to replace ordinary over-the-counter sellers (e.g., designated alcohol retailers in Egypt)
Improving health system capacity	
Strategy	Method
Education of health care and non-health care professionals	Train health care professionals (e.g., doctors, medical assistants, pharmacists, nurses and health educators) on cessation support and treatment
	Non-health care providers should also be trained and considered for tobacco cessation interventions, especially in rural areas
	Advice on tobacco cessation should be given during routine care, usually talking only a few minutes
	Training should take place at convenient times (before office hours, during lunchtime, regular meetings or online trainings) and cover all forms of tobacco use and latest evidence on cessation and therapy (waterpipe cessation, novel tobacco products cessation)
	Training should be offered periodically
Reminder system for health professionals	Implement a system to remind health professionals to talk to patients about quitting during routine clinical care
	Hand out information pamphlets in pharmacies, clinics and dentists, with NRT starter kits if feasible
Referral	Create a system and provide information for tobacco users who are interested in quitting
Follow-up	Implement a follow-up process so patients receive tobacco treatment and cessation support
Primary care services integration	Integrate cessation into all primary care services
Reimbursement	Develop reimbursement practices for health care providers, e.g., by earmarking tobacco tax revenues for cessation services

Improving medical cessation coverage	
Strategy	Method
Pharmaceutical and NRTs	Prices for pharmaceutical/NRTs need to be less expensive than for tobacco Combine quit line counselling with medication provision, e.g. offering a two-week cessation starter kit *(47)* Cover partial costs of medication Promote the availability of pharmaceuticals/NRTs based on evidence
Raising awareness of cessation coverage	
Strategy	Method
Promotion of tobacco cessation	Social media campaigns (e.g., Twitter, Facebook, Instagram, TikTok; best practice: Myanmar and China) Promote cessation interventions during Ramadan to reach a large proportion of the population Target group involvement Real stories from former smokers as media campaign, such as WHO quitters diary Promote cessation success stories Develop media campaigns with influential people and celebrities such as sport stars, influencers and movie stars Media campaigns during big sporting or entertainment events such as the Football World Cup Awareness cards focusing on different risk groups Promote through radio, tv, billboards and newspapers to reach more people Education in high school and university campuses (on-campus cessation service centres) on the dangers of smoking and benefits of cessation
Providing evidence-based information	Myth buster campaigns (e.g., fighting the myth of HTPs being a healthy alternative) Avoid tobacco industry interference
Peer group	Tandem cessation programmes Quit buddy systems using Facebook, Instagram and Twitter Family and friends counselling
Improving cessation support strategies	
Strategy	Method
Quit line	Implement national toll-free quit lines by health ministries Create a schedule for follow-up calls to provide ongoing support Place the quit line number on graphic health warnings on tobacco products and mass media campaigns
mcessation and quit app	Implement mcessation and quit apps to reach a broad population, incorporating positive reinforcement, e.g., the amount of money saved each day Implement push messages, e.g., awareness and follow-up messages Establish long-term follow-up to record cessation progress Implement real time monitoring through an online dashboard Use artificial intelligence like Florence, the WHO digital health worker, to bridge infrastructure gaps
Visualize the health impacts of smoking	"Reface" smartphone app for smoking (c.f. "Reface" ageing app) Plain packaging

Implement a Quit Bus campaign	Reach people in rural areas who do not have access to mobile phones Encourage marginalized smokers to quit (e.g., women and out-of-school youth)
Cultural approach	Include faith-based organizations
Creating tobacco-free environments/workplaces	
Strategy	Method
Changing norms	Enforce laws for smoke-free public places, including cafés, restaurants, beaches, parks, workplaces, government and educational buildings, public transportation systems Create financial incentives for the construction of tobacco-free housing complexes Eliminate public smoking areas and visually identify smoke-free ones (like smoke free beaches and parks as recently introduced in Spain)
Improve effectiveness and acceptance	
Strategy	Method
Tailored cessation approach	Offer treatment to every smoker via a method they can access and are comfortable using Treatment does not have limits or barriers, ideally free clinics Ensure people are aware of the treatments available to them Adjust treatment to the level of nicotine dependence, withdrawal symptoms and smoking patterns Consider co-dependency and psychological distress in treatment plans
Positive reinforcement	Financial incentives in different forms (e.g., financed through tobacco tax revenue) *(65)* Reward programme for successful cessation (e.g. financial compensation, a day off – a common practice in hospitals in Germany) State reward programme if a successful cessation patient gets another family member or friend to participate in a cessation programme Create a bank programme promoting cessation in which money being saved daily can be deposited and secure a higher return over a short fixed period

5.2 Recommendations and innovative approaches

The tobacco epidemic will continue unless tobacco cessation measures are scaled up *(2)*. The high consumption rate of tobacco in the Region highlights the importance of cessation services as part of a comprehensive tobacco control package to reduce morbidity and mortality. Since cessation measure coverage at intermediate level is ineffective in reducing prevalence, measures must be taken to the highest level *(29, 30)*. Innovative approaches to overcome lack of access to medical services are on the rise in many countries and could be used to drive cessation services forward. Artificial intelligence is a novel solution for delivering cessation support in an easy, cost effective and anonymous way and could be an effective tool to improve health outcomes by encouraging tobacco users to stop their deadly habit. Florence, the WHO virtual health worker, helps people develop a personalized plan to quit and refers them to cessation services such as quit lines *(5)*. By providing brief advice, Florence uses an evidence-based method to promote cessation.

When both behavioural and pharmaceutical interventions are offered to tobacco users chances of cessation increase dramatically *(15)*.

To move forward in the Region concrete recommendations must be formulated and translated into action in ways that reach the highest number of tobacco users. These recommendations should be based on already existing evidence-based methods and could entail the following:

- **National toll-free quit line**
  - national toll-free quit lines must be comprehensively promoted in countries where they already exist so they reach a higher number of tobacco users, e.g., through graphic health warnings and mass media campaigns;
  - quit line counselling should be improved through regular training of personnel; and
  - countries in the Region with no quit line should implement one.
- **Integration of basic cessation advice into primary health care settings**
  - train health care workers to offer brief advice to patients.
- **Establish and promote mcessation**
  - regular text messaging to reach a higher number of tobacco users in the Region.
- **Ensure affordable and accessible NRT in countries where it is not fully cost covered**
  - NRTs should be added to the national essential medicines list.
- **Ensure affordable and accessible non-nicotine pharmacotherapies such as Bupropion, Varenicline.**

The prevalence of tobacco use in any form needs to be permanently lowered, with the long-term goal of ending the tobacco epidemic.

Eradication programmes for diseases such as polio serve as an example of the way a deadly burden can be drastically lowered when technical capacity and political will coexist.

Investing in proven cessation is an obligation under Article 14 of the WHO FCTC. Without cessation support, tobacco users will continue to bear the brunt of tobacco's harms (2). Continuing to promote cessation is essential.

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