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Review Article

Building on Success in Tobacco Control: A Roadmap Towards Tobacco-Free Oman (Perspective Review)

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Abstract

Tobacco use remains a leading cause of harm to public health. Despite nearly two decades of ratifying the WHO Framework Convention on Tobacco Control (FCTC), Oman is still striving to achieve the best practice approach in different FCTC measures. Current epidemiological data shows that the prevalence of tobacco use among adults in Oman is steadily increasing with time. This review highlights the progress that has been made in the various FCTC measures, as well as how Oman has the possibility to attain the best practice approach in the various FCTC measures, and even go beyond that by implementing policies that have the potential to achieve a tobacco-free Oman by 2040.

Keywords:
Tobacco use; tobacco endgame; Oman.

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Introduction

Tobacco consumption is a major public health epidemic that has devastating health and economic impacts at the national, regional, and international levels [1]. Globally, it is estimated that 1.3 billion people use tobacco, 80% of whom live in middle- and low-income countries. Every year, more than 8.7 million people die because of tobacco use, with over 7 million from direct tobacco causes and 1.2 million from exposure to second-hand smoke [1]. Although the global prevalence of tobacco consumption is declining, from 22.7% in 2007 to 19.6% in 2019 [2], the death-related burden of tobacco use is high in many countries and is expected to increase further in the coming decades [2]. Tobacco kills half of its users [1], and there is mounting evidence that it causes cancers, heart diseases, lung diseases, type 2 diabetes mellitus [3], and adverse pregnancy outcomes [4]. The direct and indirect costs of tobacco consumption are evident globally, with smoking-related disorders accounting for 5.7% of total health care expenditure globally [5].

Oman became Party to the World Health Organization's (WHO) Framework Convention on Tobacco Control (FCTC) in June 2005, which aims to reduce the burden of tobacco consumption in populations [6], [7]. Despite the progressive control measures Oman has taken to tackle the tobacco epidemic, there are still challenges that hinder the implementation of the best practice approach of different FCTC measures [8]. Current evidence shows that most of the disease burden in Oman is driven by a limited number of risk factors, such as smoking, alcohol misuse, obesity, having an unhealthy diet, and being physically inactive [8]. The Global Burden of Disease, 2019 report found that tobacco use is attributed to 1077 $^{8.7\%}$ deaths and 37636 $^{4.4\%}$ disability-adjusted life years (DALYs) in Oman [9]. Age groups 50 years and older have the highest percentage of tobacco-related mortality and DALY [9]. In 2016, the total monetary cost of tobacco use and second-hand smoke exposure in Oman was almost 1% of the total Gross Domestic Product (GDP), with active smoking accounting for 74.0% of the total cost and second-hand smoking accounting for 23.0% of the total cost [10]. Despite the low prevalence of tobacco consumption in Oman by international benchmarks, it remains a significant contributor to ill health [11]. The disease attributed to tobacco use is totally preventable and thus needs to remain a central focus for Public Health in Oman. Oman has the opportunity to give regional and global leadership by moving the focus from tobacco "control" to tobacco "endgame." This review will assess the progress in the implementation of the FCTC after 20 years of ratifying the Convention and identify opportunities for Oman to provide leadership to achieve a tobacco-free nation.

Trend of tobacco use in Oman.

Before 1970, smoking was banned in all enclosed public places and outdoor public places in Oman and enforced by public flogging and jail sentences [12]. However, these restrictions were relaxed, and smokers could smoke openly in public areas without fear of prosecution [12]. The prevalence of tobacco consumption in Oman has increased in recent years, raising concerns about its short- and long-term health consequences [13]. The estimated prevalence of "current tobacco smoking" in Oman in 2020 was 8.0%, with male prevalence being significantly higher than female prevalence, Table 1[11]. Furthermore, although it is banned in Oman, the adult prevalence of current smokeless tobacco use is 1%; 1.8% in males and 0.1% in females [14]. No data is available about the prevalence and extent of innovative tobacco products, such as e-cigarettes and e-hookahs, among adults in Oman, nor is there data on the prevalence of tobacco among different sociodemographic groups. The increase in tobacco prevalence is likely driven by the inadequate implementation and enforcement of a comprehensive tobacco control program that addresses the FCTC's demand and supply reduction measures [8]. The World Health Assembly established a global goal of a 30% reduction in relevant tobacco prevalence by 2025; however, available data indicated that Oman would not achieve this target [15].

Table 1. Estimate of current tobacco smoking prevalence in the last 30 days in Oman in 2000, 2010, and 2020 (age standardized rate)

	2000 (%)			2010 (%)			2020 (%)		
Variable	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**
Current tobacco use	7.6%	14.5%	0.7%	7.7%	14.9%	0.5%	8.0%	15.5%	0.4%
Current tobacco smoking	6.9%	13.2%	0.6%	7.0%	13.6%	0.4%	7.2%	14.0%	0.3%
Current cigarette use	NA	NA	NA	NA	NA	NA	6.1%	12.0%	0.1%

Source: The Global Health Observatory [12]

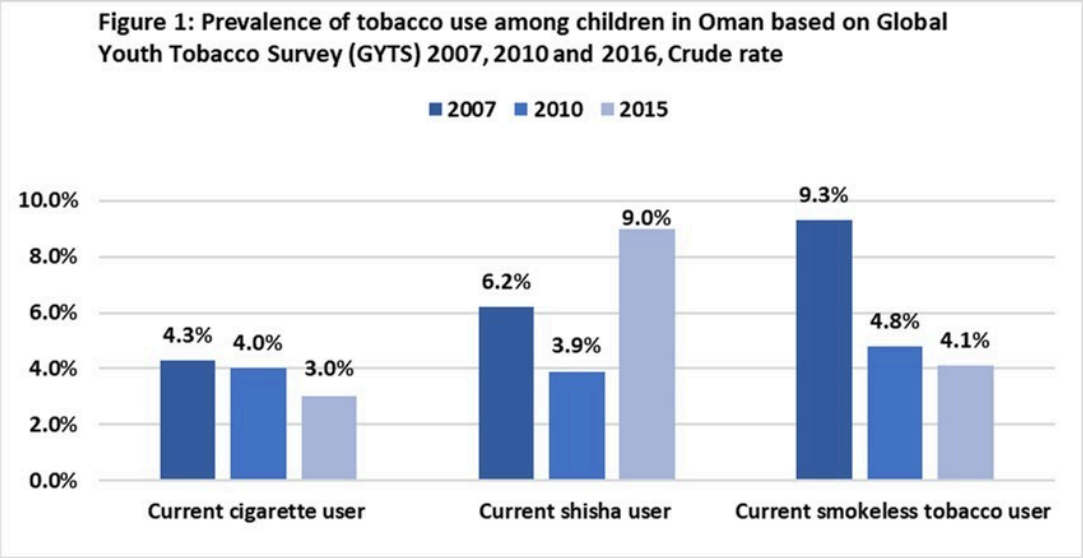


Figure 1. Prevalence of tobacco use among children in Oman based on Global Youth Tobacco Survey (GYTS) 2007, 2010 and 2016, Crude rate

The prevalence of tobacco consumption among children in Oman is worrying and demands prompt public health action [16]. According to the 2016 Global Youth Tobacco Survey (GYTS), the prevalence of current cigarette smoking, current shisha smoking, and current smokeless tobacco use in Oman was 3.0%, 9.0%, and 4.1% respectively, Figure 1. Electronic-cigarette use is also prevalent among children in Oman, at 5.9% [16]. Tobacco initiation is prevalent among children, and many do so before the age of seven. According to GYTS 2016 data, among those who used tobacco products, 20.9% of children under the age of seven tried cigarettes, 39.6% tried shisha, and 50.0% tried smokeless tobacco [16]. The most prevalent location for consumption of different tobacco products was at home [16], raising concerns about the role of the family in children's initiation and development of their smoking habit [17]. Despite the fact that the legal smoking age in Oman is 18 [18], current epidemiological data reveal insufficient implementation of existing regulations that prohibit the sale of tobacco products to minors, as well as a lack of public awareness of the effects of these products on one's health.

There is no safe level of tobacco exposure since all forms of tobacco use are hazardous [19]. The STEPS study from 2017 found that 9.7% of women and 11.4% of men reported being exposed to second-hand smoke (SHS) at work in Oman [20], despite the existence of smoke-free workplace regulation, Figure 2[18]. Almost one in every five adults $^{(16.9\%)}$ was exposed to SHS at home, with no significant sex differences, Figure 2[20]. The GYTS 2016 data showed that 12.8% of children were exposed to SHS at home, 33.0% were exposed to SHS in enclosed public venues, and 39.2% were exposed to SHS in

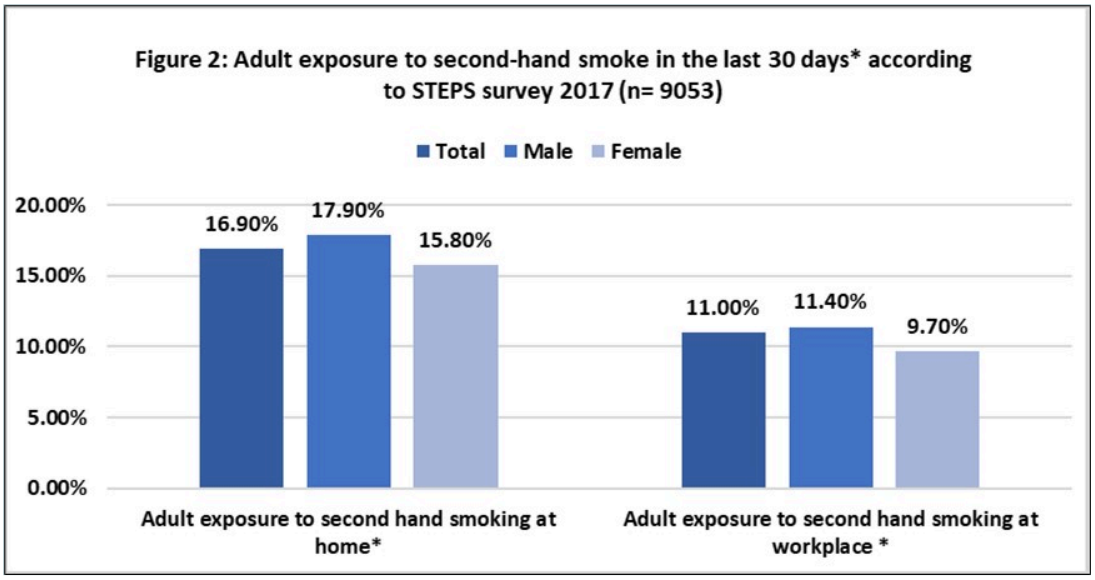


Figure 2. Adult exposure to second-hand smoke according to STEPS survey 2017 (n= 9053)

outdoor public spaces [16]. These figures demonstrate inadequate implementation and enforcement of smoke-free regulations at work and in enclosed public spaces.

Progress made in the WHO FCTC in Oman

General Obligations (Article 2)

There is no national comprehensive tobacco control legislation in Oman that aims to accelerate progress in implementing FCTC measures and reducing tobacco use, Table 2[21]. Even after almost two decades since Oman ratified the FCTC, the country is still striving to implement the best practice approach under the FCTC's core demand reduction and supply reduction measures [8]. Although Oman's national health goal for 2040 is to create a healthy society free of health risks and hazards [22], evidence on incorporating tobacco control measures into national health strategies or other national strategies is limited [22]. For the last decade, the resources allocated to further develop tobacco control initiatives in Oman have been limited.

Table 2. Summary of the Gaps in the Framework Convention on Tobacco Control (FCTC) measures

Measure (Article)	Gaps identified
General measure	
General obligation (2, 5)	• No national comprehensive tobacco control legislation
	• Tobacco interference is challenging, especially around corporate social responsibility (CSR)
Demand reduction measures	
Tobacco taxation (6)	• The total tax is less than 75 % of the total retail price.
	• Duty-free zone in Musandam is exempt from taxation.
	• No periodic increase in taxation above inflation and income growth rates.
	• No earmark code to direct tax revenues to tobacco control activities.

Table 2 (continued)

Measure (Article)	Gaps identified
Protect people from second-hand smoke (8)	• No 100% smoke-free environment in enclosed public places.
	• No tobacco control regulation covers private places.
Tobacco content and disclosure (9,10)	• No regular testing on the composition/additives or emissions of tobacco products.
	• Many tobacco additives that increase palatability and addictiveness are not prohibited.
Tobacco labelling packaging (11)	• Rotation of the health warning is not mandatory.
	• No available data on the impact of tobacco labelling.
Education, communication, & training (12)	• No comprehensive mass campaigns.
	• Tobacco harm is not included in the core undergraduate medical or para-medical curriculum.
	• No data is available about health education for school-age children.
Tobacco Advertising, promotion, & sponsorship (TAPS) (13)	• Corporate social responsibility is not banned.
	• No ban on point-of-sale displays
	• Gap of knowledge among the public about the tobacco industry's tactics to TAPS.
	• No available data on the monitoring and evaluation of TAPS
Offer tobacco control service (14)	• No comprehensive tobacco cessation program
	• No national guideline on tobacco cessation exists.
	• No free Quitline service available at national level
	• The tobacco cessation medication is not free of charge.
	• no clear plan to extend tobacco cessation to other health care sectors or disciplines.
Monitoring (20)	• No comprehensive national surveillance system.
	• Inadequate monitoring of different FCTC measures
Supply reduction measures and other measures	
Illicit trade (15)	• No licencing system exist for the sale of tobacco products.
	• No available data on the extent of illicit trade in Oman.
	• Presence of a free zone in Musandam may serve as potential for illicit trading.
	• No data on monitoring or law enforcement.
Sales to minors (16)	• No restriction on sale per location.
	• No minimum number of cigarettes per package is required.

Table 2 (continued)

Measure (Article)	Gaps identified
	• Sale through vending machines, or internet is not banned.
	• Limited data on innovative tobacco products.
Tobacco cultivation (17)	• Tobacco farmers are not supported with economically viable alternatives.
	• No data on number of tobacco farmers nor health impact of tobacco cultivation.
Liability (19)	• No criminal liability measures for any violations of that tobacco control legislation
	• No civil liability measures that are particular to tobacco control

Article 2.1 urges Parties to go beyond the FCTC recommendations and implement the most stringent tobacco control measures [7]; however, this is not the situation in Oman. In fact, some nations have already gone beyond the FCTC recommendations to seek to end tobacco use in their nations, with special emphasis on supply reduction measures [23]. Oman can achieve this target provided it has strong tobacco control legislation in place to facilitate the development, implementation, and enforcement of different tobacco control measures.

Tobacco interference (Article 5.3)

While tobacco industry interference has affected every nation, some governments have actively taken measures to defend their health laws, while others are still striving to do so [24]. Article 5.3 urges parties to protect their public health policies from the commercial and other vested interests of the tobacco industry [7]. This requires action from the whole government, not just the health sector, to eliminate the tobacco industry's interference [24]. In Oman, the tobacco industry is not permitted to participate in the multisectoral committee that develops public health policy or to accept aid in developing tobacco control policy [21]. However, the tobacco industry is not prohibited from advertising itself through corporate social responsibility (CSR) and sponsoring events, activities, and individuals [24].

Philip Morris' distributor, for example, has inked multiple Memoranda of Understanding with the public sector, including an exclusive sponsorship agreement supporting sporting events, providing training for Omani youngsters, and donating different health and education equipment and supplies to local public health and education institutions. American Tobacco, on the other hand, has offered a corporate social responsibility programme through "Enhance Oman" for individuals and non-profit organisations, including supporting a National Environmental Forum as well as donating to a tertiary care hospital in the city of Muscat [24].

Other strategies employed by the tobacco industry include establishing relationships with influential officials, utilising regional diplomatic missions to influence Omani policymakers, opposing smoking bans, delaying regulations to reduce the tar and nicotine content of cigarettes, circumventing a ban on tobacco advertising, promotion, and sponsorship, and offering voluntary codes as an alternative to effective regulations [25]. Data on tobacco industry tactics during the COVID-19 pandemic is not clear, although the global figure shows that the tobacco industry capitalised by donating personal protective equipment, testing kits, and investing in research and vaccine development [26]. According to the Global Tobacco Industry Index survey of eighty nations on how governments are responding to tobacco industry influence and protecting their public health policies from commercial and vested interests, Oman scored 16th with a score of 47 in the global tobacco index, Figure 3[24]. More action is required to ensure the implementation of Article 5.3, and this should be done as part of comprehensive tobacco control measures that address both demand reduction and supply reduction measures.

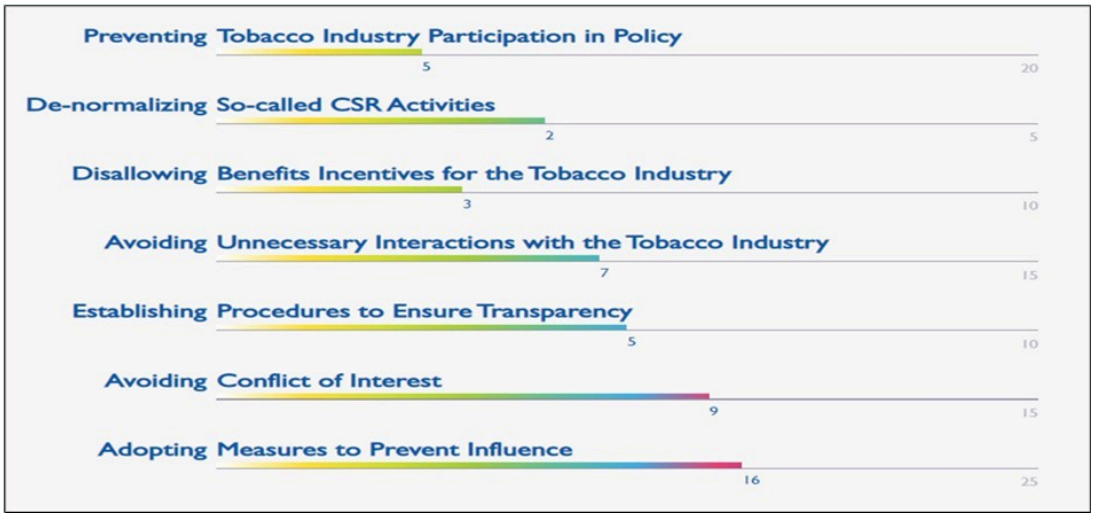


Figure 3. Global tobacco index indicators in Oman. The lower the score, the better the index. Source: Globaltobaccoindex, 24.

Price and tax measures to reduce the demand for tobacco (Article 6)

The tobacco tax system in Oman is a combination of import duty, excise tax, and value-added tax [21]. Nonetheless, the total taxes account for 63% of the total retail price, which is less than the WHO FCTC's recommendation of having taxes cover at least 75% of the total retail price [27]. There has been a drop in the trend of tax revenues since 2016 [27], for unknown reasons. Tobacco imported into the northern governorate of Musandam is exempt from tax by royal decree, but an administrative fee of 1% ad valorem is levied [27]. This may undermine the impact of the tobacco tax and create opportunities for a potential illicit tobacco trade. However, the recent introduction of the stamp system for cigarettes can help combat illegal tobacco trading [28]. The revenues from the tobacco tax are not earmarked to fund initiatives aimed at preventing tobacco use or other health promotion initiatives [27].

Protection from exposure to tobacco smoke (Article 8)

Smoking was outlawed at workplaces in Oman in 2008, followed by banning tobacco in enclosed public places in 2010 [29]. The existing smoke-free regulation allows for smoking and designated smoking areas within a non-smoking zone, both of which subject customers and staff to the dangers of second-hand smoke [21]. The existing smoke-free regulation is not in keeping with the "best practice" approach recommended in FCTC Article 8, which calls for a completely smoke-free environment in enclosed public places.

Current epidemiological data revealed that a significant proportion of adults $^{11.0\%}$ and children $^{33.0\%}$ were exposed to second-hand smoke in enclosed public places [16], [20]. This clearly demonstrates the inadequate implementation of regulation in places covered by the smoke-free regulation. Furthermore, there is insufficient public health awareness of the health effects of second-hand smoke exposure, which hinders efforts to de-normalize smoking in both enclosed and outdoor public places. Furthermore, adults $^{16.9\%}$ and children $^{12.8\%}$ are both exposed to second-hand smoke at home [16], [20]. This indicated insufficient efforts, such as voluntary smoke-free initiatives, to safeguard the public against SHS in private places. Enacting a total smoke-free policy without exemption is the best practice for protecting the public from second-hand smoke. This will help to further de-normalize tobacco use, encourage people who smoke to consider quitting, and have broader environmental and community benefits [30] .

Regulation of the contents and disclosure of tobacco products (Article 9 and 10)

The current tobacco content regulation governs the composition and emissions of different tobacco products [13], as well as the additives and flavours used in tobacco [18], [31]. However, there are several gaps that need to be addressed. First, there is no regular sampling or testing of the content and emissions of various tobacco products to ensure that the tobacco industry adheres to the standards [18]. Without consistent tobacco content monitoring, the standard regulation can easily be violated. Second,

the regulations governing flavours and additives permit the use of several chemicals that make tobacco products more appealing and addictive [31]. This contradicts the FCTC recommendations for the prohibition or limitation of the use of chemicals and additives that make them more palatable, addictive, or give the false impression that they have health benefits [7]. Third, there is no legal requirement for the disclosure of tobacco product information to the public or government authorities [21], [32].

Packaging and labelling of tobacco products (Article 11)

Health warnings on tobacco packaging are a cost-effective way to increase public awareness of the negative health consequences of tobacco use and reduce tobacco consumption [33]. The 2017 STEPS survey in Oman showed that almost one out of every two smokers considered quitting because of the warning label [20]. According to Article 11, the health warning message on tobacco packages and labelling should take up more than 50% but at least 30% of the main display space, preferably using a combination of culturally relevant text and pictorial warnings for maximum impact [33]. It is also recommended that the health warning message be periodically rotated, preferably every 12 to 36 months, to avoid message fatigue [33].

The "Omani Standard for Packaging for Tobacco Products" was introduced in February 2023 [34], replacing the previous 2001 national labelling regulation and the 2012 GCC Standardization Organization (GSO) Labelling of Tobacco Product Packs Act. The effectiveness of Plain Packaging is well established globally and can assist in reducing the appeal of tobacco products, making health-warning more effective, and removing misleading information on packaging [35]. The regulation sets standards for tobacco product labelling for all tobacco products and includes both pictorial and textual health warnings, along with advice to quit. Although the content of the health warning includes advice for quitting, it doesn't include information on Quitline service or cessation support, probably due to the absence of cessation service on a national scale. There is no recommendation around the rotation of health warnings on packaging; instead, changes may be made if the public's interest so demands [18].

Education, communication, training, and public awareness (Article 12)

FCTC Parties have an obligation to educate, communicate with, and train people about the dangers of tobacco production, consumption, and exposure as part of the human right to health and education [36]. To accomplish the overall objective of tobacco control measures, the three pillars of training, communication, and education should be further developed and implemented as part of comprehensive tobacco control initiatives [36]. According to the STEPS survey 2017 statistics, 48.1% of adults observed anti-tobacco smoking information on television or radio, and 39.4% saw it in a newspaper or magazine in the last 30 days [20]. The 2016 GYTS survey showed two out of every three children $^{(65.0\%)}$ saw or heard an anti-smoking media message on TV, radio, billboards, newspapers, or magazines [16]. On the other hand, one in every three children$^{39.0\%}$ saw or heard an anti-tobacco message at a sporting event, a fair, or a community gathering [16].

Several gaps have been identified on this measure. First, there has been no recent mass media campaign in Oman to raise public health awareness about tobacco use and exposure [8]. Furthermore, there is no data on incorporating the impact of tobacco use into medical or paramedical curricula as part of raising awareness among future healthcare personnel. Moreover, there is no credible resource addressing tobacco use and exposure in Oman. As the prevalence of initiation, current use, and second-hand smoke exposure rises, children and young adults merit special attention by directing public awareness activities to these vulnerable groups[16].

Tobacco advertising, promotion, and sponsorship (Article 13)

Article 13 mandates Parties to implement a comprehensive ban on all forms of tobacco advertising, promotion, and sponsorship ("TAPS") within five years of ratifying the FCTC [37]. To be effective, the ban must cover both domestic and cross-border advertising, promotion, and sponsorship. In Oman, TAPS is evident for both adults [20] and children [16]. According to the STEPS survey 2017, 10.2% of adults observed cigarette marketing in places where cigarettes are stored, and 7.0% noticed any cigarette promotion [20]. The GYTS 2016 revealed that TAPS was manifested in a variety of ways, including having items with cigarette brand logos $^{10.4\%}$, observing actors smoke while watching TV or films $^{69.1\%}$,

seeing cigarette advertisements at points of sale [34.6%], and being approached by a cigarette salesman for a free cigarette [8.9%][16]. The tobacco industry is not prohibited from promoting itself through corporate social responsibilities such as sponsoring sporting events, providing training for children, and donating various health and educational equipment [24]. Additionally, the tobacco industry uses social media to advertise products, oppose policies, and build a positive public image[38]. Some tactics used are to pay social media influencers to promote products discreetly. These tactics by the cigarette industry on social media violate cigarette marketing restrictions and interfere with health policy [38]. However, there is still a lack of understanding about the different tactics used by the tobacco industry to market or promote its products and improve its image. More efforts are required to close the identified gaps and reverse the pattern of tobacco use, particularly among vulnerable groups.

Measures concerning tobacco dependence and cessation (Article 14)

All forms of tobacco products are addictive [39], making it essential to have an effective tobacco cessation programme to assist smokers in their attempts to quit. The benefits of quitting smoking can be seen both immediately and in the long run [40]. Brief advice, in the form of asking, advising, assessing, assisting, and arranging [5As], from a healthcare professional can increase the quitting success rate by 30%, while intensive advice, including pharmacological and behavioural support, can increase the chance of quitting by 84% [41]. According to FCTC Article 14, nations that ratify the WHO FCTC are required to offer tobacco addiction therapy [42]. This can be done by incorporating tobacco dependence treatment into the nation's healthcare system [42]. As a "best practice approach" to assisting people in quitting smoking, the WHO FCTC recommends that each tobacco control program incorporate at least three different forms of cessation treatments: pharmacotherapy, cessation counselling at a primary care system, and a free Quitline.

According to the STEPS 2017 data, one in every two adults attempted to quit smoking in the previous year, and only one-third received smoking cessation advice from a healthcare provider [20]. There is no available data on the outcome of quit attempts. In Oman, there is no national tobacco cessation programme that satisfies the WHO FCTC minimum standard [21]. The current tobacco cessation services are confined to primary health care settings, and they frequently face staffing and medication availability issues [12]. Brief advice is not routinely provided at each patient encounter. The healthcare system record (Al Shifa) does not maintain track of each patient's smoking status, nor does it have a specialized page where healthcare providers keep a record of smoking advice. Despite ongoing attempts to train doctors and nurses in smoking cessation, there is no clear strategy in place to train personnel from other disciplines or extend the service to secondary or tertiary care facilities. Incorporating a nationwide comprehensive tobacco cessation programme within comprehensive tobacco control initiatives can help smokers quit and reduce their risk of negative health impacts associated with tobacco use [42].

Illicit trade in tobacco products (Article 15)

Article 15 of the FCTC recommends a licencing system for the sale of tobacco products in order to combat the illegal tobacco trade [21]. However, Oman does not have a licencing system in place for the sale of tobacco products, making it easy to purchase tobacco products everywhere [18]. Cross-border regulation remains challenging, especially in the free zone in Musandam, which may act as a gate for illicit tobacco trade [27]. In February 2023, a new tax stamp system was introduced in Oman, allowing customised digital stamps to be placed on manufactured cigarette products to monitor and track their movement from factory to consumer [28]. This system will prohibit the importation of manufactured tobacco products into Oman that do not bear effective tax stamps. Oman is yet to sign the Protocol on the Elimination of Illicit Tobacco Trade.

Sales to and by minors (Article 16)

Article 16 requires Parties to prohibit the sale of tobacco products to and by minors [7]. In Oman, the 2001 laws prohibit the sale of tobacco products to or by anyone under the age of 18 [18]. However, data from the 2016 GYTS revealed that a large proportion of children were ever or current users, raising concerns about the degree of compliance with regulations that prohibit the sale of tobacco products to and by minors [16]. There are no prohibitions on the sale of single cigarettes, vending machine sales, or internet sales, all of which make cigarettes more affordable and available to children and the

young generation [18]. Additionally, the law does not require age verification at the point of sale before purchasing tobacco products. The sale of tobacco products is not restricted by location, which may foster the spread of tobacco sales near residential areas and other public areas where children and young adults congregate [43]. Restricting sales per location and imposing licencing system can further reduce the availability of tobacco products and thus reduce tobacco use. Some countries raise the legal smoking age from 18 to 21 years in order to reduce the accessibility of tobacco products to young people and further de-normalize tobacco and nicotine products [23]. This will further reduce the prevalence of tobacco use among children and adolescents and improve the current and future health and well-being.

Tobacco cultivation (Article 17)

Tobacco leaf cultivation occurs in extremely restricted regions of Oman, but no initiatives have been taken to give farmers financially viable alternatives to switching to other crops [21]. There is insufficient data to safeguard farmers and the environment from tobacco cultivation and tobacco products.

Liability (Article 19)

In accordance with Article 19 of the WHO FCTC, Parties shall consider taking legislative action or advancing their existing legislation, as appropriate, to deal with criminal and civil culpability, including adequate compensation [7]. In Oman, there is no tobacco control law that contains measures for criminal responsibility for any violations of the tobacco control legislation, nor are there any tobacco-specific civil liability measures [21]. No one had filed a criminal or civil liability action, including proper compensation, against any tobacco business with respect to any ill health effects caused by tobacco use.

Research, surveillance, and exchange of information (Article 20)

According to Article 20, Parties are mandated to create national, regional, and international health monitoring systems, as well as to start, collaborate with, and support research on tobacco use and tobacco control initiatives [7]. However, no national surveillance system has been established in Oman to track tobacco use and tobacco control initiatives. Oman has participated in international surveillance aimed at monitoring tobacco use, either as an independent tobacco survey (GYTS) or as part of larger international surveys that monitor other risk factors (STEPS survey). Four cycles of the GYTS have been conducted in Oman, the most recent in 2016. Adult tobacco use was last measured in 2017 as part of the national STEPS survey.

Data showed that adult tobacco use is increasing, but no additional efforts have been made to investigate the sociodemographic and health-related features of tobacco users or to estimate the health consequences of tobacco use. Similarly, the 2016 GYTS revealed that a significant proportion of children were either regular or ever tobacco users; however, there is no recent data to compare with. Establishing a nationwide tobacco control surveillance and monitoring system that monitors tobacco use and the effectiveness of tobacco control policies on a regular basis helps to identify and address the gap in tobacco control measures. Allocating a certain portion of the tobacco control effort budget to monitoring and surveillance systems contributes to the progress of tobacco control initiatives.

Table 2 summarises the gaps in different FCTC measures in Oman. Overall, there is only partial implementation of various FCTC measures, which is primarily due to the lack of comprehensive national tobacco control legislation that aims to advance the implementation of the Convention at best practice and aid in monitoring and enforcing its various measures.

Projected changes in smoking prevalence and deaths attributable to tobacco products

In 2012, the SimSmoke tobacco control simulation model was carried out to project smoking prevalence and smoking-attributable deaths in Oman in the absence of policy change and then estimate the effect of tobacco control policies on those outcomes [44] . As demonstrated in Table 3 , increasing tobacco taxes over 75% of retail price is the single most effective way to reduce tobacco use, encourage quitting, and reduce premature mortality on a short-term (5 years) and long-term (40 years) scale [44]. Smoke-free environments and strong health warnings are the second and third most significant approaches to de-normalizing tobacco use in the community and thereby reducing tobacco prevalence and initiation on a short- and long-term scale. When these policies are combined, the prevalence of tobacco use decreases

Table 3. Policy impact on smoking prevalence and tobacco attributable premature death in Oman

Policy	Smoking prevalence (%)		Premature death averted at 40 years
	5years	40 years	N
Increase tobacco tax (>75% of retail price)	- 15.5%	-30.9%	32000
Smoke-free law	-13.0%	-16.0%	16000
Comprehensive cessation policy	-3.5%	-9.0%	8800
Strong health warning	-6.0%	-12.0%	12000
High-level mass media campaign	-3.0%	-4.0%	4000
Marketing ban with enforcement	-5.0%	-6.5%	6500
All policies combined	**- 38.0%**	**-48%**	**65000**

Sources: Abridged SimSmoke model, [44]

by 38% and 48% at the five-year and forty-year scales, respectively. In addition, incorporating all the MPOWER measures at best practice can avert 65,000 premature deaths [44].

Tobacco-Free nation ambition

While addressing the WHO FCTC standards at their best practices can assist in controlling the tobacco epidemic, it is not enough to achieve a smoke-free nation. The past decade has seen a worldwide policy transition from "tobacco control" to "tobacco endgame," with an overall aim to reduce smoking prevalence rapidly and permanently to minimal levels [23]. "Tobacco endgame" has been defined as the implementation of legislative measures intended to "permanently transform the structural, political, and social processes that perpetuate the tobacco epidemic to end it within a set period"[23]. Four policy categories have the potential to end the tobacco game: product-focused, user-focused, supply-focused, and institutional supply-focused. While some countries are striving to attain best practices in various FCTC measures, others have taken forward steps to end tobacco epidemics by implementing a set of endgame policies that will assist them in achieving their goal of a tobacco-free nation. The European Union (EU), for example, has recently formed a vision of achieving a tobacco-free Europe where less than 5% of the EU population uses tobacco by 2040 as part of Europe's Beating Cancer Plan [45]. In New Zealand, three measures are proposed to end tobacco use: restricted retail distribution, imposing very low nicotine content, and tobacco-free generation [23]. To reach the tobacco endgame, the nation should not only execute the WHO FCTC at its best but also go beyond the FCTC measures by implementing some of the potential endgame policies that will assist the nation in attaining its goal of being a smoke-free nation. However, several threats must be identified and managed appropriately to achieve the tobacco endgame[23]. These include, but are not limited to, the tobacco industry's influence in reshaping social norms regarding public health policies, the tobacco industry's involvement in corporate social responsibility, and the tobacco industry's use of phrases to ensure the longevity of their products, such as harm reduction products or the use of electronic nicotine delivery system (ENDS) as a method to quit smoking[23].

Table 4 illustrates the progress of different FCTC measures implementation in the Gulf Cooperation Council countries, which varies across GCC countries [46]. Oman is still striving to achieve best practices in core demand reduction and supply reduction measures despite nearly two decades of ratifying the FCTC. There is no apparent national or regional GCC ambition for ending the tobacco epidemic in their nation within a particular timeframe. Despite the overall goal of reducing tobacco prevalence by 30% by 2025, the present figures reveal that Oman will not be able to meet this target [15]. Working with national, regional, and global partners is crucial to addressing the strengths, weaknesses, opportunities,

Measure (FCTC Article)	Oman	Bahrain	Kuwait	Qatar	KSA[1]	UAE[2]
Demand Reduction Measures						
Monitor tobacco use (21)						
Protect people from second-hand smoke (8)						
Offer tobacco control service (14)						
Warn about the danger of tobacco use (11, 12)						
Enforce ban on tobacco APS* (13)						
Raise tobacco taxes (6)						
Supply Reduction Measures						
Eliminate illicit trading (15)						
Ban sales to minors (16)						

Table 4. Traffic Light Table of implementation of the FCTC measures in the Gulf Cooperation Council, based on WHO 2020 report

[1]Suadi Arabia; [2]United Arab Emirate; *Advertising, promotion, and sponsorship.
Green: achieved the highest level of the standard; Orange: partial implementation of policy; Red: no implementation of policy; Source [46]

and threats of various FCTC measures to achieve the intended objectives and potentially move the GCC region towards a tobacco-free region.

Moving forward

Oman has achieved significant progress in implementing different tobacco control measures in accordance with the FCTC; nonetheless, there are still gaps that need to be addressed to achieve a best practice approach in different FCTC measures. Oman has the potential to become a tobacco-free nation by 2040; however, achieving this goal will require comprehensive, multistage, multi-sectoral initiatives with a defined action plan. The first stage is enacting comprehensive tobacco control legislation that will aid in the implementation and enforcement of various FCTC measures at their best practice and consequently, help in reversing the tobacco epidemic.

Along with enacting comprehensive tobacco control legislation, certain areas should be prioritised. First, de-normalizing tobacco use at every opportunity by reducing the appeal of smoking to children and teenagers, increasing the social stigma associated with it, developing smoke-free spaces where youngsters congregate, and launching larger-scale smoke-free initiatives. In New York City, for example, smoking is prohibited in parks, beaches, boardwalks, public golf courses, sports stadium grounds, and pedestrian plazas [47]. However, several factors work against de-normalization of tobacco use in Oman, including the availability of tobacco from a wide range of retail outlets, the visible display of tobacco products at points of sale, and the false notion in some Omani societies that smoking is culturally acceptable. Addressing these external factors will ensure that society progresses towards a tobacco-free nation. Second, the protection of children from tobacco products must be prioritised in all policy objectives. Factors contributing to children's tobacco initiation include a lack of awareness, easy accessibility, and affordability of tobacco products, inadequate enforcement of the law, illicit trading, role models from parents, celebrities, and friends, and the tobacco industry's marketing tactics. The tobacco control strategy should place a specific emphasis on children because current tobacco users are more likely to develop lifelong smoking behaviours that are harmful to their health. Raising children's awareness as part of a holistic healthy lifestyle strategy in school and higher education can ensure that children and young adults are well-equipped with the knowledge required to embrace a healthy lifestyle. Third, engagement with partners from governmental and non-governmental organisations (NGOs) to implement different FCTC measures. Fourth, continuous surveillance and monitoring of various FCTC measures is critical for evaluating the strengths, weaknesses, opportunities, and threats and addressing

them accordingly. Last, allocating budgets towards tobacco control initiatives and research around tobacco use will ensure the continuity of effort to achieve the intended goals.

The second stage toward Tobacco-Free Oman is to adopt potential tobacco endgame policies tailored to local needs. This necessitates a shift from individual action to government policy to reform the tobacco market and places. Current epidemiological data revealed that tobacco use is prevalent among children and adults. Furthermore, tobacco content regulation permits several tobacco additives that make tobacco products more appealing and addictive. Increased retail outlet density also raises the chance of initiation and consumption. The tobacco tax system is still suboptimal with total taxes being less than 75% of the total retail price. Based on these issues, four potential endgame policies can be implemented in Oman. First, restrictions on tobacco retailer density, location, type, and licencing that substantially reduce tobacco availability. Evidence suggests that widespread availability plays a role in smoking initiation and relapse after quitting [23]. Research in New Zealand suggests that various tobacco outlet reduction strategies, including the elimination of 95% of current outlets, could help reduce smoking rates but would not achieve dramatic reductions in the near term[23]. Restrictions could include limiting the number, location, and opening hours of tobacco retailers, raising the cost of licences, and incentivizing retailers to give up tobacco licences[23]. Bans on product display and point-of-sale advertising could also be imposed as a condition of licencing. Minimum prices could be set to combat manufacturer discounts. Second, increase the legal age of tobacco use to 21 years to reduce youth initiation. Raising the legal smoking age to 21 could reduce the potential of high school students legally getting tobacco products for themselves, other pupils, and underage friends, reducing the secondary hazards of harm to juvenile brain development and early addiction [23]. Evidence from the Institute of Medicine's 2015 report in the United States indicates that enacting a Tobacco 21 (T21) policy will reduce tobacco use by 12% by the time today's teenagers reach adulthood [48]. Additionally, smoking-related mortality will be reduced by 10%. Smoking initiation will be lowered by 25% for 15–17-year-olds and 15% for 18–20-year-olds [48]. Third, mandating very low nicotine content (VLNC) for smoked tobacco products to make them non-addictive or minimally addictive [23]. Evidence suggests that VLNC policies will reduce cigarette smoking and significantly reduce tobacco harm; yet attitudes towards VLNC among smokers are mixed. In New Zealand, for example, the government has decided that by 2025, all smoked tobacco products supplied in the country must meet a VLNC standard [23]. The fourth possible endgame policy is to increase tobacco taxes. This policy will aid in the reduction of cigarette prevalence, the improvement of population health, the reduction of health inequalities, the reduction of health costs, and a significant increase in tax revenues [23]. However, this will necessitate annual tax increases of more than 20% above inflation. It is critical to emphasise that these potential endgame policies should be implemented in conjunction with other comprehensive tobacco control measures to achieve the intended objectives. The ultimate goal is to reverse tobacco prevalence and achieve < 5% prevalence by 2040.

Conclusion

Oman, like many other countries, has been affected by the tobacco epidemic, which has both short- and long-term health and economic consequences. While Oman has a low prevalence of tobacco use, it would be inaccurate to believe that it has complete control over the epidemic. Despite nearly two decades of ratifying the FCTC, Oman still has achieved partial implementation of various FCTC measures, owing to the lack of comprehensive tobacco control legislation that would aid in implementing and enforcing various FCTC provisions at their best practices. Because of the few decades' lag between the growth in tobacco prevalence and the health impact of tobacco use, the current rise in tobacco prevalence in Oman will manifest itself as increased mortality and morbidity related to tobacco use a few decades later. Oman has an opportunity to take the lead and not only achieve better control over the tobacco epidemic, by enacting comprehensive, multisectoral tobacco control legislation, but also to demonstrate its influence regionally across the Gulf by expressing commitment to the tobacco endgame. COVID-19 has shown how, with focus and comprehensive effort, we can manage an epidemic, and thus now is the time for Oman to focus on ending the tobacco epidemic.

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Salma AlKalbani conceived and designed this review and wrote and edited the final manuscript. Dr. Paul Kavanagh conceived and designed this review and provided feedback on the manuscript.

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