Original Article

A decade after introducing MPOWER, trend analysis of implementation of the WHO FCTC in the Eastern Mediterranean Region

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ABSTRACT

Background: Perfect implementation of the six priority policies advocated by the MPOWER package is the most important challenge for member states (MS) to reach tobacco control goals. **Methods:** A validated checklist set according to the WHO Report on the Global Tobacco Epidemic was filled out five times based on biannual reports from 2011 to 2019 for 22 MS in the Eastern Mediterranean Region. It contained ten topics including smoking prevalence and seven elements of six MPOWER policies and compliances resulting with possible maximum score of 37. High score indicates better implementation. **Results:** The total score for the region increased from 416 in 2011 to 509 in 2019. Six countries (27% of the region) had more than 75% of total score, whereas 11 countries were between 50% and 75% and five countries had <50% of total score in 2019. In all five reports, Iran was ranked first in the region even in 2019, when it witnessed a 2 point decrease. Iran held the first place alongside with Pakistan and Saudi Arabia with 32 points. The highest score in the indicators was related to the monitoring, reaching from 35 in 2011 to 59 in 2019. The lowest score increase in the indicators was related to the Smoke-free Policy compliance and the prevalence of consumption, reaching from 18 to 20 and 44–48, respectively, between 2011 and 2019. **Conclusions:** Although several remarkable achievements have been made regarding tobacco control goals, many policy implementation challenges remain and require urgent action by member states in the Eastern Mediterranean region.

KEY WORDS: Control, Eastern Mediterranean Region, FCTC, framework, tobacco

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INTRODUCTION

In the absence of effective tobacco control measures, consumption is likely to increase in many countries. Indeed, developing countries are facing an increased prevalence of tobacco consumption, but unlike developed countries have not yet faced the full burden of resulting illness and morbidity.[1] In the Eastern Mediterranean Region (EMR), according to the latest data, smoking prevalence is still increasing[2] and the waterpipe smoking as a new old fashion and hobby has many fans, especially in young adults.[3,4]

In 2008, the WHO introduced a package of measures under the acronym of MPOWER with the aim of assisting all 193 member state (MS) to prioritize tobacco control

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measures while implementing the various provisions of the WHO FCTC with the ultimate aim of reducing global morbidity and mortality associated with tobacco use.[5] This package focuses on six evidence-based measures that have documented the highest impact on tobacco consumption: Monitoring tobacco use and prevention policies; Protecting people from tobacco smoke; Offering help to quit tobacco use; Warning about the dangers of tobacco; Enforcing bans on tobacco advertising, promotion and sponsorship; and Raising taxes on tobacco.[6] Global experience has demonstrated that implementation of these measures provides a favorable outcome by reducing tobacco consumption and its harmful health effects.[7-9]

The WHO has published five reports on the Global Tobacco Epidemic in 2011, 2013, 2015, 2017, and 2019 on the activities of all countries in relation to these six policies.[10] In EMR, few studies showed heterogeneous levels of implementations of the six elements of MPOWER.[11-14] Lessons can be learned from 10 years of implementing the WHO FCTC and the demonstrated benefit in combating NCDs.[15-17] Cairney and Mamudu[18] reported that the ideal approach to tobacco control in a country requires specific policy processes: the department of health taking the policy lead; tobacco is "framed" as a public health problem; public health groups are consulted at the expense of tobacco control interests; socio-economic conditions are conducive to policy change; and the scientific evidence is "set in stone" within governments. No country can meet all these requirements in a short period and the gap between the expectations of implementing such programs and the reality of the current state of affairs is wide in many countries, particularly in EMR. A study[19] showed that the WHO FCTC implementation in the region did not improve drastically over the past years; there is failure of adopting stronger and more effective policies and reinforcing the already existing laws.

This study aims to make a quantitative trend with conducting a comparative performance of EMR countries after a decade in their implementation of MPOWER policies. It also highlights some of the challenges facing them in adopting such effective plans.

METHODS

This was a comparative cross-sectional study which was conducted in July–September 2019. The data from the WHO Report on the Global Tobacco Epidemic focus on the EMR (MPOWER 2011, 2013, 2015, 2017, and 2019)[6] were collected. A validated checklist which was designed in 4 previous studies[11-14] was used. The checklist contained 7 indicators with 5 options ranging from a minimum score of 0 to a maximum of 4, and 3 indicators ranging from a minimum score of 0 to a maximum of 3, resulting in a maximum possible score of 37. Each point for which data were not available was scored as 0. Consistent with the 4 previous studies, 2 trained raters administered the assessment (an intraclass correlation coefficient of 0.8 was calculated between these 2 raters). Data entry was done by the first rater independently and was checked by the second rater. The principal investigator (GH) randomly selected 2 or 3 of the entered data to monitor their ratings. The scores were summed and the rankings calculated. The checklist, together with its scoring and scale, is shown in Table 1.

RESULTS

The total score for the region in 2011 was 416, whereas in 2019, the trend rose to 509 with 93 points increase. There was a 25-point decrease from 2013 to 2015, and a 43-point increase from 2015 to 2017.

The highest score in the indicators was related to the monitoring, reaching from 35 in 2011 to 59 in 2019. The lowest score increase in the indicators was related to the prevalence of consumption, reaching from 44 in 2011 to 48 in 2019.

In all five reports, Iran has been ranked first in the region even in 2019, which had a 2-point decrease; Iran held the first place alongside with Pakistan and Saudi Arabia with 32 points.

The countries with the highest score increase were the UAE in 2019 and Lebanon in 2013 with 9-point increase, Kuwait and Oman with 7-point increase in 2013, Qatar and Saudi Arabia in 2019 and Pakistan in 2015 with 6-point increase, respectively.

Mean score of the region increase from 18.90 in 2011 to 23.13 in 2019.

In 2019, 6 countries (27% of the region) had more than 75% of total score, whereas 11 countries were between 50% and 75% and 5 countries had <50% of total score.

In 2017, 2 countries (9% of the region) had more than 75% of total score, whereas 16 countries were between 50% and 75% and 4 countries had <50% of total score.

In 2015, 2 countries (9% of the region) had more than 75% of total score, whereas 11 countries were between 50% and 75% and 9 countries had <50% of total score.

In 2013, 3 countries (14% of the region) had more than 75% of total score, whereas 11 countries were between 50% and 75% and 8 countries had <50% of total score.

In 2011, 2 countries (9% of the region) had more than 75% of total score, whereas 10 countries were between 50% and 75% and 10 countries had <50% of total score.

The comparison of the 10 main indicators is demonstrated in Table 2. Comparison of the scores flow from 2011 to 2019 is presented in Table 3. The scores of the 6 MPOWER indicators in 2011–2019 are listed in Tables 4-9, respectively.

Table 1: Check list of MPOWER score on tobacco control in Eastern Mediterranean countries based on WHO report

Indicators	Scores
Adult daily smoking prevalence	4
Estimates not available	0
30% or more	1
From 20% to 29%	2
From 15% to 19%	3
<15%	4
Monitoring: Prevalence data	3
No known data or no recent data or data that is not both recent and representative	0
Recent and representative data for either adults or youth	1
Recent and representative data for both adults and youth	2
Recent, representative and periodic data for both adults and youth	3
Smoke - free policies	4
Data not reported	0
Up to two public places completely smoke-free	1
Three to five public places completely smoke-free	2
Six and seven public places completely smoke-free	3
All public places completely smoke-free	4
Cessation programs	4
Data not reported	0
None	1
NRT and/or some cessation services (neither cost-covered)	2
NRT and/or some cessation services (at least one of which is cost-covered)	3
National quit line, and both NRT and some cessation services cost-covered	4
Health warning on cigarette packages	4
Data no reported	0
No warnings or small warnings	1
Medium size warnings missing some appropriate characteristics	2
Medium size warnings with all appropriate characteristics	3
Large warnings with all appropriate characteristics	4
Anti-tobacco mass media campaigns	4
Data not reported	0
No campaign conducted between January 2009 and August 2010	1
Campaign conducted with 1-4 appropriate characteristics	2
Campaign conducted with 5-6 appropriate characteristics	3
Campaign conducted with all appropriate characteristics	4
Advertising bans	4
Data not reported	0
Complete absence of ban print media	1
Ban on national television, radio and print media only	2
Ban on national television, radio and print media	3
Ban on all forms of direct and indirect advertising	4
Taxation	4
Data not reported	0
≤25% of retail price is tax	1
26%-50% of retail price is tax	2
51%-75% of retail price is tax	3
>75% of retail price is tax	4
Compliance bans on advertising	3
Complete compliance (8/10-10/10)	3
Moderate compliance (3/10-7/10)	2
Minimal compliance (0/10-2/10)	1
Not report	0
Compliance smoke-free policy	3
Complete compliance (8/10-10/10)	3
Moderate compliance (3/10-7/10)	2
Minimal compliance (0/10-2/10)	1
Not report	0
Total	37

NRT: Nicotine replacement therapy

DISCUSSION

This study found that during the last 10 years the implementation of the MPOWER package in EMR countries was considered important by governments and some achievements were done (score of the region increase from 416 in 2011 to 509 in 2019), but many challenges remain ahead in tobacco control programs (to reach 37 × 22 = 814 perfectly).

The Islamic Republic of Iran and Egypt continued its status and Saudi Arabia, Pakistan, UAE, and Qatar improved their scores. Many others tried to keep their better status and Somalia had no improvement. More tobacco control programs have been recently introduced in EMR but they need more time to realize their effectiveness. Here was no enough increasing trend score for Smoke-free Policy compliance and smoking prevalence so it seems that these activities were not effective completely to decrease tobacco consumption in EMR and protect people from second-hand smoke.

In 2019, only 6 countries (27% of the region) had more than 75% of total score, while 11 countries were between 50% and 75% and 5 countries had <50%. It was show that the numbers of country which have 75% of score were increased three times compare with 2017. It is notable that an increasing trend from 50% to 75% and more was seen in these countries. Few documents showed that about 50% of the European countries had more than 75% of scores.[20,21]

In 2019 UAE, Saudi Arabia and Qatar had improve their scores plus 9, 6, and 6, respectively, to show high achievements. In 2015, the Islamic Republic of Iran and Egypt continued to compare favorably with other countries in the region. In 2017, the score of Pakistan, Yemen, and Saudi Arabia were increased and Egypt is the fifth highest. The scores of Libya and Sudan decreased from 2015 to 2017. The scores of Djibouti, UAE, Bahrain, Oman, Syrian, Afghanistan, and Somalia all increased from 2015 to 2017. It is therefore important that EMR countries, particularly those with a drop in their scores, reexamine

Table 2: Trend of total score of 10 indicators of the WHO MPOWER by 5 reports in Eastern Mediterranean Region countries

Indicator	Total scores				
	2019	2017	2015	2013	2011
Smoking prevalence	48	42	25	39	44
Monitoring	59	51	36	35	35
Smoke-free policies	54	51	51	49	44
Smoke-free policy compliance	20	15	18	30	18
Cessation programs	59	60	60	57	54
Health warning on cigarette packages	53	53	50	48	35
Mass media campaigns	45	38	47	37	38
Advertising bans	73	73	67	63	66
Advertising bans compliance	49	41	31	55	34
Taxation	49	47	43	44	43
Total (region)	509	471	428	453	416

Table 3: Trend of MPOWER scores on tobacco control by 5 WHO reports in Eastern Mediterranean Region countries, ranked based on 2019

Country	Total scores				
	2019	2017	2015	2013	2011
Iran (IR)	32	34	33	31	29
Pakistan	32	31	27	21	20
Saudi Arabia	32	26	23	23	19
Egypt	29	25	29	28	28
Qatar	28	22	21	21	18
UAE	28	19	16	17	24
Yemen	27	27	22	17	17
Lebanon	25	24	24	26	17
Morocco	24	22	22	17	17
Bahrain	24	19	15	22	21
Iraq	24	18	15	18	15
Jordan	23	23	23	22	21
Kuwait	22	22	23	28	21
Gaza and West bank	22	20	21	25	20
Oman	22	20	15	21	14
Tunisia	22	18	20	21	17
Libya	19	18	23	22	21
Syrian Arab Republic	18	20	12	17	18
Afghanistan	17	19	12	13	9
Sudan	17	12	16	13	19
Djibouti	15	22	21	25	20
Somalia	7	7	4	6	7
Total (region)	509	471	428	453	416

Table 4: Trend of the score of Monitor tobacco use, M (MPOWER), by country and year, based on 5 WHO Report on the Global Tobacco Epidemic in Eastern Mediterranean Region

Country	Year				
	2019	2017	2015	2013	2011
Iran (IR)	4	4	3	3	3
Pakistan	4	4	3	1	0
Saudi Arabia	2	3	2	1	2
Egypt	4	4	3	3	2
Qatar	4	4	3	2	2
UAE	3	2	1	1	1
Yemen	2	3	2	1	1
Lebanon	4	4	2	2	3
Morocco	3	2	1	1	3
Iraq	3	2	1	2	1
Bahrain	2	2	0	1	1
Jordan	2	2	1	3	3
Gaza and West bank	2	2	3	2	0
Oman	3	1	1	3	2
Kuwait	4	4	3	1	2
Tunisia	3	1	1	1	2
Libya	1	1	2	2	2
Syrian Arab Republic	1	1	1	1	1
Afghanistan	2	0	0	0	0
Sudan	3	1	1	1	1
Djibouti	2	3	2	1	3
Somalia	1	1	0	0	0
Total	59	51	35	33	35

Table 5: Trend of the score of Protect people from tobacco smoke, P (MPOWER), by country and year, based on 5 WHO report on the global tobacco epidemic in Eastern Mediterranean Region

Country	Year				
	2019	2017	2015	2013	2011
Iran (IR)	4	4	4	4	4
Pakistan	4	4	4	4	4
Saudi Arabia	3	2	4	3	1
Egypt	4	2	2	2	3
Qatar	1	1	1	1	1
UAE	0	0	0	2	2
Yemen	3	3	3	1	1
Lebanon	4	4	4	4	2
Morocco	2	2	2	2	2
Iraq	2	2	2	1	1
Bahrain	1	0	0	1	1
Jordan	2	2	2	2	2
Gaza and West bank	4	4	4	4	3
Oman	1	1	1	0	1
Kuwait	2	2	3	3	1
Tunisia	1	1	1	1	1
Libya	4	4	4	4	4
Syrian Arab Republic	3	3	3	3	3
Afghanistan	4	4	2	2	2
Sudan	1	2	1	1	1
Djibouti	3	3	3	3	3
Somalia	1	1	1	1	1
Total	54	51	51	49	44

Table 6: Trend of the score of Offer help to quit tobacco use, O (MPOWER), by country and year, based on 5 WHO report on the global tobacco epidemic in Eastern Mediterranean Region

Country	Year				
	2019	2017	2015	2013	2011
Iran (IR)	3	4	4	4	4
Pakistan	3	3	3	2	2
Saudi Arabia	4	3	3	3	4
Egypt	3	3	3	3	3
Qatar	3	3	3	3	3
UAE	4	4	4	4	4
Yemen	2	2	2	2	1
Lebanon	3	3	3	3	2
Morocco	2	2	2	2	2
Iraq	3	3	3	2	2
Bahrain	3	3	3	3	4
Jordan	3	3	3	3	3
Gaza and West bank	2	2	2	2	2
Oman	2	3	3	2	2
Kuwait	4	4	4	4	3
Tunisia	3	3	3	3	2
Libya	3	3	3	3	2
Syrian Arab Republic	3	3	3	3	3
Afghanistan	2	2	2	2	2
Sudan	2	1	1	1	1
Djibouti	1	2	2	2	2
Somalia	1	1	1	1	1
Total	59	60	60	57	54

their performance in order to have stronger comprehensive national tobacco control plans that incorporate the six key policies of MPOWER.

Our finding show that the trend of score for monitoring tobacco use was the highest[22] compare with others and for pictorial health warning was second.[18] For advertising ban compliance, smoke free policy, mass media campaigns and advertising ban were 15, 10, 7, and 7, respectively. However, the trend of score for remain 4 indicators such as smoking prevalence, smoke free policy compliance,

Table 7: Trend of the score of Warn about dangers of tobacco, W (MPOWER), (health warning on cigarette packages + mass media campaigns) by country and year, based on 5 WHO report on the global tobacco epidemic in Eastern Mediterranean Region

Country	Year				
	2019	2017	2015	2013	2011
Iran (IR)	6	7	8	5	4
Pakistan	8	7	6	4	4
Saudi Arabia	7	5	4	5	3
Egypt	5	5	7	8	8
Qatar	7	3	4	4	2
UAE	4	6	6	3	3
Yemen	5	4	5	3	4
Lebanon	4	3	6	5	5
Morocco	4	5	2	2	5
Iraq	6	4	3	2	2
Bahrain	5	5	4	7	4
Jordan	6	6	3	3	5
Gaza and West bank	4	2	3	1	2
Oman	4	4	4	4	2
Kuwait	4	4	6	7	4
Tunisia	4	5	5	5	3
Libya	2	2	5	2	2
Syrian Arab Republic	2	2	2	4	1
Afghanistan	2	4	2	2	1
Sudan	2	2	4	2	3
Djibouti	5	4	7	5	5
Somalia	2	2	1	2	1
Total	98	91	97	85	73

Table 8: Trend of the score of Enforce ban on tobacco advertising, E (MPOWER), by country and year, based on 5 WHO report on the global tobacco epidemic in Eastern Mediterranean Region

Country	Year				
	2019	2017	2015	2013	2011
Iran (IR)	4	4	4	4	4
Pakistan	3	3	3	1	1
Saudi Arabia	4	3	1	1	3
Egypt	3	3	4	3	3
Qatar	4	4	3	3	4
UAE	4	4	4	3	4
Yemen	4	4	4	3	3
Lebanon	3	3	3	3	1
Morocco	3	3	3	3	3
Iraq	3	3	3	3	3
Bahrain	4	4	4	4	3
Jordan	3	3	3	3	4
Gaza and West bank	2	3	3	3	3
Oman	3	3	1	1	1
Kuwait	4	4	3	4	4
Tunisia	3	3	3	3	3
Libya	4	4	4	4	3
Syrian Arab Republic	3	3	3	3	4
Afghanistan	4	4	3	3	3
Sudan	3	3	3	3	4
Djibouti	4	4	4	4	4
Somalia	1	1	1	1	1
Total	73	73	67	63	66

cessation program, and tobacco taxation were not change significantly during a decade.

In 2006, Joossens and Raw[20] compared tobacco control scores in European countries through a checklist. European region has an acceptable implementation on tobacco control program compare with others.[21] The same methodology was followed previously in comparing 22 Eastern Mediterranean countries, in which the Islamic Republic of Iran, Jordan and Egypt received the highest scores.[19]

Furthermore, we found that some MS have achieved improved scores in tobacco control while some MS have failed to demonstrate substantial improvement. Of particular importance is the fact that tobacco taxation programs have been unsuccessful even in countries with high overall scores, such as the Islamic Republic of Iran which had an acceptable achievement in smoking cessation,[23] was unsuccessful in implementing a tobacco taxation program like 10 of 22 Eastern Mediterranean countries, during the past 10 years. The Islamic Republic of Iran as well as many other MS needs to increase taxation rates to improve the overall performance in effective tobacco control measures. Another example is Egypt which has high overall score yet it did not score well in smoke-free policies; consequently, more effective reinforcement measures need to be undertaken. At the same time, many policies remain unchanged such as the Graphic Health Warnings implementation with no progress in size and combating the waterpipe smoking or youth smoking initiation.[23-27]

This study has some limitations. The MPOWER report did not refer specifically to waterpipe and other forms of tobacco smoking. Political, social, and economic environmental variables that are supportive or act as barriers to tobacco control were not investigated in this study. These factors should be investigated in future studies. The interference by the tobacco industry to the implementation of the control programs is not well reflected in such surveys.

CONCLUSIONS

Although remarkable achievements have been gained over the past 10 years, many challenges remain ahead. To overcome them reinforcement of stronger measures should be adopted as part of comprehensive national plans that take in consideration all social and economic variables. A more favorable outcome can be achieved through greater coordination and cooperation of the countries of the region by drawing common control strategies as already experienced successfully in other WHO regions in their fight against this global epidemic.

Recommendation

The region has to work more on full implementation of FCTC to reach 814 score. Smoke-free policy compliance is the most challenging indicator for the region. Somalia and Sudan must consider tobacco control as a top priority in their health program. Some countries such as Iran, Kuwait, Iraq, and Libya must work more on tobacco taxation. For some countries such as Egypt, UAE, Oman, Kuwait, Libya, Afghanistan, and Djibouti mass media campaigns are

Table 9: Trend of the score of Rise taxes on tobacco, R (MPOWER), by country and year, based on 5 WHO report on the global tobacco epidemic in Eastern Mediterranean Region

Country	Year				
	2019	2017	2015	2013	2011
Iran (IR)	1	1	1	1	1
Pakistan	3	3	3	3	3
Saudi Arabia	2	2	1	1	2
Egypt	4	3	4	3	3
Qatar	2	1	1	1	2
UAE	3	1	1	1	2
Yemen	3	3	3	3	3
Lebanon	2	2	2	2	2
Morocco	3	3	3	3	0
Iraq	1	3	1	1	1
Bahrain	3	2	2	1	2
Jordan	4	4	4	4	3
Gaza and West bank	4	4	4	4	4
Oman	2	1	1	1	2
Kuwait	1	1	2	1	2
Tunisia	3	3	3	4	3
Libya	1	1	1	1	1
Syrian Arab Republic	2	3	0	3	2
Afghanistan	1	0	1	1	1
Sudan	3	3	3	3	3
Djibouti	0	2	2	1	2
Somalia	1	1	0	1	1
Total	49	47	43	44	43

important to work. Health warning on cigarette packages must change in Morocco, Gaza, and Syria.

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Conflicts of interest
There are no conflicts of interest.

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