

Quantitative comparison of WHO tobacco control measures: lessons from the Eastern Mediterranean Region

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Abstract

Background: In 2008, the World Health Organization (WHO) introduced a package of measures including 6 main policies (MPOWER) to control tobacco use.

Aims: This study aimed to perform a quantitative analysis of MPOWER in the WHO regions.

Methods: This cross-sectional study collected information in summer 2018 using pages 136–149 of the 2017 MPOWER report and a validated check list with 10 criteria, with a possible maximum score of 37. The scores were summed and presented in descending order for the 6 WHO regions.

Results: The highest mean score was recorded by the European Region (26.41), followed by: South-East Asia Region (25), Western Pacific Region (24.88), Region of the Americas (22.05), Eastern Mediterranean Region (21.40) and African Region (17.40). There were significant differences ($P < 0.05$) in the means.

Conclusions: Although many efforts have been made in the Eastern Mediterranean Region, many challenges to policy implementation and enforcement remain compared with other regions, and require urgent action by governments in the Region.

Keywords: Eastern Mediterranean Region, MPOWER, policies, tobacco control, tobacco use

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Introduction

The hazards of smoking make the need for implementation of tobacco control programmes undeniable (1). Tobacco use remains the leading preventable cause of morbidity and mortality worldwide, and the rates of morbidity and mortality due to smoking-related diseases are rising. The prevalence of smoking has shifted from developed to developing countries during the last few decades and is increasing (2, 3). The first and the most important strategy to confront this situation is the comprehensive implementation of tobacco control programmes (4,5). In this regard, the World Health Organization (WHO) negotiated the Framework Convention on Tobacco Control (FCTC) treaty in 2003, and so far, 181 countries have ratified it (6). In 2008, a package of measures was proposed for implementation, which included 6 main components: monitoring tobacco use and prevention policies; protection of people from tobacco smoke; offer of help to quit tobacco use; warning people about the dangers of tobacco; enforcing bans on tobacco advertising, promotion and sponsorship; and increasing taxes on tobacco (7). Global experiences have revealed that implementation of the above-mentioned strategies can effectively decrease the rate of consumption and consequences and complications of tobacco use (8–11). Some studies have shown that this type of analysis may pose a challenge to countries

to improve their tobacco control status (12,13). A study in 2015 revealed the 15 countries with the highest scores for tobacco control worldwide (14).

Lessons can be learned from 10 years of implementing WHO FCTC and the demonstrated benefit in combating tobacco use (15,16). Cairney and Mamudu (17) reported that the best approach to tobacco control requires specific policy processes, namely: the department of health takes the policy lead; tobacco is framed as a public health problem; public health groups are consulted at the expense of tobacco control interests; socioeconomic 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 there is a wide gap between the expectations of implementing such programmes and the actual situation in many countries, particularly in the WHO Eastern Mediterranean Region. In 2016 and 2017, 2 studies showed that WHO FCTC implementation in the Region had not improved greatly over the past 6 years (18, 19); countries had failed to adopt stronger and more effective policies and reinforce the existing laws.

In the present study, we performed a quantitative analysis of the above-mentioned report (11) and tracked the status of tobacco control programmes in the 6 WHO regions to create a challenge between countries to increase their performance.

Methods

This cross-sectional study in summer 2018 collected information regarding the status of tobacco control programmes implemented in different countries worldwide using pages 136–149 of the 2017 MPOWER report (11). Two tobacco control experts designed a checklist and 5 experts in the field approved the scoring system of the checklist (12–14). The checklist and the scoring system used are presented in Table 1. For assessment of the 10 criteria (6 policies plus 1, 2 compliance and 1 prevalence) included in the report of each country, a 0–4 point scale was used for scoring the 5-item criteria, and a 0–3 point scale was used for scoring the 4-item criteria. The maximum score was 37. The scores were entered independently in the data collection sheet by 2 individuals and a third party compared the values and confirmed their accuracy. The scores were summed and presented in descending order.

Differences in mean scores were analysed by *t* test and analysis of variance. $P < 0.05$ was considered statistically significant.

Results

The highest mean score was recorded by the European Region (26.41), followed by: South-East Asia Region (25), Western Pacific Region (24.88), Region of the Americas (22.05), Eastern Mediterranean Region (21.40) and African Region (17.40) (Table 2). There were significant differences ($P < 0.05$) between the means.

The top 23 countries for tobacco control, which had at least 85% of the total score (i.e., 32 out of 37) are shown in Table 3. African Region: Seychelles and Mauritius 33, 2 of 47 countries, 4.2% of region. Region of the Americas: Costa Rica 36, Brazil and Panama 35, Surinam and Colombia 34, Canada, Uruguay and Argentina 33, 8 of 35 countries, 22.8% of region. European Region: United Kingdom of Great Britain and Northern Ireland (UK) and Turkey 36, Portugal, Russia and Ireland 33, Romania, Estonia, Denmark, Spain and Norway 32, 10 of 53 countries, 18.8% of region. Eastern Mediterranean Region: Islamic Republic of Iran 34, 1 of 22 countries, 4.5% of region. South-East Asia Region: none. Western Pacific Region: Australia 35, New Zealand 34, 2 of 27 countries, 7.4% of region. Most of these countries (43%) were from the European Region.

The scores for the Eastern Mediterranean Region countries are presented in Table 4. Between 2015 and 2017, the total score increased by 43 points. The trends in MPOWER scores from 2011 to 2019 in Eastern Mediterranean Region countries are shown in Table 5. Tables for the other regions are in the Supplementary File.

Discussion

The Eastern Mediterranean Region has not done well in implementing tobacco control programmes compared to other regions, and was only better than the African Region. This issue should be addressed by health policy-makers in the countries of the Eastern Mediter-

anean Region and they should adopt more thorough and far-reaching plans. There was a direct association between higher scores and a reduction in tobacco use, which reflects the fact that implementation of tobacco control programmes in the community, has an impact on the general public and results in a reduction in tobacco use. Taxation, because of its low ranking, should be given more attention in the Eastern Mediterranean Region. Between 2011 and 2019, implementation of the MPOWER package in the Region was considered important by governments and some achievements were made (score increased from 416 to 509) but many challenges remain for tobacco control programmes to reach the maximum score of 814 (37 '22).

The Islamic Republic of Iran and Egypt maintained their status, and Saudi Arabia, Pakistan, United Arab Emirates (UAE) and Qatar improved theirs. Many others tried to maintain their status and Somalia had no improvement. More tobacco control programmes have been recently introduced in the Region but they need more time to realize their effectiveness. There was insufficient increase in smoke-free policy compliance and insufficient decrease in smoking prevalence; therefore, it seems that tobacco control has not been effective in decreasing tobacco consumption in the Region and protecting people from second-hand smoke.

All countries need to increase taxation rates to improve the overall effectiveness of tobacco control measures. For example, Egypt had a high overall score in 2017 but did not score well in smoke-free policies; consequently, more effective reinforcement measures need to be taken. The 2017 data show some challenges in implementing MPOWER policies in certain countries; for example, in Kuwait and Saudi Arabia there was a decrease in compliance with smoke-free policies. At the same time, other policies remained unchanged in the countries, such as the inclusion of graphic health warnings on cigarette packets. There has also been little steady progress in implementation of other policies, for example, raising taxation (20).

None of the countries scored full points in the tobacco control programmes; however, 23 countries (Seychelles, Mauritius, Costa Rica, Brazil, Panama, Surinam, Colombia, Canada, Uruguay, Argentina, UK, Turkey, Portugal, Russia, Ireland, Romania, Estonia, Denmark, Spain, Norway, Islamic Republic of Iran, Australia and New Zealand) had a superior status according to the 2017 MPOWER report. These 23 countries may act as a best model for others to implement and enforce tobacco control programmes. Comparison of scores of different countries can be beneficial since it creates a challenge for the health policy-makers to find weaknesses in their tobacco control programmes and improve them. In 2015, 15 countries acquired the highest scores included Panama and Turkey with 35 points, Brazil and Uruguay with 34, Ireland, UK, Iran, Brunei, Argentina and Costa Rica with 33, and Australia, Nepal, Thailand, Canada and Mauritius with 32 (14). Comparison between that study and the present study shows that 4 countries (Brunei,

Table 1 WHO MPOWER score on tobacco control check list based on WHO report 2017

Adult daily smoking prevalence	4
Estimates not available	0
≥30	1
20–29%	2
15–19%	3
< 15%	4
Monitoring: prevalence data	3
No known data or no recent data or data that are 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 2 public places completely smoke free	1
3–5 public places completely smoke free	2
6 or 7 public places completely smoke free	3
All public places completely smoke free	4
Cessation programme	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 not 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	1
Campaign conducted with 1–4 appropriate characteristics	2
Campaign conducted with 5 or 6 appropriate characteristics	3
Campaign conducted with all appropriate characteristics	4
Advertising bans	4
Data not reported	0
Complete absence or ban in print media	1
Ban on national television, radio and print media only	2
Ban on national television, radio and print media and some other 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 with bans on advertising	3
Complete compliance (8/10 to 10/10)	3
Moderate compliance (3/10 to 7/10)	2
Minimal compliance (0/10 to 2/10)	1
Not report	0
Compliance with smoke-free policy	3
Complete compliance (8/10 to 10/10)	3
Moderate compliance (3/10 to 7/10)	2
Minimal compliance (0/10 to 2/10)	1
Not reported	0
Total	37

NRT = nicotine replacement therapy; WHO = World Health Organization.

Table 2 Comparison of 6^a WHO regions by total MPOWER WHO score^b on tobacco control in 2017

Regions	Smoking prevalence	Monitoring	Smoke-free policies	Smoke-free policy compliance	Cessation programmes	Health warning on cigarette packages	Mass media campaigns	Advertising bans	Advertising bans compliance	Taxation	Total	Mean Scores 2017 ^c
EURO	108	191	114	94	164	172	103	151	131	172	1400	26.41 ± 1.2 SD
SEARO	23	32	31	20	30	33	30	31	19	26	275	25 ± 1.1 SD
WPRO	63	84	66	39	78	80	66	75	62	68	672	24.88 ± 1.4 SD
AMRO	73	97	94	60	103	93	53	68	54	82	772	22.05 ± 1.6 SD
EMRO	42	51	51	15	60	53	38	73	41	47	471	21.04 ± 1.3 SD
AFRO	119	87	84	21	106	96	51	120	50	83	818	17.40 ± 1.5 SD

^aThe full table of each region is in the Supplementary File.

^bThese are total scores for each of 10 indicators.

^cThe mean scores are total divided by number of countries in each region.

AFRO = African Region; AMRO = Region of the Americas; EMRO = Eastern Mediterranean Region; EURO = European Region; SEARO = South-East Asia Region; WPRO = Western Pacific Region; WHO = World Health Organization.

Nepal, Thailand and Mauritius) left and 12 new countries were added to this group. This may challenge countries to have more focus on tobacco control.

Since the scores were close and most countries had a 1-point difference, more precise implementation of each strategy and publishing a more thorough report may change the scores and consequently the ranking of countries in this respect. In 2017, all the regions had higher total scores compared with 2015: African Region +52, Region of the Americas +59, South-East Asia Region +35, European Region +109, Eastern Mediterranean Region +43 and Western Pacific Region +43. The highest mean score of 3.18 was for the South-East Asia Region followed by 2.05 for the European Region. It is notable that the South-East Asia Region had no country in the top 23 but it had the best improvement regionally. The largest improvement was in Timor Leste +13, Cambodia +12, El Salvador and Romania +9, and Uganda, Rwanda and Syrian Arab Republic +8, and largest reduction was in Cameron -7, Luxembourg -6, San Marino, Libya and Swaziland -5.

To catch up with the progress of other WHO regions, in the Eastern Mediterranean Region, stronger measures need to be implemented and reinforced as part of comprehensive national plans that take into consideration all social and economic variables. A better outcome can be achieved by greater coordination and cooperation between the countries of the Region to draw up common control strategies. This has already been done successfully in other WHO regions in their fight against the global tobacco epidemic, as for example, in the European Region (21). The leading position of European countries in this regard was also found in a study by Joossens and Raw (22). No such study has been done in any other region of the world except in the Eastern Mediterranean Region (18); thus, this may be an important research topic for further studies and the results can be used to create a challenge and competition between countries in an effort to achieve better ranking.

The present study had some limitations. The MPOWER reports do not refer specifically to waterpipe and other forms of tobacco smoking. Political, social and economic variables that support or act as barriers to tobacco control were not investigated in this study. These factors should be investigated in future studies. The interference of the tobacco industry with the implementation of the control programmes is not well reflected in such surveys. It is well known that the tobacco industry typically uses its large profits to expand its production, distribution and sale of its products as well to influence policy-makers in order to impede tobacco control programmes.

Conclusion

Although many efforts have been made in the Eastern Mediterranean Region, compared with other regions, many challenges to policy implementation and enforcement remain and require urgent action by governments. Comparison of scores of different countries in this respect can be beneficial since it creates a challenge for

Table 3 MPOWER WHO score on tobacco control for top 23 countries in 2017

Country	Smoking prevalence	Monitoring	Smoke-free policies	Smoke-free policy compliance	Cessation programmes	Health warning on cigarette packages	Mass media campaigns	Advertising bans	Advertising bans compliance	Taxation	Score	Difference from 2015a
Costa Rica	4	4	4	3	3	4	4	3	3	3	36	+3
UK	3	4	4	3	4	4	4	3	3	4	36	+3
Turkey	2	4	4	3	4	4	4	4	3	4	36	+1
New Zealand	3	4	4	3	4	4	4	3	3	3	35	+7
Brazil	4	4	4	3	4	4	2	4	3	3	35	+1
Panama	4	4	4	3	4	4	2	4	3	3	35	-
Suriname	3	3	4	3	3	4	4	4	3	3	34	+4
Colombia	4	4	4	3	3	3	4	4	3	2	34	+3
Australia	4	4	4	0	4	4	4	3	4	3	34	+2
Islamic Republic of Iran	4	4	4	3	4	4	3	4	3	1	34	+1
Seychelles	3	3	4	3	3	4	4	3	3	3	33	+5
Portugal	3	4	3	3	3	4	4	3	3	3	33	+5
Russian Federation	2	4	4	3	3	4	3	4	3	3	33	+3
Canada	4	4	4	3	4	4	1	3	3	3	33	+1
Mauritius	3	3	3	3	3	4	4	4	3	3	33	+1
Uruguay	4	4	4	3	3	4	1	4	3	3	33	-
Argentina	3	4	4	3	3	4	3	3	3	4	33	-
Ireland	3	4	4	0	4	4	4	3	3	4	33	-
Romania	2	4	4	3	3	4	3	3	3	3	32	+9
Estonia	2	4	1	3	4	4	4	3	3	4	32	+7
Denmark	3	4	1	3	4	4	4	3	3	3	32	+5
Spain	3	4	4	3	3	3	1	4	3	4	32	+2
Norway	3	4	4	3	3	3	4	3	3	3	32	+1

^aDifference between total score from 2015 and 2017.

UK = United Kingdom of Great Britain and Northern Ireland; WHO = World Health Organization.

Table 4 Eastern Mediterranean Region countries ranked by total WHO MPOWER score on tobacco control in 2017

Country	Smoking prevalence	Monitoring	Smoke-free policies	Smoke-free free policy compliance	Cessation programmes	Health warning on cigarette packages	Mass media campaigns	Advertising bans	Advertising bans compliance	Taxation	Total scores 2017	Difference from 2015
Islamic Republic of Iran	4	4	4	3	4	4	3	4	3	1	34	+1
Pakistan	3	4	4	1	3	3	4	3	3	3	31	+4
Yemen	4	3	3	1	2	3	1	4	3	3	27	+5
Saudi Arabia	4	3	2	1	3	3	2	3	3	2	26	+3
Egypt	2	4	2	0	3	4	1	3	3	3	25	-
Lebanon	2	4	4	1	3	2	1	3	2	2	24	0
Jordan	0	2	2	1	3	2	4	3	2	4	23	+4
Morocco	3	2	2	1	2	1	4	3	1	3	22	+1
Djibouti	4	3	3	0	2	4	0	4	0	2	22	+2
Qatar	3	4	1	0	3	3	0	4	3	1	22	+4
Kuwait	3	4	2	0	4	3	1	4	0	1	22	-
Bahrain	2	2	0	0	3	3	2	4	3	2	21	+6
West bank and Gaza Strip	0	2	4	1	2	1	1	3	2	4	20	-
Oman	4	1	1	0	3	3	1	3	3	1	20	+5
Syrian Arab Republic	0	1	3	2	3	1	1	3	3	3	20	+8
United Arab Emirates	2	2	0	0	4	3	3	4	0	1	19	+3
Afghanistan	0	0	4	2	2	3	1	4	3	0	19	+7
Iraq	0	2	2	1	3	2	2	3	1	3	19	+4
Tunisia	2	1	1	0	3	2	3	3	0	3	18	-
Libya	0	1	4	0	3	1	1	4	3	1	18	-
Sudan	0	1	2	0	1	1	1	3	0	3	12	-
Somalia	0	1	1	0	1	1	1	1	0	1	7	+3
Total	42	51	51	15	60	53	38	73	41	47	471	+43

Mean score of the Region = 21.40.
WHO = World Health Organization.

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

Country	Total scores 2019	Total scores 2017	Total scores 2015	Total scores 2013	Total scores 2011
Islamic Republic of Iran	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
United Arab Emirates	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
West Bank and Gaza Strip	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

WHO = World Health Organization.

the countries to achieve a higher rank. The Region has to work more on full implementation of FCTC to reach a score of 814. 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 programme. Some countries such as the Islamic Republic of 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 important. Health warnings on cigarette packages must change in Morocco, Gaza and Syrian Arab Republic.

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Comparaison quantitative des mesures de lutte antitabac de l'OMS : enseignements tirés pour la Région de la Méditerranée orientale

Résumé

Contexte : En 2018, l'Organisation mondiale de la Santé (OMS) a présenté un ensemble de mesures comprenant six politiques principales (MPOWER) en matière de lutte antitabac.

Objectifs : la présente étude avait pour objectif de réaliser une analyse quantitative du programme MPOWER dans les Régions de l'OMS.

Méthodes : La présente étude transversale a permis de recueillir des informations au cours de l'été 2018 en utilisant les pages 136 à 149 du rapport MPOWER 2017 et une liste de contrôle validée de 10 critères. Le score maximum possible était de 37. Ces scores ont été additionnés et présentés par ordre décroissant pour les six Régions de l'OMS.

Résultats : Le score moyen le plus élevé a été obtenu par la Région de l'Europe (26,41), suivie par la Région de l'Asie du Sud-Est (25), la Région du Pacifique occidental (24,88), la Région des Amériques (22,05), la Région de la Méditerranée orientale (21,40) et la Région de l'Afrique (17,40). On a observé une différence significative ($p < 0,05$) en termes de moyennes.

Conclusions : Bien que des progrès notables aient été réalisés dans la Région de la Méditerranée orientale, de nombreux défis entravant la mise en œuvre et l'application des politiques, par rapport aux autres régions, persistent et requièrent une intervention de toute urgence de la part des gouvernements de la Région.

مقارنة كمية لإجراءات مكافحة التبغ في منظمة الصحة العالمية: دروس مستفادة من إقليم شرق المتوسط

غلام رضا حيدري
الخلاصة

الخلفية: طرحت منظمة الصحة العالمية في سنة ٢٠٠٨ مجموعة من تدابير مكافحة تعاطي التبغ تضمنت ست سياسات رئيسية مجموعة (MPOWER) لمواجهة تعاطي التبغ.

الأهداف: هدفت هذه الدراسة إلى إجراء تحليل كمي لمجموعة السياسات الست في البلدان وفي أقاليم منظمة الصحة العالمية.

طرق البحث: جُمعت المعلومات في هذه الدراسة الشاملة لعدة قطاعات من الصفحات ١٣٦ إلى ١٤٩ من تقرير «مجموعة السياسات الست» لعام ٢٠١٧ باستخدام قائمة مرجعية مصدق عليها تحمل ١٠ معايير، وحصيلة نقاط قصوى محتملة بقيمة ٣٧. وُجمعت النقاط وعُرضت بترتيب تنازلي حسب أقاليم منظمة الصحة العالمية الستة.

النتائج: سجل المكتب الإقليمي لأوروبا أعلى متوسط نقاط (٤١, ٢٦)، وتلاه إقليم جنوب شرق آسيا (٠٩, ٢٥)، ثم إقليم غرب المحيط الهادئ (٨٨, ٢٤)، ثم إقليم الأمريكتين (٠٥, ٢٢)، ثم إقليم شرق المتوسط (٤٠, ٢١)، ثم الإقليم الأفريقي (٤٠, ١٧). وكان الاختلاف بين متوسط النقاط شاسعاً في هذا الصدد (القيمة الاحتمالية > ٠,٠٥).

الاستنتاج: على الرغم من الإنجازات المهمة التي تحققت في إقليم شرق المتوسط، لا يزال هناك الكثير من التحديات أمام تنفيذ السياسات، وهو ما يتطلب اتخاذ إجراءات عاجلة من جانب الدول الأعضاء.

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