Review Article

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Dentistry Section

Tobacco Control in India; A Myth or Reality-Five Year Retrospective Analysis Using WHO MPOWER for Tobacco Control

RAVNEET MALHI[1], RITU GUPTA[2], PATTHI BASAVARAJ[3], ASHISH SINGLA[4], VAIBHAV VASHISHTHA[5], VENISHA PANDITA[6], JISHNU KRISHNA KUMAR[7], MONICA PRASAD[8]

ABSTRACT

Introduction: Tobacco use is a major public health challenge in India and government of India has taken various initiatives for tobacco control in the country. India was among the first few countries to ratify WHO the Framework Convention on Tobacco Control (WHO FCTC) in 2004 and to make it easy, WHO introduced the MPOWER measures.

Objective: This study aimed to quantify the implementation of MPOWER tobacco control policies in India.

Materials and Methods: In this retrospective analysis information was collected from the WHO report on the Global Tobacco Epidemic Program, India for the year 2009, 2011 and 2013 using MPOWER and this analysis was based on the checklist which was designed previously by Iranian and international tobacco control specialists in their study on tobacco control and its cut-offs were set according to the scoring of key sections of the MPOWER 2011 report.

Results: In this study India was ranked by scores and these scores were obtained from each indicator for each activity. The highest scores were achieved in 2013 and there are marked increase in scores in health warning on cigarette packages but as far as the cessation programmes and taxation is concerned, there is decline in the progress.

Conclusion: MPOWER programmes are accepted in the India but there is considerable room for improvement as we are still far from the ideal situation.

Keywords: Cessation programmes, India, Prevention and control

INTRODUCTION

The most common preventable risk factor for premature morbidity and mortality is tobacco [1]. Its use is a supreme public health challenge which is presently causing over 3 million deaths yearly worldwide, and if current trends continue, the annual mortality will exceed 10 million by around 2030 [2,3].

Tobacco contains more than 4,000 chemicals including carcinogenic compounds and 400 other toxins and its cultivation was started 8,000 years ago. Europeans were the first who introduced tobacco and in India tobacco quickly established itself in the 17th century by Portuguese in Goa [4,5].

India is the second largest consumer of tobacco in the world, after China, with 275 million adults consuming different tobacco products. The prevalence of tobacco use among males is 48% and that among females is 20% [2]. Tobacco is used in a wide variety of ways: smoking, chewing, applying, sucking, gargling, etc. It is industrially manufactured either on a large scale or on a small scale, It may also be prepared by a dealer or by the user himself or herself [1,5].

So, with the growing evidence of harmful and hazardous effects of tobacco, the Government of India enacted various legislations and comprehensive tobacco control measures during mid 1970s [2].

The WHO Framework Convention on Tobacco Control (WHO FCTC) provides guidelines for the foundation for countries to implement and manage tobacco control. WHO introduced the MPOWER measures to monitor the tobacco control programs among the countries. "MPOWER is the only document which is strategic in nature, provides source of information on the spread of tobacco epidemic, as well as provides suggestions concerning specific actions for supporting the fight against this epidemic" [2,3].

The six evidence-based components of MPOWER are: Monitor tobacco use and prevention policies, protect people from tobacco smoke, offer help to quit tobacco use, warn about the dangers of tobacco, enforce bans on tobacco advertising, promotion and sponsorship, raise taxes on tobacco [6].

The package is intended to assist in the country-level implementation of effective measures for tobacco control programs, contained in the WHO FCTC. There has been number of global surveys conducted to monitor the implementation and success of tobacco cessation policies and programmes based on MPOWER strategy. The first such assessment was conducted by Joossens and colleagues (2006) in European countries and Heydari et al., in 2012 in Eastern Mediterranean countries using MPOWER [6].

But in India no study has been reported till date to quantify the improvement in tobacco control measures after implementation of MPOWER tobacco control policies. So, in the current study, tobacco control programs were assessed from 2009 to 2013 based on the six measures of MPOWER and reports by World Health Organization.

MATERIALS AND METHODS

The study was carried out to assess the implementation of tobacco cessation activities over the period of five years from 2009 to 2013 in India, based on MPOWER strategy. The information was collected from the WHO report of Global Tobacco Epidemic Programme, India for the year 2009, 2011 and 2013. This assessment was based on the checklist which was designed previously by Iranian and International tobacco control specialists in their study on tobacco control and its cut-offs were set according to the scoring of key sections of the MPOWER 2011 report [7].

According to the measures reported in the report, there were 7 questions with 5 options ranging from minimum 0 to maximum 4 scores, and 3 questions ranging from minimum 0 to maximum 3 scores. Each point, for which data was not available (NA), would be scored as 0. So, the total possible score was 37 (7x4 + 3x3) as shown in [Table/Fig-1].

The scores were compiled by one person who acted as rater and confirmed by two specialist persons who acted as supervisors. Data entry was done independently by the rater and was checked by the supervisors with the checklist. The scores were summed and the rankings were computed. The checklist, with its scoring and scale, is shown in [Table/Fig-1].

Indicator	Point scoring
Adult daily smoking prevalence	**(4)**
Estimates not available	0
30% or more	1
20%–29%	2
15%–19%	3
< 15%	4
Monitoring: prevalence data	**(3)**
No known data or no recent data or data that is neither recent nor 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
6–7 public places completely smoke-free	3
All public places completely smoke-free	4
Cessation programmes	**(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 1 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-sized warnings missing some appropriate characteristics	2
Medium-sized 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 in print media	1
Ban on national television, radio and print media only	2
Ban on national and some international 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 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 reported	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

[Table/Fig-1]: WHO MPOWER score on tobacco control based on WHO report [7]

RESULTS

In this study we found the changes in the scores over five years (2009-2013) which is based on the information collected from WHO report (2009, 2011 and 2013) on tobacco control using MPOWER [8-10].

In order to arrive at an accurate level for tobacco control, a comparison was done to create a strong incentive for tobacco control authorities in India to consider adapting more of MPOWER package policy in future.

In this study, India was ranked by scores and these scores were obtained from each indicator for each activity. [Table/Fig-2] shows the changes in the scores and after analysing the six main MPOWER measures, year 2013 got the highest scores in India.

In order to find the prevalence of tobacco use, WHO uses the MPOWER analysis. The point scoring system reveals that scores for adult daily smoking prevalence and monitoring the prevalence data remained unchanged i.e. 4 respectively in 2011 and 2013 which was increased by one point in 2009 for both the categories. Although scores remained same in 2011 and 2013 but the largest change in scores for India is attributable to smoking prevalence.

Civil society groups, media and other agencies play a vital role in raising public awareness of tobacco-related health issues and created a several policies e.g. prohibiting smoking in public places, banned tobacco advertisements, warning on cigarette packages etc.

As far as evaluation is concerned for these policies, we can see that there is marked increase in scores in health warning on cigarette packages from 01 in 2009 and 2011 to 04 in 2013 which helps to integrate the diverse components of a multifaceted programme where as the score increased from 2 in the year 2009 to 3 in 2011 but remained the same in 2013 in case of smoke free policies.

Beneficial effect of these efforts can be seen in anti-tobacco mass media campaign which were increased from 0 to 3 from 2009 to 2011, but decreased by one point in 2013 whereas scores for advertising bans, compliance with bans on advertising and compliance with smoke-free policy remained unchanged throughout three years with a score of 3, 2 and 2 respectively.

Despite overall high scores and increased total in 2013, India didn't score well as far as the cessation programmes are concerned, there is decline in the progress i.e. score one was observed in 2013 from a score of 2 in 2009 and 2011 respectively.

Indicator	Points		
	2009	2011	2013
Adult daily smoking prevalence	3	4	4
Monitoring: prevalence data	3	4	4
Smoke-free policies	2	3	3
Cessation programmes	2	2	1
Health warning on cigarette packages	1	1	4
Anti-tobacco mass media campaigns	0	4	3
Advertising bans	3	3	3
Taxation	3	2	2
Compliance with bans on advertising	2	2	2
Compliance with smoke-free policy	2	2	2
Total number	21	27	28

[Table/Fig-2]: Ranking of India according to WHO score on tobacco control [8-10]

Indian states were empowered to impose sales tax. But the prevailing tax system is not in accordance with the consumption pattern and we can observe this through the scores which were decreased from 3 in the year 2009 to 2 in 2011 and 2013 as there is no stability or consistency in the tax system being adopted for tobacco.

DISCUSSION

The prevalence of tobacco use in India is disparate and causes a massive burden of morbidity and mortality [11]. In the literature, evaluations of the effectiveness of anti-tobacco programmes are not equivocal. Results of evaluation of the programmes carried out among various countries in order to limit the use of tobacco. The past decade has seen a significant paradigm shift in tobacco-related policies that has led to a significant reduction of the use of tobacco in many countries [12,13].

It was found in the study done in Eastern Mediterranean Countries (EMR) by Heydari G et al., in 2013 that after two years of implementation of the MPOWER package in EMR countries, tobacco control programs in Iran have shown favourable results compared to other EMR countries. Some countries such as Kuwait, Lebanon, Oman, Saudi Arabia Gaza & West Bank have shown improvement in their status on tobacco control based on MPOWER analysis, but UAE and Sudan have seen a fall in their scores. The 10 indicator set increased from 411 in 2011 to 475 in 2013 and it was seen that after two years of implementing MPOWER policy in EMR countries, tobacco control programs are getting better overall [6].

Levy et al., in 2013 concluded in his study that highest-level MPOWER policies adapted from 2007 to 2010 will result in 15 million fewer smokers, and 7.4 million premature deaths will consequently be averted by 2050 [14] whereas Basu S et al., in India in 2013 found out that tobacco control and pharmacological strategies will reduce the cardiovascular diseases risk in India and concluded that smoke free legalisation and tobacco taxation would likely be the most effective strategy among a menu of tobacco control strategies [15].

National representative and reliable prevalence data on tobacco consumption are scarce. The prevalence of both smoking and chewing tobacco/pan masala varied significantly among different states in India. WHO estimated a prevalence of tobacco consumption of all forms, based on small scale studies conducted in the past and focused on smoking (not smokeless chewing) tobacco due to reported data limitations and we can assess that scores remained unchanged in 2011 and 2013 but there was progress by one point in 2009 for both the categories using MPOWER.

Effective tobacco control in the world has been achieved via multipronged strategies focusing on reducing the demand for tobacco products. Civil society groups, media, governmental and non governmental agencies play an important role in advancing public awareness of tobacco-related health issues and created several policies. Legislation lies at the very heart of any effective tobacco control programme [5,13].

The Government of India enacted various legislations and comprehensive tobacco control measures [5]. Beyond the specific legal provisions, legislation achieves two other broad social objectives. First, it is a means of raising awareness and a means of social mobilization. Second, legislation is seen, more fundamentally, as the most solemn expression and formal articulation of societal values.

It was found through this study that in India, after implementation of MPOWER package the tobacco control status has improved in 2013 as compared to 2009 by 7 points and individual indicator analysis also shows decline in scores of certain indicators like taxation and cessation programmes.

In 1975, the Government of India enacted the Cigarettes (Regulation of Production, Supply and Distribution) Act (The Cigarettes Act, 1975) that made it mandatory to display a statutory health warning on all packages and advertisements of cigarettes [5] and with this we could see the major change which came from the health warning on cigarette packages which were increased by four points as, the purpose of this warning was mainly to inform citizens of the harmful effects of smoking so that the demand for cigarettes would be reduced.

India consists of a large percentage of illiterate population, which can't understand english. To overcome this problem pictorial warnings have come and many countries now have implemented these warnings [16].

Health warnings on tobacco packages are one of the most cost-effective way of communication and among them pictorial warning which depict the harmful effects of tobacco use can bring about behavioral changes like quitting and reducing the tobacco consumption. This change can be seen in the study done by Raute LJ et al., in which positive response was shown by general population for implementation of pictorial warnings on tobacco products and majority of the people strongly agreed on strong pictorial warnings and said that mandatory health warnings on cigarettes pack are an effective way to tell smokers about harmful effects of tobacco use, motivate them to quit smoking and discourage the non smokers to start smoking [16].

Although the government accepted the recommendations of the regional and national consultations on 'Tobacco or Health' (1991), the proposal was deferred to evaluate the economic impact of tobacco control. After recognizing the delay of the legislature in enacting a national law, the Supreme Court of India in November 2001 stepped in to ban smoking in public places such as schools, libraries, railway waiting rooms and public transport throughout the country, and directed the Centre and States to take necessary action to ensure implementation of the ban. After this the High Court of Kerala and Supreme Court of India called for effective bans on smoking in public places and affirmed the rights of non-smokers to breathe air free from tobacco smoke. As far as MPOWER indicators are concerned, in case of advertising bans, compliance with bans on advertising and compliance with smoke-free policy a constant value of two has been observed since 2009 indicating no steps taken in this regard.

The primary tool for tobacco control is comprehensive and active awareness of the population about the ill effects of tobacco use. For this, efforts are made by the government and non governmental organizations (NGOs) for educating the community on issues related to tobacco control through various approaches i.e. educational and cessation programmes etc.

In case of anti-tobacco mass media campaigns, points have increased from 0 to 4 in 2011 but reduced by one point in 2013. Before 1990s, Indian cinema portrayed smoking primarily as the voice of law breaker.

Following this, Ministry of Health and Family Welfare in May 2005 proposed a smoking ban that prohibited smoking in films and television shows and this came into force in October 2, 2005. If producers wished to show a character smoking, the scene would have to be accompanied by a note saying that smoking is injurious to health, along with this warning about harmful effects of smoking at the beginning and end of films and anti-smoking advertisement must be screened at the beginning of the movie and during the interval. Though steps have been taken for the same, but mandatory maintenance and monitoring of mass media campaigns by Government of India is required.

Over the years, the Indian Government followed a dual policy towards tobacco production and consumption and it was considered as a source of revenue from taxes and exports rather than a harmful commodity. On one hand, increased taxation has been justified on the grounds of public health protection while, on the other, different

government departments promoted tobacco by providing subsidies/ incentives for cultivation, marketing and exports [5].

However, public as well as policy-makers' perceptions of tobacco have changed in recent years. Indian states were empowered to impose sales tax for the first time under the Government of India Act, 1935. Maharashtra was the first state to impose a tax on tobacco in selected urban and suburban areas in 1938. Central excise duties on tobacco were introduced for the first time in 1943 under the Tobacco Excise Duty Act, 1943. The duty, initially levied on unmanufactured tobacco and cigars, was later extended to cigarettes in 1948. But the prevailing tax system is not in accordance with the consumption pattern as points were decreased in case of taxation system. So, tax–price–demand analysis has to work out more for tobacco products, to frame an appropriate fiscal policy for the tobacco sector.

Till date there has been considerable improvement in tobacco control measures but still there are few measures that need reinforcement as forbidding sale of tobacco to minors, requiring more prominent health warning labels on packages, and banning advertising at sports and cultural events, promote economically viable alternatives for tobacco workers, growers and individual sellers, elimination of all forms of illicit trade in tobacco products including smuggling and illicit manufacturing, tax and price measures needed to be more implemented to reduce tobacco consumption etc. So, there is the possibility that the overall situation change the better with the introduction of more innovative methods.

LIMITATIONS

To our knowledge the present investigation is the first in India that has evaluated progression of tobacco cessation using MPOWER because of which not much literature was available. Hence it is suggested that further studies should be undertaken to assess tobacco control and outcome.

CONCLUSION

The Indian government has enacted and implemented various tobacco control policies at national and sub-national level. The study showed positive results with overall improvement in tobacco control over 5 years. This can help motivate the government agencies to further strengthen up and intensify tobacco control efforts.

There is a need to devise more innovative methods in tobacco control programmes by mobilizing financial and human resources along with evaluation and monitoring of these programmes periodically. The Government of India has to create more adequate provisions for the enforcement of tobacco control laws.

RECOMMENDATIONS

1. Building capacity to train and motivate health care providers to undertake and deliver evidence based cost effective pharmacological and behavioural smoking cessation therapies for the individual patients.
2. Implementation of the public health approaches such as mass media campaigns quit and win competitions, smoke free workplaces and telephone helpline services, which can play effective role in changing societal norms and promoting smoking cessation.
3. Increase in the political commitment and financial allocations in support for effective population and individual based tobacco cessation interventions. To ensure sustainability of smoking cessation, government need to incorporate tobacco cessation policies and programmes into other basic health care services.
4. Providing supportive environment for the tobacco cessation which includes decrease in accessibility of tobacco products through raised taxes, a reduction in social acceptance of tobacco consumption and an increase in information, which will improve the likelihood of tobacco cessation.
5. Increasing coordination between various sectors involved in providing smoking cessation interventions and, more importantly, integration of smoking cessation interventions into an overall policy on tobacco control.

REFERENCES

[1] George B, Johny MK, Mulamoottil MV, Lonappan J. Tobacco- a deadly poison. *Asian Pac. J. Health Sci*. 2014;1(4S):6-13.
[2] Kaur J, Jain DC. Tobacco Control Policies in India: Implementation and Challenges. *Indian J. Public Health*. 2011;55(3):220-27.
[3] Peto R, Lopez AD, Boreham J, Thun M, Heath C, Doll R. Mortality from smoking worldwide. *British Medi Bulletin*. 1996;2(1):12-20.
[4] Proctor NR. The history of the discovery of the cigarette–lung cancer link: evidentiary traditions, corporate denial, global toll. *Tob Control*. 2012;21:87-91.
[5] Reddy KS, Gupta PC. Report on tobacco control in India. Ministry of Health &Family Welfare, Government of India. *Report number*. 2004;1:1-378.
[6] Heydari G, Ahmady AE, Lando HA, Shadmehr MB, Fadaizadeh L. The second study on WHO MPOWER tobacco control scores in the Eastern Mediterranean Countries based on the 2013 report: improvements during two years. *Arch Iran Med*. 2014;17(9):621-25.
[7] Heydari G, Fischi T, Algouhmani H, Lando HA, Ahmady AE. WHO MPOWER tobacco control scores in the Eastern Mediterranean countries based on the 2011 report. *Eastern Mediterranean Health Journal*. 2013;19(4):314-19.
[8] World Health Organization. WHO Report on the Global Tobacco Epidemic, 2008: The MPOWER package. Geneva, World Health Organization, 2009.
[9] World Health Organization. WHO Report on the Global Tobacco Epidemic, 2008: The MPOWER package. Geneva, World Health Organization, 2011.
[10] World Health Organization. WHO Report on the Global Tobacco Epidemic, 2008: The MPOWER package. Geneva, World Health Organization, 2013.
[11] Jandoo T, Mehrotra R. Tobacco Control in India: Present Scenario and Challenges Ahead. *Asian Pacific J Cancer Pre*. 2008;9:805-10.
[12] Kanicka M, Poniatowski B, Szpak A, Owoc A. Differences in the effects of anti-tobacco health education programme in the areas of knowledge, attitude and behaviour, with respect to nicotinism among boys and girls. *Ann Agric Environ Med*. 2013;20(1):173-77.
[13] Shimkhada R, Peabody JW. Tobacco control in India. *Bulletin of the World Health Organization*. 2003;81(1):48-52.
[14] Levy D, Ellis JA, Mays D and Huang AT. Smoking related deaths averted due to three years of policy progress. *Bul WHO*. 2013;91:509-18.
[15] Basu S, Glantz S, Bitoon A, Millet C. The effect of tobacco control measures during a period of rising cardiovascular disease risk in india: a mathematical model of myocardial information and stroke. *PloS Med*. 2013;10(7):1-13.
[16] Raute LJ, Pednekar MS, Gupta PC. Pictorial health warnings on cigarette packs: a population based study findings from india. *Tobacco Use Insights*. 2009;(2):11–16.

PARTICULARS OF CONTRIBUTORS:

1. Tutor, Department of Public Health Dentistry, D.J College of Dental Sciences & Research, Ghaziabad, India.
2. Senior Lecturer, Department of Public Health Dentistry, D.J College of Dental Sciences & Research, Ghaziabad, India.
3. Professor and Head, Department of Public Health Dentistry, D.J College of Dental Sciences & Research, Ghaziabad, India.
4. Reader, Department of Public Health Dentistry, D.J College of Dental Sciences & Research, Ghaziabad, India.
5. Tutor, Department of Public Health Dentistry, D.J College of Dental Sciences & Research, Ghaziabad, India.
6. Tutor, Department of Public Health Dentistry, D.J College of Dental Sciences & Research, Ghaziabad, India.
7. Tutor, Department of Public Health Dentistry, D.J College of Dental Sciences & Research, Ghaziabad, India.
8. Tutor, Department of Public Health Dentistry, D.J College of Dental Sciences & Research, Ghaziabad, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Ravneet Malhi,
Tutor, Department of Public Health Dentistry, D.J College of Dental Sciences & Research,
Ajit Mahal, Niwari Road, Modinagar, Ghaziabad-201 204, India.
E-mail : Malhi.ravneet11@gmail.com

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