

Efforts to control tobacco use in the Democratic People's Republic of Korea (DPRK): an analysis of online media contents from the DPRK

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Abstract

Background: Tobacco use is one of the main public health concerns as it causes multiple diseases. The Democratic People's Republic of Korea (DPRK) is one of the 182 Parties to the World Health Organization (WHO) Framework Convention of Tobacco Control (FCTC). However, information is lacking regarding the tobacco use in the DPRK and the government's efforts for tobacco control. The aim of the study was to analyze the DPRK online media content in Korean to assess the DPRK government's efforts to control the tobacco use among its population, using MPOWER as a measuring tool.

Methods: Through the online search using the Korean keywords that corresponded to "tobacco", "smoking cigarette", and "smoking cessation" in English, a total of 47 online materials were found for the content analysis. Two examiners reviewed online materials to find the evidence of policy implementations to control tobacco use in the DPRK according to the MPOWER measures. The frequency of media coverage for each MPOWER measure was calculated.

Results: The appearance rate of each MPOWER measure on the online media was as follows: M 8.5%, P 44.7%, O 76.6%, W-package 12.8%, W-mass media 78.7%, E 4.3%, and R 0%.

Conclusions: The online media contents showed the DPRK government's stewardship to promote population health by controlling tobacco use.

Background

Ever since the first epidemiological studies on the harmful health effects of tobacco have been conducted in as early as 1930s,^{1,2} we now know that tobacco use causes multiple diseases such as lung cancer, liver cancer, breast cancer, chronic obstructive pulmonary disease, asthma, cardiovascular diseases, and more.³ The adverse health effects of tobacco use spares no organs of the body.

In 2003, the World Health Organization (WHO) member states agreed to adopt the WHO Framework Convention of Tobacco Control (WHO FCTC) and it came into force on February 27, 2005.⁴ The goal of this historical treaty was to provide evidence-based approach to reduce the prevalence of tobacco use among the population and encourage the participating countries to keep high levels of compliance. The Parties to the WHO FCTC are required to report every other year on the prevalence data of tobacco use and progress in implementing tobacco control policies in the country so that they could compare and learn from each other's experience.

The Democratic People's Republic of Korea (DPRK), also known as North Korea, is one of the 182 Parties to the WHO FCTC since it has ratified the treaty in 2005. The results of the DPRK's national survey for the prevalence of smoking have been reported in the FCTC reports⁵⁻⁸ and the Medium Term Strategic Plan for the Development of the Health Sector reports.^{9,10} Interestingly, the prevalence of smoking among females was consistently zero throughout four different surveys. The prevalence of smoking among adult male was 59.9% in 2002, 52.3% in 2009, 43.9% in 2013, and 46.1% in 2017. Since the survey in 2002, the prevalence has decreased till 2013 and the latest survey in 2017 showed slight increase. However, direct comparison between each survey result might not be accurate because the definition of adult for the survey has changed such as 25 years and older in 2009, 13 years and older in 2013, and 15 years and older in 2017. Even though there was a decreasing tendency in the prevalence of smoking among adult male over time, the DPRK's government acknowledged it as 'still high' despite of its efforts such as raising awareness among its population about harmful effects of smoking and adoption of the 'Cessation Law in DPRK' in the Sustainable Developmental Goals Voluntary National Review report which was published in 2021.¹¹

From the global health point of view, reliable data and information are fundamental to understand the health condition of the target population and measure the effectiveness of any interventions. Although there have been previous publications that reported prevalence of smoking as stated above and its health implication in the DPRK,⁵⁻⁸ the quantity of the available information is significantly less than those from other countries. The relative lack of information regarding the tobacco use in the DPRK and the government's efforts for tobacco control makes it difficult to have a clear view on the current situation of the country and to optimally promote international cooperation against harmful effects of tobacco use. Lately, web documents and videos that were made by the DPRK are available in the format of online media. While the information in English is scarce, the online media in Korean language could provide valuable information about the DPRK government's efforts to control tobacco use among its population.

MPOWER, suggested by WHO in 2007, is a practical way to expand policies and implement them in accordance with the purpose of the FCTC.¹⁶ The acronym represents, M: monitor tobacco use and prevention policies, P: protect people from tobacco use, O: offer help to quit tobacco use, W: warn about the dangers of tobacco, E: enforce bans on tobacco advertising, promotion and sponsorship, and R: raise taxes on tobacco (Table 1). WHO reported compliance of the FCTC Parties for the MPOWER measures in 2019 and 2021.^{17,18} The reports were made from the data that were collected from the FCTC Parties' official reports and accompanying documents. If the online media from the DPRK show the government's activities to control tobacco use of its population, they would be evidence for the country's compliance to the MPOWER measures. To the authors' knowledge, there has been no study that analyzed the DPRK's online media contents for the subject.

Table 1
Definition of MPOWER measures

Measure	Definition	
M	Monitor tobacco use and prevention policies	
P	Protect people from tobacco use	
O	Offer help to quit tobacco use	
W	W-package	Health warnings on cigarette packages
	W-media	Health warnings on mass media: anti-tobacco campaigns
E	Enforce bans on tobacco advertising, promotion and sponsorship	
R	Raise taxes on tobacco	

Therefore, the aim of the study was to analyze the online media contents that were made by the DPRK in Korean language to find the evidence of the DPRK government's implementation to control the tobacco use among its population, using MPOWER as a measuring tool.

Methods

1. Search for the DPRK websites that contain the information about the government's efforts to control tobacco use

We performed an initial search using Google to find websites that were made and operated by the DPRK, in Korean language. It identified 65 websites in total but only 4 news sites contained information about the government's efforts to control tobacco use. The websites were all news sites, and the web addresses were as follows: dprktoday.com, kcna.kp, naenara.com.kp, and uriminzokkiri.com.

2. Content analysis according to the MPOWER measures

In the 4 websites that were selected above, we searched the contents using the Korean keywords that corresponded to "tobacco", "smoking cigarette", and "smoking cessation" in English. It found multiple web documents, photos, and videos that were related to the study question. To find the current information, the publication date of them was limited from January 1, 2016 to December 31, 2021. After removing duplicates, we selected 32 web documents with or without photos, 8 web pages that showed photos only without any text, and 7 videos for the content analysis. They were summarized in Table 2.

Table 2
The online materials that were used for the analysis

Number	Online media	Year	Month	Day	Title in Korean (English translation)	Type
1	naenara.com.kp	2021	5	31	반담배 활동이 활발해지고 있다 (Anti-smoking activities becoming more active)	document
2	uriminzokkiri.com	2021	5	30	반담배 운동이 활발히 진행되고 있다 (Actively progressing anti-smoking movement)	document
3	dprktoday.com	2021	5	30	반담배와 우리의 삶 (Anti-smoking and our life)	video
4	kcna.kp	2021	5	29	반담배 운동이 활발히 진행되고 있다 (Actively progressing anti-smoking movement)	document
5	dprktoday.com	2020	12	13	반담배 연구센터 (From the anti-smoking research center)	photos
6	dprktoday.com	2020	12	12	반담배 법령(2) (About anti-smoking laws (2))	document
7	dprktoday.com	2020	12	10	반담배 법령(1) (About anti-smoking laws (1))	document
8	dprktoday.com	2020	11	26	최근 북한 주요 뉴스 (Recent main news in the DPRK)	video
9	dprktoday.com	2020	11	10	반담배에 사회적 관심을 끌기 위한 노력 (Efforts to draw social interest in anti-smoking)	document
10	kcna.kp	2020	11	9	반담배에 사회적 관심을 끌기 위한 노력 (Efforts to draw social interest in anti-smoking)	document
11	dprktoday.com	2020	11	8	국민 건강을 위한 반담배 운동을 적극 추진한다 (Promote anti-smoking movement for better health of people)	document
12	dprktoday.com	2020	6	6	최근 북한 주요 뉴스 (Recent main news in the DPRK)	video
13	dprktoday.com	2020	6	2	반담배 운동이 활발히 진행되고 있다 (Actively progressing anti-smoking movement)	document
14	uriminzokkiri.com	2020	5	31	반담배와 우리의 삶 (Anti-smoking and our life)	video
15	kcna.kp	2020	5	30	국민 건강을 위한 반담배 연구센터 (The anti-smoking research center for better health)	document
16	dprktoday.com	2019	9	22	담배 중독 탈퇴 방법 개발 - 금연을 위한 다양한 방법 개발 (How were the smoking cessation materials developed)	video
17	dprktoday.com	2019	6	4	세계 금연의 날에 관한 국제 회의 (The conference on the world no tobacco day)	photos
18	dprktoday.com	2019	6	4	반담배 활동 강화 (Reinforcing anti-smoking activities)	document
19	dprktoday.com	2019	6	4	세계 금연의 날에 관한 국제 회의 (The conference on the world no tobacco day)	document

Number	Online media	Year	Month	Day	Title in Korean (English translation)	Type
20	kcna.kp	2019	6	3	세계 금연의 날 기념 회의 (The conference on the world no tobacco day)	document
21	kcna.kp	2019	6	3	금연 활동을 강화하다 (Reinforcing ant-smoking activities)	document
22	dprktoday.com	2019	6	1	금연 활동을 강화하다 (Reinforcing anti-smoking activities)	photos
23	kcna.kp	2019	5	31	금연 활동이 활발해지고 있다 (Anti-smoking activities are becoming more active)	document
24	dprktoday.com	2018	8	13	효과가 높은 니코틴 패치 개발 (Development of the nicotine patch that has high effectiveness)	document
25	dprktoday.com	2018	6	11	금연 운동 확대 (Expanding anti-smoking movement)	document
26	naenara.com.kp	2018	6	1	세계 금연의 날 기념 회의 (The conference on the world no tobacco day)	document
27	dprktoday.com	2018	6	1	세계 금연의 날 기념 회의 (The conference on the world no tobacco day)	document
28	dprktoday.com	2018	6	1	<세계 금연의 날> 기념 회의 (The conference on the world no tobacco day)	photos
29	dprktoday.com	2018	6	1	금연 운동 확대 (Expanding anti-smoking movement)	photos
30	dprktoday.com	2018	1	31	흡연자들이 찾는 곳 (The place where smokers seek)	document
31	naenara.com.kp	2017	10	11	금연 보조 도구, 니코틴 패치 (Nicotine patch, a supporting tool for smoking cessation)	document
32	dprktoday.com	2017	6	27	창의력 전쟁으로 붐비는 캠퍼스 – 2. 금연 캠페인 (The campus crowded with the creative wars)	video
33	dprktoday.com	2017	6	23	흡연자들에게 존경받는 여성 학자 (A woman scholar respected by smokers)	document
34	dprktoday.com	2017	6	1	세계 금연의 날 기념 행사 (The events on the world no tobacco day)	photos
35	dprktoday.com	2017	6	1	세계 금연의 날 기념 행사 (The events on the world no tobacco day)	document
36	dprktoday.com	2017	5	31	담배는 생명 위협이다 <담배> (Tobacco is life threatening)	video
37	dprktoday.com	2017	5	31	흡연은 더 이상 재미없다. (Smoking is not fun anymore)	document
38	dprktoday.com	2017	5	31	금연 보조 재료 개발 (Development of new smoking cessation materials)	photos
39	kcna.kp	2017	5	30	금연 보조 재료 개발 (Development of new smoking cessation materials)	document

Number	Online media	Year	Month	Day	Title in Korean (English translation)	Type
40	naenara.com.kp	2016	6	1	세계 각국 금연 행사 열려 (The events on the world no tobacco day)	document
41	dprktoday.com	2016	6	1	세계 각국 금연 행사 열려 (The events on the world no tobacco day)	photos
42	dprktoday.com	2016	5	31	세계 각국 금연 행사 열려 (On the world no tobacco day)	document
43	naenara.com	2016	5	30	비흡연자 증가 (Non-smokers are increasing)	document
44	kcna.kp	2016	5	28	금연 운동에 대한 열의 증가 (Enthusiasm for anti-smoking movement is increasing)	document
45	kcna.kp	2016	5	17	금연 연구센터 전국에 건설 (Anti-smoking research centers are built across the DPRK)	document
46	kcna.kp	2016	5	8	금연 활동이 활발해짐 (Anti-smoking activities are becoming more active)	document
47	kcna.kp	2016	5	4	금연 운동이 추진되며 흡연률 8% 감소 (Anti-smoking movement was promoted in the DPRK, smoking prevalence was reduced by 8%)	document

Two authors participated in the content analysis as examiners. They independently reviewed each online material to find the evidence of policy implementations to control tobacco use in the DPRK. Then they classified them according to the MPOWER measures. In accordance with the WHO FCTC MPOWER compliance report,¹⁸ the W measure was divided into two sub-categories, displaying the health warning message on the cigarette package (W-package) and announcing the health warning via mass media (W-media). The examiners recorded presence or absence of each MPOWER measure in the online material. If an implementation for tobacco control was found but did not fit into any MPOWER classification, it was set aside for further investigation. The results from both examiners were compared and compiled. While the inter-examiner reliability was 91.5%, disagreement was resolved by discussion. Finally, the examiners calculated the frequency of media coverage for each MPOWER measure by numbers and rate.

Results

The implementation of MPOWER measures were found from the online media contents and they were summarized in Table 3. The appearance rate of each MPOWER measure on the online media was as follows: M (monitoring) 8.5%, P (smoke-free environments) 44.7%, O (cessation programs) 76.6%, W-package (health warnings on cigarette packages) 12.8%, W-mass media (anti-tobacco campaigns) 78.7%, E (advertising bans) 4.3%, and R (taxation) 0%.

Table 3
The appearance number and rate of each MPOWER measure on the online media studied

Measure	M	P	O	W		E	R
				W-package	W-media		
Appearance number	4	21	36	6	37	2	0
Appearance rate (%)	8.5	44.7	76.6	12.8	78.7	4.3	0
(Total number of online media studied: 47)							
M: monitoring, P: smoke-free environments, O: cessation programs, W-package: health warnings on cigarette packages, W-mass media: anti-tobacco campaigns, E: advertising bans, and R: taxation							

Discussion

We were able to find a total of 47 online media contents from the last 5 years published in Korean by the DPRK that were related to the DPRK government's efforts to control tobacco use among its population. Among the MPOWER measures, three most appeared ones were W-mass media (78.7%), O (76.6%), and P (44.7%), in the descending order. On the other hand, there was no online media content that reported about R (0%). Difference

in the appearance rate among the MPOWER measures does not necessarily reflect the different level of efforts of the DPRK's government to the measures because the media coverage rate is not directly related to the rate of actual activities. Instead, the difference might reflect the level of the reporting agent's interest in the individual measures. In that sense, the DPRK media's main messages were that smoking is hazardous to health, seek help to stop smoking, and smoking is not allowed in the public areas.

The true value of the study is that we found new evidence of the DPRK's compliance to the MPOWER measures from online media resources. These findings not only supported the results of the DPRK's WHO FCTC MPOWER compliance report in 2021¹⁸, but also showed that the government might perform better in some aspects. Even though something did not appear in the media, it does not necessarily mean that the thing did not happen. Reversely, if anything appeared in the media, it means that it truly has happened. With this in mind, we found a difference between the MPOWER compliance report and the DPRK government's implementations that were reported in the online media. Regarding advertising bans (E), in the WHO FCTC MPOWER compliance report, the DPRK's performance was categorized as 'Complete absence of ban, or ban that does not cover national television, radio and print media'. However, according to two separate news documents that were published on June 11, 2018, and December 12, 2020 (material number 6 and 25 in Table 2, respectively), advertisement of tobacco products in the DPRK was completely forbidden by any means. Therefore, we believe the DPRK's performance for the advertising bans should be categorized as the highest level, 'Ban on all forms of direct and indirect advertising'.

As stated above, there was no online media content about taxation on the tobacco products (R) and the WHO FCTC MPOWER compliance report in 2021 categorized the DPRK's performance on the subject as '< 25% of retail price is tax', which is the second lowest level of compliance. The lowest level of compliance was 'Data not reported'. However, one should interpret the report with caution because there is no tax in the DPRK. The DPRK's 2020 FCTC report answered the question about taxation on tobacco products: "DPR Korea is a tax free country. It has no tax system and all tobacco products are sold at a price set by the government which is being raised gradually over the years."⁸

We were able to find some other DPRK government's efforts than MPOWER measures through the online media content analysis. The media reported that the government has adopted new anti-smoking laws in November 2020 that were stricter than previous ones, limited domestic tobacco production, limited tobacco products sales, developed smoking cessation products, limited import of tobacco products, and provided remote service for smoking cessation. However, it was not possible to evaluate the effectiveness of those efforts because they were reported in short sentences without any further information in detail.

As a limitation of the current study, we did not evaluate the quality of the DPRK's media, which might affect interpretation of the study results. When the media content analysis is performed, it is important for the media sources to be transparent and accurate. The lack of information about the DPRK's media industry and business did not allow us to evaluate the quality of the media.

Even though the DPRK's government made a wide range of efforts to control tobacco use among its population, it did not significantly reduce the prevalence of smoking in adult males.¹¹ A further study will be necessary to investigate the social, cultural, and economic contexts of smoking in the DPRK to find the reasons for the high prevalence. It will also be an interesting study to examine the unusual absence of female smokers in the DPRK from the perspective of gender inequality.

Conclusions

Our media content analysis showed evidence of the DPRK government's stewardship to promote population health by controlling tobacco use. The government's efforts were observed in all MPOWER measures except taxation on tobacco products. Accurate evaluations on the DPRK's public health interventions to control tobacco use are necessary to develop new policies that will warrant high effectiveness in its unique social and cultural contexts.

Abbreviations

WHO – World Health Organization

FCTC – Framework Convention of Tobacco Control

DPRK – Democratic People's Republic of Korea

MPOWER – M: monitor tobacco use and prevention policies, P: protect people from tobacco use, O: offer help to quit tobacco use, W: warn about the dangers of tobacco, E: enforce bans on tobacco advertising, promotion and sponsorship, and R: raise taxes on tobacco

Declarations

Ethics approval and consent to participate: Not applicable.

Consent for publication: Not applicable.

Availability of data and materials: The data and materials that support the findings of this study are available upon request by the corresponding author.

Competing interests: The authors declare that they have no competing interests.

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Authors' contributions: HL reviewed selected materials, performed analysis, and wrote the manuscript. MK developed the search strategy and participated in manuscript writing. SY reviewed selected materials and performed analysis. KBP guided literature review, set up the research question, and participated in manuscript writing. All authors read and approved the final manuscript. All authors' contributions were significant and justifiable to obtain the authorship.

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