

# Public opinions on disclosure of tobacco components

## Results of a nationwide cross-sectional survey in Republic of Korea

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### Abstract

This study aimed to explore public views on disclosure of tobacco components in an effort to develop a comprehensive regulatory system facilitating implementation of the Framework Convention on Tobacco Control (FCTC) Articles 9 and 10 in Korea.

In all, 1200 representative Koreans 19 years old or older were enrolled and information on their general characteristics, smoking status, awareness of the effects of smoking on health, and views on the public disclosure of tobacco components was collected by telephone using a structured questionnaire. Factors associated with acceptance of the need for public disclosure of tobacco components were identified via multivariate analysis.

Most participants considered it necessary to publicly disclose tobacco components (95.9%) and were aware of the risk to health posed by smoking (76.0%). The prevalent view was that tobacco companies should be legally required to publicly disclose details of the components of cigarettes, their levels per cigarette, and their effects on health. The most effective means of disclosure were considered to be the mass media, printed materials, and labels on cigarette packs. Females and never-smokers (odds ratio [OR]: 4.39, 95% confidence interval [95% CI]: 1.76–10.94) more readily accepted the need for public disclosure, whereas those of lower educational level and/or who were less aware of the harm to health posed by smoking (OR: 0.05, 95% CI: 0.01–0.18) were less likely to be accepting.

The attitude of the general population ensures that FCTC Articles 9 and 10 will be successfully implemented in Korea. Further public consultation on the details of disclosure would be useful for the development of a comprehensive regulatory system.

**Abbreviations:** CI = confidence interval, FCTC = Framework Convention on Tobacco Control, OR = odds ratio, WHO = World Health Organization.

**Keywords:** awareness, components, disclosure, perception, products, regulation, tobacco

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### 1. Introduction

Smoking and exposure to secondhand smoke have detrimental effects on health, triggering premature death, tobacco-related diseases such as cancer and cardiopulmonary dysfunction, and adverse reproductive health outcomes.<sup>[1,2]</sup> These effects are caused by components of tobacco products. Tobacco contains approximately 7000 chemicals, including >69 carcinogens, as well as tar and nicotine.<sup>[3,4]</sup>

Articles 9 and 10 of the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) were developed to prevent the spread of the tobacco epidemic by increasing public awareness of the harmful effects of tobacco use and to encourage effective regulation of tobacco products.<sup>[5]</sup> Article 9 regulates the components of tobacco products and smoke, and Article 10 requires disclosure of the components of both products and smoke.

Certain countries including the USA, Canada, Australia, New Zealand, and Brazil have adopted these Articles and have developed regulations and associated infrastructure facilitating implementation.<sup>[6,7]</sup> However, the nature of the regulations and their detailed implementations vary among countries, reflecting differences in sociolegal structure, the infrastructure available for implementation, and political concerns. The fact that no standardized practical guidelines for implementation are available accentuates such differences.<sup>[8,9]</sup> In the USA, the Family

Smoking Prevention and Tobacco Control Act (enacted in 2009) gave the US Food and Drug Administration authority to regulate the manufacture, distribution, and marketing of tobacco products.<sup>[10]</sup> However, both the evaluation and the public disclosure of components of tobacco products and smoke are poorly enforced. In Canada, details are disclosed to the government only, thus not the public. Australia regulates the components of tobacco products and smoke, but practical testing has not been implemented. New Zealand measures the components of tobacco products and smoke, but no regulations have been promulgated. Most countries do not fund governmental laboratories assessing the components of tobacco products and smoke. Data from tobacco companies are subject to governmental review only in Canada.

Table 1 summarizes among-country differences in implementation of Articles 9 and 10.

Although the Republic of Korea signed and ratified the WHO FCTC on May 16, 2005, the gap between actual and promised implementation remains extensive.<sup>[11]</sup> In Korea, smoking prevalence is still high, even if it has been decreased from 30.2% in 2001 to 23.2% in 2013.<sup>[12]</sup> Tobacco Business Act for promoting tobacco manufacturing and selling and the National Health Promotion Act including articles of tobacco control coexist and cause conflicts. Furthermore, movements for implementing the Articles 9 and 10 have not been fulfilled. Disclosure of the tar and nicotine concentrations (only) of tobacco products is required by regulations of the “Tobacco Business Act” and “Health Promotion Act.” However, not the Ministry of Health and Welfare but Ministry of Strategy and Finance has the rights for regulation of tobacco components and their disclosure as well as the disclosure could be exempted for other type of tobacco products except cigarettes by “Tobacco Business Act.” Disclosure of other components of tobacco products by tobacco companies and evaluation of components of tobacco products and smoke is not required by any law. In addition, the extent to which Koreans understand these Articles, and approve of them, has not been assessed.

Thus, to determine how Korea might fulfill the requirements of Articles 9 and 10, and to aid in the development of critical regulations and policies, we assessed the extent of awareness of the Articles among the general population, and the perceived need to implement them. We thus found factors associated with acceptance of the need to publicly disclose the components of tobacco and tobacco smoke.

## 2. Methods

### 2.1. Study participants and design

Our cross-sectional survey, conducted from July 23, 2012, to July 27, 2012, featured computer-assisted telephone interviews. Regarding the available resource, total sample size was fixed as 1200 participants and a specific number of participants were allocated to each stratum by the sex, age, and province of residence to ensure that the proportion of participants in each selected stratum matched that in the general Korean population based on the Korean population and housing census survey data. The random-digit-dial survey has been continued until the number of participants included in each strata reach the number allocated. Province of residence was identified with the area code in telephone number, and information on age and sex was asked of the participants who responded. In this process, non-

respondents were replaced by others who were same in terms of age, sex, and province of residence.

A structured questionnaire was developed by an expert group, and trained personnel employed by a professional Korean research company conducted all interviews (<http://links.lww.com/MD/B78>).

Verbal informed consents were obtained from the study participants, and the Institutional Review Board of the National Cancer Center of Korea approved the study protocol.

### 2.2. Measurements

Identical questions on the public disclosure of tobacco and smoke components were asked of all participants. A structured questionnaire was used to evaluate public perceptions of the harmful effects of tobacco and smoke components and the need to disclose such data publicly. The questions explored the following: sociodemographic status, smoking status, awareness of the harm to health caused by smoking and tobacco components, and the perceived need for public disclosure of tobacco components.

Sex, educational level, occupation, household income, and area of residence were noted. Participants were divided into 3 groups: never-smokers, former smokers, and current smokers. Both never-smokers and former smokers were classified as nonsmokers. The extent of awareness of the harm to health caused by smoking was evaluated with 2 questions: “How harmful do you think cigarettes are?” and “What tobacco components do you know of?” Views on disclosure of the components of tobacco and smoke were explored with 6 questions: “Do you know how many of the components of tobacco products and smoke have been disclosed to the public?”; “Do you think public disclosure of tobacco components is necessary?”; “If yes, why?”; “How many components of tobacco products and smoke should be obligatorily disclosed to the public?”; “To what extent do you think public disclosure should be implemented?”; “Who should be responsible for public disclosure, and how should this be done?”; and “Which means of public disclosure would be most effective?”

### 2.3. Data analysis

Differences in sociodemographic characteristics, health awareness, and perceptions of Article 9 and 10, between smokers and nonsmokers, were compared using the Mantel–Haenszel  $\chi^2$  test. Multiple logistic regression modeling adjusted for age, sex, and educational level was used to identify factors associated with acceptance of the necessity to publicly disclose the components of tobacco and smoke, and odds ratios (ORs) with 95% confidence intervals (CIs) were calculated. All analyses were performed with the aid of SAS software (version 9.2).

## 3. Results

A total of 20.2% of all participants were current smokers, and were more commonly male (92.2%), 30 to 39 years old (32.6%), educated to more than college level (64.8%), and blue collar (56.2%) (Table 2).

Most participants knew that smoking caused lung cancer and that tobacco was nothing but harmful (76%). A total of 61.8% of participants thought that tobacco and smoke contained thousands of toxic chemicals, as well as tar and nicotine, but 79%

**Table 1**

**Implementation of FCTC Articles 9 and 10 in various countries.**

Country/ region	Regulatory measures	FCTC Article 9*				FCTC Article 10*				Administrative organization†			Current status of testing			Current status of disclosure			
		Measurement of components		Regulations		Government disclosure		Public disclosure		Existence	Name	Test laboratories‡	Extent of testing§	Test method	Inspection of tobacco company reports	Additives¶	Reporting method#	Details of disclosure**	Public disclosure**
		In	On	On	On	Components of products	Components of products	Components of products	Components of products										
USA	0	0	0	0	0	0	0	0	0	0	FDA	A, B	A (HPHC 93)	ISO	B	A	A	A	B
Canada	0	0	0	0	X	0	0	X	0	0	Health Canada	B	A (components 26, emissions 41)	WHO Tobreg	A	A	A	A	B
Australia	0	X	0	0	0	0	0	0	0	0	Department of Health	B	B	ISO, WHO Tobreg	?	B	B	B	B
New Zealand	0	0	0	X	0	0	0	0	0	0	Department of Health	B	A (components and emissions 95)	ISO	B	B	A	A	B
EU	0	X	0	X	0	0	0	0	0	0	NA	B	B	ISO	B	B	B	B	—
Brazil	0	0	0	0	0	0	0	0	0	0	ANVISA, INCA	B	B	WHO Tobreg	B	A	A	B	B
Republic of Korea	0	X	0	X	X	0	X	X	X	X	X	B	C	ISO	C	C	C	C	B

ANVISA = Agência Nacional de Vigilância Sanitária, FCTC = Framework Convention on Tobacco Control, FDA = Food and Drug Administration, INCA = Instituto Nacional de Câncer José Alencar Gomes da Silva, ISO = International Organization for Standardization; NA = not applicable, WHO = World Health Organization.

\*WHO FCTC signatory reports in the time since 2010 (except for the USA). †National laws.

‡A: governmental laboratory; B: accredited independent testing laboratory.

§A: testing of all components (specific tobacco and smoke components restricted by national laws); B: testing of all components (principally nicotine, tar, and CO); C: nicotine and tar only.

¶A: additive regulations exist (lists of prohibited or restrictive additives); B: additives reported; C: absence of additives regulations (reporting or prohibition).

#A: existence of auditing or inspection systems; B: administrative review; C: absence of inspection systems.

\*\*A: compulsory reporting; B: voluntary reporting; C: absence of any reporting method.

††A: components, emissions, additives, toxicological data, standard criteria (specific lists, quantities, functions); B: components, emissions, additives, toxicological data, standard criteria (nicotine, tar, and CO); C: nicotine, tar, some components.

†††A: complete disclosure; B: partial disclosure

**Table 2****General characteristics of study participants by smoking status.**

Variable	Total (n = 1200), %	Nonsmoker (n = 958, 79.8%)	Smoker (n = 242, 20.2%)	P <sup>a</sup>
Sex				
Male	598 (49.8)	375 (39.1)	223 (92.2)	<0.0001
Female	602 (50.2)	583 (60.9)	19 (7.9)	
Age, y				
19–29	219 (18.3)	179 (18.7)	40 (16.5)	<0.0001
30–39	246 (20.5)	167 (17.4)	79 (32.6)	
40–49	265 (22.1)	205 (21.4)	60 (24.8)	
50–59	226 (18.8)	185 (19.3)	41 (17.0)	
≥60	244 (20.3)	222 (23.2)	22 (9.1)	
Educational level				
Less than college	509 (43.4)	427 (45.4)	82 (35.2)	0.0050
More than college	665 (56.6)	514 (54.6)	151 (64.8)	
Occupation				
White collar	363 (30.3)	276 (28.8)	87 (36.0)	<0.0001
Blue collar	463 (38.6)	327 (34.1)	136 (56.2)	
Housewife	288 (24.0)	286 (29.9)	2 (0.8)	
Others	86 (7.2)	69 (7.2)	17 (7.0)	
Monthly household income, US\$				
<2000	203 (20.8)	173 (22.6)	30 (14.4)	0.0134
2000–3999	395 (40.6)	311 (40.7)	84 (40.2)	
≥4000	376 (38.6)	281 (36.7)	95 (45.5)	
Residence area				
Urban	560 (46.7)	453 (47.3)	107 (44.2)	0.3922
Rural	640 (53.3)	505 (52.7)	135 (55.8)	

<sup>a</sup> Mantel–Haenszel  $\chi^2$  test.

thought that the components have been partially disclosed to the public.

A total of 95.9% of participants considered that public disclosure of tobacco components was necessary. The major reason was “consumer right to know” (46.4%), followed by “impact on smoking prevention” (40%). Most thought that disclosure should include the names of the components, the amounts per cigarette, and related health information. A total of 75.8% of participants considered that tobacco companies should be required by law to disclose these data. Mass media, including television, newspapers, and magazines (43.6%), and labels on cigarette packs (43.3%) were considered the most effective routes of disclosure. Both nonsmokers and smokers shared these views, although nonsmokers were more aware of the health hazards of smoking and were more in favor of disclosing tobacco components; both differences were significant (Table 3).

On multiple logistic regression adjusted for age, sex, and educational level, females (OR: 2.88, 95% CI: 1.49–5.54) and never-smokers (OR: 4.39, 95% CI: 1.76–10.94) were more convinced of the need for public disclosure of tobacco components, whereas those of lower educational levels (OR: 0.46, 95% CI: 0.23–0.90) and those who thought that smoking was not harmful (OR: 0.05, 95% CI: 0.01–0.18) were less convinced. The perceived level of current public disclosure was not associated with acceptance of the need for disclosure (Table 4).

#### 4. Discussion

Articles 9 and 10 of the WHO FCTC reflect the need for mandatory public disclosure of tobacco and smoke components; this is an effective mode of tobacco control. However, practical guidelines on Article implementation remain under development, and the efforts to evaluate the public awareness and perception

on Article implementation are in lack. Therefore, the need for disclosure may not be adequately recognized, although this is essential for successful implementation of the Articles. Some countries, including the USA, EU, Australia, New Zealand, and Brazil, have made the disclosure of the harmful components of tobacco and smoke by tobacco companies mandatory. Currently, regulatory bodies, test laboratories, and inspection systems are considered as comprehensive strategies for tobacco product regulation in some countries.<sup>[13–17]</sup>

Even the Korean government admits that Articles 9 and 10 have been but superficially implemented. The names of 6 carcinogens, and the amounts of nicotine and tar per cigarette, are disclosed on cigarette packs. However, comprehensive regulations on most tobacco components are lacking.<sup>[9]</sup> Furthermore, tobacco producers continually seek to circumvent Articles 9 and 10; after expansion of smoke-free areas and effective media presentations on the harm of cigarette to health, several modified or new tobacco products such as smokeless tobacco and e-cigarette have been introduced without any consideration of their components, labeling, harmful effects on health, or the need for disclosure.

The present study raises several issues to be considered when governments and experts plan to implement Articles 9 and 10 in countries unfamiliar with the Articles. Both global and national educational campaigns have created agreement that public disclosure of tobacco components is necessary; it is accepted that tobacco causes lung cancer and other health problems. However, about 10% of participants still claim to not know about the harm to health posed by smoking, or that smoking is harmful (Table 3). In addition, about 38% of participants know nothing about the harmful components of tobacco and smoke, except for tar and nicotine (Table 3), and are less ready to accept the need for more public disclosure (Table 4). These results are consistent with the data of previous studies that explored public

**Table 3****Awareness of the harm to health caused by smoking and tobacco components, and perception of public disclosure of tobacco components.**

Variable	Total (n = 1200), %	Nonsmoker (n = 958, 79.8%)	Smoker (n = 242, 20.2%)	P*
Awareness of the health harms of smoking				
Smoking causes lung cancer and various other health problems so I think tobacco is nothing but harmful	912 (76.0)	774 (80.8)	138 (57.0)	<0.0001
I know smoking causes lung cancer	174 (14.5)	117 (12.2)	57 (23.6)	
I heard smoking is not good for health but don't know the details	101 (8.4)	62 (6.5)	39 (16.1)	
I think smoking is not harmful at all	13 (1.1)	5 (0.5)	8 (3.3)	
Awareness of components of tobacco and smoke				
I don't know anything about them	3 (2.8)	31 (3.2)	2 (0.8)	0.6475
I know only that they contain tar and nicotine	425 (35.4)	350 (36.5)	75 (31.0)	
I know they have dozens of carcinogens and thousands of toxic chemicals as well as tar and nicotine	742 (61.8)	577 (60.2)	165 (68.2)	
Perceived level of current public disclosure of tobacco components				
Completely disclosed	101 (8.4)	83 (8.7)	18 (7.4)	0.9950
Partially disclosed	942 (78.5)	749 (78.2)	193 (79.8)	
Nothing disclosed	115 (9.6)	89 (9.3)	26 (10.7)	
Don't know	42 (3.5)	37 (3.9)	5 (2.1)	
Perception of the need for public disclosure of tobacco components				
It is not necessary	49 (4.1)	28 (2.9)	21 (8.7)	0.0009
It is necessary	1151 (95.9)	930 (97.1)	221 (91.3)	
Why should components be disclosed to the public?				
Consumer right to know	534 (46.4)	407 (43.8)	127 (57.5)	0.0218
Safe management of tobacco products	147 (12.8)	118 (12.7)	29 (13.1)	
Smoking prevention	459 (40.0)	395 (42.5)	64 (29.0)	
Others	11 (1.0)	10 (1.1)	1 (0.5)	
How many components should be disclosed to the public?				
Current disclosure (only amount of tar and nicotine per cigarette) is enough	46 (4.0)	25 (2.7)	21 (9.5)	0.0333
All components of tobacco products should be disclosed	244 (21.2)	198 (21.3)	46 (20.8)	
All components of tobacco products and smoke should be disclosed	854 (74.2)	702 (75.5)	152 (68.8)	
Don't know	7 (0.6)	5 (0.5)	2 (0.9)	
Should the public know?				
Only the names of components of tobacco and smoke	38 (3.3)	29 (3.1)	9 (4.1)	0.7058
Names and levels of components per cigarette	107 (9.3)	79 (8.5)	28 (12.7)	
Names and levels of components per cigarette and their negative health impacts	1006 (87.4)	822 (88.4)	184 (83.3)	
By whose hands, and how, should public disclosure be effected?				
Tobacco companies should disclose	52 (4.5)	45 (4.8)	7 (3.2)	0.3268
Governmental authorities should disclose	221 (19.2)	161 (17.3)	60 (27.2)	
Tobacco companies should disclose and governmental authorities should inspect and control them by law	872 (75.8)	719 (77.3)	153 (69.2)	
Others	6 (0.5)	5 (0.5)	1 (0.5)	
What is the most effective channel for public disclosure?				
Tobacco company websites	25 (2.2)	20 (2.2)	5 (2.3)	0.5013
Government websites	87 (7.6)	67 (7.2)	20 (9.1)	
Mass media or print materials (TV, newspapers, magazines)	502 (43.6)	418 (45.0)	87 (38.0)	
On cigarette packs	498 (43.3)	394 (42.4)	104 (47.1)	
Others	39 (3.4)	31 (3.3)	8 (3.6)	

\* Mantel-Haenszel  $\chi^2$  test.

understanding of illnesses caused by smoking; some participants lack even a basic understanding of the nature and severity of the consequences of smoking, although the adverse health consequences of smoking are generally recognized.<sup>[18]</sup> Thus, both the present study and prior works suggest that more specific information is required. What are tobacco-related health risks? What harmful components are contained in tobacco and smoke? How carcinogenic or toxic are these components? The answers would encourage public awareness of the harm to health posed by smoking, and why Articles 9 and 10 should be implemented.

We also obtained useful information on the necessary extent of public disclosure, who should disclose, how disclosure should be

effected, and the optimal channels of disclosure. Most interviewees suggested that disclosure should include a list of components, the amounts per cigarette, and information on health impacts. However, in Korea, complete disclosure on tobacco components by tobacco companies has not been mandatory (Table 1). International tobacco companies as well as domestic ones have provided the partial information on components of tobacco products and no information on their emission. Therefore, tobacco companies should be required to report the complete information to government by law, and disclose it to the public via mass media including internet website in Korea following other countries' implementation. Warning

**Table 4**  
**Multiple logistic regression assessing the perceived need for public disclosure of data on tobacco products.**

Variable	Total (n = 1200), %	Accept the need for public disclosure (n = 1151, 95.9%)	Unadjusted OR (95% CI)	Adjusted OR* (95% CI)
Sex				
Male	598 (49.8)	564 (94.3)	Reference	Reference
Female	602 (50.2)	587 (97.5)	2.36 (1.27–4.38)	2.88 (1.49–5.54)
Age, y				
≥60	244 (20.3)	232 (95.1)	Reference	Reference
50–59	226 (18.8)	215 (95.1)	1.01 (0.44–2.34)	0.94 (0.39–2.23)
40–49	265 (22.1)	260 (98.1)	2.69 (0.93–7.75)	2.15 (0.72–6.44)
30–39	246 (20.5)	238 (96.8)	1.54 (0.62–3.83)	1.05 (0.39–2.83)
19–29	219 (18.3)	206 (94.1)	0.82 (0.37–1.84)	0.59 (0.23–1.51)
Educational level				
≥College	665 (56.6)	645 (97.0)	Reference	Reference
≤High school	509 (43.3)	482 (94.7)	0.55 (0.31–1.00)	0.46 (0.23–0.90)
Awareness of the health harms of smoking				
Smoking causes lung cancer and various other health problems so I think tobacco is nothing but harmful	912 (76.0)	882 (96.7)	Reference	Reference
I know smoking causes lung cancer	174 (14.5)	165 (94.8)	0.62 (0.29–1.34)	0.80 (0.35–1.79)
I heard smoking is not good for health but I don't know the details	101 (8.4)	96 (95.1)	0.62 (0.25–1.72)	0.73 (0.27–1.97)
I think smoking is not harmful at all	13 (1.1)	8 (61.5)	0.05 (0.02–0.18)	0.05 (0.01–0.18)
Perceived level of current public disclosure of tobacco components				
Completely disclosed	101 (8.4)	99 (98.0)	Reference	Reference
Partially disclosed	942 (78.5)	904 (96.0)	0.48 (0.11–2.02)	0.43 (0.10–1.84)
Nothing disclosed	115 (9.6)	109 (94.8)	0.37 (0.07–1.86)	0.38 (0.07–2.02)
Don't know	42 (3.5)	39 (92.9)	0.26 (0.04–1.63)	0.31 (0.05–2.00)
Smoking status				
Current smokers	242 (20.2)	221 (91.3)	Reference	Reference
Former smokers	246 (20.5)	234 (95.1)	1.85 (0.89–3.86)	2.04 (0.93–4.49)
Never-smokers	712 (59.3)	696 (97.8)	4.13 (2.12–8.06)	4.39 (1.76–10.94)

CI = confidence interval, OR = odds ratio.

\* Multiple logistic regression model adjusted for age, sex, and educational level.

labels on cigarette pack to inform smokers about the risks of smoking could be in due course and promoted by such information. Similar findings have been reported in other studies.<sup>[19,20]</sup> Finally, the major perceived needs for public disclosure were “consumer right to know” among smokers and “smoking prevention” among nonsmokers. Thus, detailed disclosure of tobacco and smoke components would aid quitting by smokers and encourage nonsmokers to continue to abstain, which are the desired outcomes of Articles 9 and 10.

Male sex, a lower educational level, and the notion that smoking is not harmful were significantly associated with opposition to public disclosure, after adjustment for age, sex, and educational level. The fact that males were less likely to support public disclosure may be explained by the fact that male smokers were more prevalent than female smokers, consistent with previous findings that current smokers were significantly less likely to recognize the health hazards of smoking and that nonsmokers were significantly more knowledgeable about smoking-related illnesses than were current smokers. Furthermore, differences in the extent of knowledge of the effects of smoking on health crucially influence smoking-related behaviors including commencing and ceasing smoking.<sup>[21–24]</sup> As identified previously, a lower level of education might be linked to a lack of both knowledge and awareness of the harm to health caused by smoking. Erroneous “knowledge” and a lack of accurate information may trigger a negative attitude toward tobacco

control and/or smoking cessation.<sup>[25,26]</sup> This may explain why a low level of education and the notion that smoking is not harmful were associated with a negative attitude toward public disclosure in the present study. Thus, increased efforts such as tailored educational campaigns to improve knowledge of tobacco-related illness are required before implementation of Articles 9 and 10 at the national level. Barriers to implementation would thus be lowered, and acceptability would be maximized. Furthermore, multidimensional approach to promoting tobacco control policies and activities should be reinforced to denormalize tobacco use in our society and to form a new generation of tobacco-free individuals.<sup>[27]</sup>

Although we explored how Korea might fulfill the requirements of Articles 9 and 10 by the development of essential regulations and policies from the evaluation of public opinion, several limitations of our work are apparent. First, a cross-sectional study such as ours explores only associations among variables; causality cannot be inferred. Second, the number of interviewees was too low to allow a subgroup analysis of adequate statistical power and the percentage of smokers was relatively low when compared with the national data, although the sample was randomly selected with the consideration of age, sex, and place of residence strata. Notably, the extent of awareness of harm to health, and acceptance of the need for public disclosure, did not greatly differ between smokers and nonsmokers.

Both smokers and nonsmokers accept that smoking harms the health; this assures the success of implementation of Articles 9 and 10 in Korea. We measured the desired extent of disclosure, determined who should disclose, explored how disclosure should be effected, and identified optimal channels of disclosure. Thus, these data would be helpful to develop a comprehensive regulatory system in Korea. Countries that have not yet implemented the Articles may find our data useful.

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