

An assessment of compliance with the provisions of Cigarettes and Other Tobacco Products Act 2003: Is Shimla a smoke-free city?

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ABSTRACT

Background. Tobacco consumption in any form is a major contributor to non-communicable diseases, and it is the leading preventable cause of death worldwide. Second-hand smoke is also harmful. To halt the smoking epidemic and protect people from second-hand smoke, the Government of India enacted the Cigarettes and Other Tobacco Products Act (COTPA) in 2003.

Methods. We ascertained compliance with the provisions of COTPA 2003 at 183 public places and 41 transport facilities of Shimla city from August 2017 to July 2018.

Results. Only 48% of public places had good compliance with the provisions of COTPA 2003. On average, a public place was found to be compliant with 7 of 10 key indicators of Section 4. Educational institutes and government offices had a higher rate of compliance compared to other places. Active smoking and signages signalling ban on smoking were observed in 17% and 95.6% of public places, respectively. Smoking aids (e.g. ashtrays) were observed at <10% of places. A designated smoking area was not seen at any public place.

Conclusion. Overall compliance of the Act was low with less than half the places having satisfactory compliance with Section 4. There is a need to raise awareness about the negative effects of smoking on health and environment and ensure strict adherence to the provisions of COTPA 2003.

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INTRODUCTION

Tobacco is a 'legal drug' that kills the best of its customers when consumed exactly as intended by its manufacturers.¹ No other consumer product is as dangerous or is responsible for as many deaths. Mortality attributable to tobacco is more than that due to HIV, substance abuse, traffic accidents, homicide and suicide collectively.² On average, tobacco users lose 15 years of life. WHO estimates suggest that about 7 million deaths across the

world each year are attributable to tobacco use and, unless urgent action is taken, the death toll will exceed 8 million a year by 2030.³

India is the third largest tobacco-producing nation and the second largest consumer of tobacco worldwide. According to the second round of nationwide Global Adult Tobacco Survey-2 (2016–2017), 28.6% of adults in India, aged 15 and above currently use tobacco in some form. Every tenth adult (10.7%; 99.5 million) in India currently smokes tobacco. The prevalence of smoking in the state of Himachal Pradesh is 14.2%, which is more than the national average.⁴ Mortality due to tobacco use is estimated to be 1.3 million in India.^{5,6}

Although consuming tobacco in any form is hazardous, smoking threatens smokers as well as non-smokers. Globally, there are more than one billion smokers, who can potentially expose others to second-hand smoke (SHS).⁷ One million people are estimated to die from the effects of SHS annually.⁸ India has a high prevalence of exposure to SHS, with about 30.2% of adults older than 15 years are exposed to SHS at workplaces, 38.7% at home and 23% at public places.⁴

Although the global tobacco epidemic threatens more lives than any infectious disease, the solution is not the discovery of a vaccine but the implementation of proven public policies. The WHO Framework Convention on Tobacco Control (FCTC) is the most important global initiative for tobacco control.⁹ India became a signatory to the WHO FCTC on 10 September 2003.¹⁰ To keep up with the global fight against tobacco, the Government of India passed a legislation titled 'Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003' (COTPA) to prohibit and regulate tobacco use in India.¹¹ This legislation intends to protect people from SHS, formulate strategies to reduce tobacco consumption and impose penalties on the violators. Smoking is completely and legally banned in most public places and workplaces (Section 4). All forms of tobacco advertising, promotion and sponsorship are prohibited (Section 5). It is mandatory to have pictorial and text health warning labels on the tobacco product packages (Section 7, 8 and 9).¹¹

Shimla, the capital city of Himachal Pradesh, became the fourth city in India to be declared smoke-free in 2010, and the state declared itself smoke-free in 2013.^{12,13} Although Shimla city has been officially a 'smoke-free' city for nearly a decade, the sustainability of its 'smoke-free' status is a challenge as compliance tends to decline with the passage of time.

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We assessed compliance with the provisions of Section 4 of COTPA 2003 in Shimla city and aimed to provide inputs to improve the legislation for tobacco control.

METHODS

The study was conducted from August 2017 to July 2018 in various public places of Shimla city. Public places such as educational institutions, accommodation facilities, eateries, government offices, healthcare facilities, other 'most frequently visited public places' and public transport as defined in COTPA 2003 were included in the study.

Study sample

A list of 521 public places was prepared after procuring this information from various departments such as Health, Tourism, Elementary education and office of the District Magistrate. Assuming 80% compliance of COTPA as the city had already the smoke-free status; with 5% margin of error and 95% confidence limits, and a non-response rate of 10%, a sample size of 183 public places was calculated. In addition, 41 transport facilities were observed for compliance of COTPA 2003.

Study tool

We recorded our observations using a structured observational checklist based on the specifications and guidelines of COTPA 2003, and a guide jointly developed by Johns Hopkins School of Public Health, Tobacco-Free Kids and International Union against Tuberculosis and Lung Disease.^{14,15}

Methodology

Necessary prior permission for the study was obtained from concerned administrative authorities of Shimla city. An exhaustive list of 521 different categories of public places was procured and proportion of each subgroup was calculated. As our sample size was 183, a sample proportionate to the strength of each subcategory was selected from the list of various public places in the city. Further, the estimated sample of each subcategory was chosen randomly (Table I). Offices and educational institutes were observed during working hours, eateries during peak business hours and public places during peak visited timings. Informed consent was taken from the in-charge of the facility wherever free access was not available. Ten key indicators were identified to assess overall compliance

TABLE I. Distribution of the study sample

Category (n)	n (%)
<i>Public places</i>	183
Accommodation facilities	97 (53)
Educational institutes	32 (17.5)
Government offices	29 (15.8)
Eateries	14 (7.7)
Healthcare facilities	7 (3.8)
Most visited public places	4 (2.2)
<i>Transport facilities</i>	41
Government	19 (46.3)
Private	22 (53.7)

with Section 4 of the Act. A public place was labelled as having good compliance if it adhered to at least eight key indicators.

Statistical analysis

The data were collected, cleaned and analysed using Epi info version 7.2.2.6 software. The discrete variables were expressed in terms of proportions and percentages with 95% confidence intervals. The continuous variables were expressed as mean (SD). Pearson chi-square or Fisher exact test was used to test the statistical significance of dichotomous categorical data. Odds ratios with 95% confidence intervals were also calculated to determine the strength of association between exposure and outcome variables wherever required. A two-tailed p value of <0.05 was considered statistically significant for all analysis.

Ethical considerations

Prior ethical approval was taken from the Institute Ethical Committee. Institutional and personal identifiers were omitted to maintain confidentiality and anonymity.

RESULTS

Table I gives the distribution of various categories of public places included in the study. The mean (SD) time of observation was 39.34 (7.21) minutes (30–60 minutes). Table II shows the compliance of Section 4 in all public places of Shimla city. Active smoking was seen in about 17% of places (Table II). About 95.6% of facilities displayed a signage signalling ban on smoking inside the building. About 55.7% of places displayed the

TABLE II. Compliance in public places of Section 4 of Cigarette and Other Tobacco Products Act (COTPA) 2003 (n=183)

Indicator	n (%)	95% CI
Signage signalling ban on smoking at the entrance	98 (53.6)	46.1–60.9
Signage signalling ban on smoking inside the building	175 (95.6)	91.6–98.1
Signage of 'No smoking area: Smoking here is an offence'	102 (55.7)	48.2–63.1
Signage of 60 cm × 30 cm inside the building	92 (50.3)	42.8–57.7
Signage displaying the name of authority for making complaint	98 (53.6)	46.1–60.9
Message displayed in a language specified in the Act	183 (100)	98.0–100
No active smoking during observation	152 (83.1)	76.8–88.2
No visible ashtrays/ashbins indoors	169 (92.6)	87.5–95.8
No lighter/matchbox observed indoors	174 (95.1)	90.9–97.7
No cigarette/beedi stubs inside the location	137 (74.9)	67.9–80.9
No matchsticks on the floor	123 (67.2)	59.9–73.9
No odour of tobacco inside the location	139 (75.9)	69.1–81.9
Presence of a designated smoking area indoors	0	0
Awareness regarding COTPA 2003	128 (69.9)	62.7–76.4
Facility issued challans to violators in the past 1 year	23 (12.6)	8.1–18.2

standard warning signage saying 'No smoking area: Smoking here is an offence'. About 53.5% of places displayed a signage displaying the name of the authority to whom a complaint can be made in case of violation of the Act. Smoking aids were observed at <10% of places. Tobacco remains were observed at 25.1% of places. Only in 12.6% of all facilities, a challan was issued to a person for violation of the Act in the past 1 year.

Table III compares different categories of public places for compliance with Section 4 of COTPA 2003. Overall, compliance was better in government offices and educational institutes. Eateries and accommodation facilities had poor compliance with Section 4 of the Act. Regarding the display of a 'No smoking' signage, all government offices and healthcare facilities had full compliance. A statistically significant difference was found for the display of the signage signalling ban on smoking at the entrance, display of signage showing ban on smoking inside the building, display of signage of specified size, signage displaying the name of the authority for complaint, absence of active smoking, lack of smoking aids and markers of indirect evidence of smoking within the premises. Active smoking was observed least in educational institutes. Smoking aids were not seen in any educational institute and healthcare facilities. None of the eligible accommodation and eating facilities in the entire city had an identified designated smoking area (DSA) despite some of them permitting indoor smoking. Healthcare facilities were more likely to fine personnel for public smoking than other

facilities. Awareness regarding the Act was seen more among heads of government offices and healthcare facilities.

Being one of the key public areas, transport facilities were also assessed for compliance with the Act. A total of 41 buses (22 government, 19 private) were included in the study. The transport facilities had partial compliance with the provisions of the Act (Table IV). About 73.2% of buses displayed the message of ban on smoking. No person was found to actively smoke in 85.8% of transport facilities. Overall, government buses were observed to be better compliers; however, the difference was not statistically significant.

On average, a public place was observed to be compliant with seven of 10 key indicators. Only 47.5% (95% CI 40.12–55.04) of public places had >80% compliance with Section 4 of the Act. Educational institutes and government offices had good compliance compared to other public places (Table V).

DISCUSSION

We found overall compliance with Section 4 of COPTA to be low. Only 48% of public places had good (>80%) compliance. This was in accordance with a subnational survey conducted in 2014 where 51% of places showed full compliance with smoke-free laws.¹⁶ In our study, compliance with the Act was better than that observed by Tripathy *et al.* (23%), Goel *et al.* (36.1%) and a compliance study conducted in southern Bengaluru (1.9%).^{17–19} However, we observed less compliance

TABLE III. Comparison of compliance in public places of Section 4 of Cigarette and Other Tobacco Products Act (COTPA) 2003

Indicator	Accommodation facilities (n=97)	Education institutes (n=32)	Offices (n=29)	Eateries (n=14)	Health facilities (n=7)	Most visited places (n=4)	p value
Smoking ban signage at the entrance	36 (37.1)	27 (84.4)	24 (82.8)	3 (21.4)	6 (85.7)	2 (50)	<0.001*
Smoking ban signage indoors	91 (93.8)	32 (100)	29 (100)	12 (85.7)	7 (100)	4 (100)	0.227
'No smoking area: Smoking here is an offence' signage	30 (30.9)	30 (93.8)	29 (100)	4 (28.6)	7 (100)	2 (50)	<0.001*
Standard 60 cm × 30 cm signage indoors	23 (23.7)	29 (90.6)	29 (100)	4 (28.6)	7 (100)	0	<0.001*
Authority signage for making complaint	36 (37.1)	30 (93.8)	24 (82.8)	1 (7.1)	5 (71.4)	2 (50)	<0.001*
Message in a specified language	97 (100)	32 (100)	29 (100)	14 (100)	7 (100)	4 (100)	–
No active smoking during observation	82 (84.5)	30 (93.8)	25 (86.2)	8 (57.1)	4 (57.1)	3 (75)	0.020*
No visible ashtrays indoors	90 (92.8)	32 (100)	26 (89.7)	10 (71.4)	7 (100)	4 (100)	0.050*
No lighter or matchbox indoors	93 (95.9)	32 (100)	28 (96.6)	10 (71.4)	7 (100)	4 (100)	0.024*
No cigarette stubs inside the location	73 (75.3)	27 (84.4)	25 (86.2)	7 (50)	4 (57.1)	1 (25)	0.013*
No matchsticks on the floor	65 (67)	26 (81.3)	22 (75.9)	7 (50)	2 (28.6)	1 (25)	0.017*
No tobacco odour inside the location	72 (74.2)	29 (90.6)	26 (89.7)	7 (50)	4 (51.7)	1 (25)	0.001*
Presence of DSA indoors	0	0	0	0	0	0	–
Prior sensitization regarding the Act	59 (60.8)	26 (81.3)	22 (75.9)	11 (78.6)	7 (100)	3 (75)	0.082
Facility fined violators in past 1 year	0	4 (12.5)	13 (44.8)	0	4 (57.1)	2 (50)	<0.001*

All values in parentheses are percentages DSA designated smoking area

TABLE IV. Comparison of compliance by government and private transport facilities of Section 4 of Cigarette and Other Tobacco Products Act (COTPA) 2003

Indicator	Total (n=41)	95% CI	Government (n=22)	Private (n=19)	p value	Odds ratio	95% CI
Signage of ban on smoking inside the vehicle	30 (73.2)	57.1–85.8	18 (81.8)	12 (63.2)	0.290	2.6	0.6–10.9
Signage displaying the name of the authority for making complaint	15 (36.6)	22.1–53.1	10 (45.5)	5 (26.3)	0.330	2.3	0.6–8.8
No active smoking during observation	35 (85.8)	70.8–94.4	20 (90.9)	15 (78.9)	0.390	2.7	0.4–16.5
No stubs inside the vehicle	29 (70.7)	54.5–83.9	18 (81.8)	11 (57.9)	0.168	3.3	0.8–13.5
No matchsticks on the floor	26 (63.4)	46.9–77.9	13 (59.1)	13 (68.4)	0.746	0.7	0.2–2.4
No tobacco odour in the vehicle	33 (80.5)	65.1–91.2	18 (81.8)	15 (78.9)	1.000	1.2	0.3–5.6

All values in parentheses are percentages

TABLE V. Comparison of overall compliance of Section 4 of Cigarette and Other Tobacco Products Act (COTPA) 2003

Category	Average number of key indicators fulfilled per facility	Number of facilities with good compliance (>80%)	p value
Accommodation facilities	6/10	21 (21.6)	<0.001
Educational institutes	9/10	31 (96.9)	
Government offices	9/10	28 (96.6)	
Eateries	4/10	2 (14.3)	
Healthcare facilities	8/10	5 (71.4)	
Most visited places	6/10	0	

compared to other studies conducted in the states of Himachal Pradesh and Punjab where the overall compliance was >80% and 83.8%, respectively.^{20,21}

Educational institutes (96.6%) and government offices (96.9%) were observed to be significantly better compliers than other facilities. This was in agreement with a study conducted in Himachal Pradesh in 2013 where educational institutions and offices recorded the highest compliance.²⁰ Educational institutes (65%) and healthcare facilities (62%) were the best compliers in a study by Kumar *et al.*¹⁶

About 96% of public places had a signage signalling ban on smoking, which was similar to a study from Rajasthan where 90% of places displayed the 'No-smoking' signage.²² We found that compliance with the provisions of the Act was better than that in the studies conducted in Himachal (42.8%), Chandigarh (20%), multi-centric survey (67%), Bihar (26%), Karnataka (7.5%) and Bengaluru (41.4%).^{16,17,20,23–25} No smoking signs were seen in 71% and 31% of public places in studies conducted in Turkey and Uganda, respectively.^{26,27} In our study, the signage signalling ban on smoking inside the building was present in almost all the facilities with no statistically significant difference across the different categories (85.7%–100%). Signages were seen more at hotels/restaurants (75%) and educational institutes (66.6%) in Chandigarh, while Kumar *et al.* reported that offices (62.2%) were the best compliers in this regard.^{18,20} A subnational survey reported similar compliance pertaining to the signage in accommodation facilities, healthcare facilities, educational institutes and offices (71%–73%).¹⁶

A standard signage of 60 cm×30 cm signalling a ban inside the building was seen by us at 50.2% of places. On the contrary, in Rajasthan, 99% of signages were as per the COTPA specifications.²² Standard signages in public places as per the specifications of the Act were only 6.9% in Bengaluru, 11.3% in Raipur and 5% in northern India.^{25,28,29}

Signage displaying the name of the authority to whom a complaint can be made in case of violation of the Act was seen at 53.6% of places. This compliance was high compared to a study conducted in Bengaluru where such signages were displayed in only 4.6% of locations and in a north Indian study where such a signage was not found at any public place.^{25,29}

We observed active smoking at 17% of sites in the city. This was similar to other studies where active smoking was observed at few public places (12.3%–19.5%).^{18,20,24,26–28} Poor compliance with the prohibition of public smoking was observed in Chandigarh (52.5%), Mysore (49%) and in a north Indian study where active smoking was seen in about 25% of public places.^{17,29,30} We observed more active smoking in the premises of healthcare facilities and eateries (42.9% each). Eateries (17%) had the worst compliance in a national survey, though healthcare facilities had the highest compliance in the survey.¹⁶

We did not find smoking aids such as ashtrays and lighters in over 90% of places. This was in accordance with the nationwide survey (92%), Chandigarh study (86.1%), Rajasthan (96%), southern Bengaluru (94%) and Raipur (84%) and a state survey where smoking aids were absent at 83.7% of places.^{12,16,18,20,22,28} However, smoking aids were present at a high percentage of places in studies conducted by Tripathy *et al.* (65%),¹⁷ and from studies in Bihar (33%)²³ and Mysore (37%).³⁰ Only 7.2% of accommodation facilities in our study provided such aids; however, smoking aids were seen at about 55.6% and 21% of accommodation facilities in studies conducted by Kumar *et al.*¹⁶ and Goel *et al.*,²¹ respectively.

Cigarette/*beedi* stubs inside a location were not found in almost three-quarters of the places. Similarly, in other studies, tobacco litter was absent in the majority of places (64.7%–87%).^{16,19,20,28,29} Relatively poor compliance was seen in other studies, where such remains were seen at a large proportion (47%–92.5%) of public places.^{17,27,30}

Odour of tobacco smoke inside a location was observed in 24% of places providing evidence of recent smoking. Similar compliance was seen in studies where 68.5%–92% of places were found to lack tobacco odour.^{16,18,22,28}

About 13% of public facilities had issued a challan for violation of the Act in the year prior to the study. In Bengaluru, none of the public facilities had collected any fine for smoking in public.²⁵

About 73% of buses had signages banning smoking inside the vehicle. However, Kumar *et al.* observed such signages inside 100% of vehicles.²⁰ Kumar and Tomar found that only 11.8% of vehicles had such a warning displayed inside the vehicle.²⁴ In 15% of vehicles (9.1% government v. 21.1% private), active smoking was observed; a survey had similar findings where a person smoking was observed in 13% of vehicles.²⁰ Poor compliance was observed in Karnataka, where active smoking was seen in 44.1% of facilities.²⁴ Remains of cigarette/*beedi* were seen inside 29.2% of vehicles; this proportion was 15% in a study by Kumar *et al.*²⁰ Absolute non-compliance was seen in Karnataka where cigarette/*beedi* stubs were found in 100% of vehicles.²⁴ Tobacco odour was evident to us in 19.5% of vehicles. In previous surveys conducted in Himachal Pradesh and Karnataka, this proportion was found to be 11% and 41.2%, respectively.^{20,24}

Limitations

Owing to the limited cross-sectional duration of observation of a facility for 30–60 minutes, the possibility of underestimation of the violation of the Act cannot be ruled out. Moreover, the study could not elicit the reasons why some facilities were less compliant compared to others. The study would have been strengthened if it had a qualitative component.

Conclusion and recommendations

In the study, we observed smoking in public places, which is a clear violation of the Act. Although fines can be imposed upon the violators of the Act, yet very few get penalized. Moreover, the meagre amount of fine of ₹200 may not be a deterrent for habitual offenders. Therefore, the amount of penalty should be increased and the Act should be implemented without any leniency.

Owing to the prohibition on smoking in public places, many users have switched to other forms of tobacco; so the provisions of the Act must also be extended to smokeless tobacco products. The 'smoke-free zones' emphasized in the Act must be replaced with 'tobacco-free zones' with focus on both smoke as well as smokeless products.

No DSA were observed in accommodation facilities and eateries, yet they permitted smoking indoors. Such facilities should be directed to have DSA with specifications as per the Act.

The previous survey,²⁰ carried out in Himachal Pradesh in 2013, showed a high level of compliance with various clauses of the Act. This study, carried out after a span of 5 years, has different findings which highlight that the level of compliance has reduced from >80% to about 48%.

Implementation of any law has to be substantiated with sustained compliance with its provisions. We found this to be lacking. Emphasis needs to be laid on awareness campaigns regarding various provisions of the Act. Updated guidelines for implementation of the Act should be periodically sent to both public and private institutes.

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Conflicts of interest. None declared

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