

# Cognizance towards implementation and adherence of Cigarette and other Tobacco Products Act (COTPA) directives - A descriptive cross-sectional study among security guards in Goa

Ridhima Gaunkar, Vinita Sanjeevan, Akshatha Gadiyar, Vinayak Kamath, Soni Rajput, Amita K. Kamat

Department of Public Health Dentistry, Goa Dental College and Hospital, Bambolim, Goa, India

## ABSTRACT

**Objective:** The use of tobacco has proven to be one of the leading cause of preventable premature deaths and diseases across the globe. The World Health Organization (WHO) claims that tobacco consumption alone kills more people annually as compared to Acquired Immunodeficiency Syndrome (AIDS), alcohol, and other addictions (drugs, etc.) put together. Although the Cigarettes and Other Tobacco Products Act (COTPA) is a powerful Indian national law to curb the tobacco epidemic, the effectiveness of its implementation remains disputed. The current study aims to examine the role of the security guards in the implementation of the COTPA by assessing their awareness. **Method:** A cross-sectional questionnaire-based study was conducted among 258 security guards in Goa to ascertain the knowledge regarding the tobacco legislation in the country. A self-administered 20-item close-ended questionnaire was used to collect information regarding the demographic variables, tobacco use, and knowledge regarding COTPA. Data analysis was done using SPSS version 22.0. **Results:** The mean age of the study participants was  $29.93 \pm 6.93$  years. Overall, 68.6% of the study participants were aware of any tobacco control law in India. It was observed that 71% of the subjects had adequate knowledge of the COTPA. The participants with higher secondary educational levels had significantly higher knowledge scores. **Conclusion:** The overall awareness of the security guard was good but there is a need to provide in-depth knowledge on certain key aspects of the COTPA. Efforts should be made to train the security personnel to increase their awareness of the act.

**Keywords:** Awareness, India, law enforcement, tobacco

## Introduction

Tobacco is the most easily available and legally permissible addictive substance with certain restrictions, which causes a colossal burden on the health problems in the general population.<sup>[1]</sup> The health concerns associated with tobacco are myriads and vast like cancer, cardiovascular problems, impotency, increased morbidity, and

mortality to name a few.<sup>[2]</sup> Although media campaigns and health education by the government play an important part in educating the masses, they alone cannot be sufficient in controlling the severity of the current situation. Strict laws, acts, and legislative actions are imperative to reduce the given burden of the disease.

The World Health Assembly in May 2003 adopted the Framework Convention on Tobacco Control (FCTC) for controlling tobacco use across its member nations using a five-step framework.<sup>[3]</sup> India has been the forerunner in the implementation of anti-tobacco

**Address for correspondence:** Dr. Ridhima Gaunkar, Assistant Professor, Department of Public Health Dentistry, Goa Dental College and Hospital, Bambolim - 403 202, Goa, India. E-mail: drbirmani@gmail.com

Received: 17-09-2021

Revised: 14-12-2021

Accepted: 15-12-2021

Published: 14-05-2022

### Access this article online

#### Quick Response Code:



Website:  
www.jfmpc.com

DOI:  
10.4103/jfmpc.jfmpc\_1873\_21

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow\_reprints@wolterskluwer.com

**How to cite this article:** Gaunkar R, Sanjeevan V, Gadiyar A, Kamath V, Rajput S, Kamat AK. Cognizance towards implementation and adherence of cigarette and other tobacco products act (COTPA) directives - A descriptive cross-sectional study among security guards in Goa. J Family Med Prim Care 2022;11:1989-95.

legislation and was one of the first few countries that ratified the FCTC.<sup>[3]</sup> The Government of India in 2003 formulated “The Cigarettes and Other Tobacco Products Act (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply, and Distribution) (COTPA).” Some of the rules notified were a ban of smoking in public places, a ban on advertisements of tobacco products, and a prohibition of the sale of tobacco products to minors and within 100 yards of educational institutions in 2004.<sup>[4]</sup> Despite these acts put in place by the Government of India, their effectiveness in implementation remains largely a challenge. According to the GATS-2 survey, almost one-third (35%) of the adults use tobacco and 23% use the smokeless form of tobacco. There has been an alarming increase in smoking, and by 2030, up to 10% of deaths in the world may be tobacco-related.<sup>[1]</sup>

The Government of Goa had formulated “The Goa Prohibition of Smoking and Spitting Act, 1997 (Goa Act 5 of 1999)” to provide for prohibiting the use of tobacco in any form and spitting in public work or use and in public service vehicles in the state of Goa.<sup>[5]</sup> The overall tobacco use prevalence has increased among adults in Goa from 8.8% in the Global Adult Tobacco Survey (GATS 1) 2009–2010 to 9.7% in (GATS2) 2016–2017. The use of tobacco in any form among men in the state of Goa was 7.9% and that among women was 4%. The smoking form of tobacco has lessened among adults from 4.8 to 4.2% in this period. Smokeless tobacco use has gone up from 4.6 to 6.5% with Khaini being the most commonly used.<sup>[5,6]</sup>

In India, the implementation of COTPA lies with various departments relevant to the act, for example, the departments of Police, Food and Drug Administration, Health, Education, Labor, Transport, and Railways. However, despite the reportedly comprehensive legislation put in place by the Indian Government, effective implementation of tobacco control policies requires considerable multisectoral efforts.<sup>[7]</sup>

The security guards employed in various organizations are in good capacity to facilitate the successful enactment of or reporting any violation of COTPA to the concerned nodal officers assigned at their respective institutions. Their active support in the implementation of the act may be a strong contributing factor to the tobacco-free campuses or tobacco-free workplaces. Moreover, family physicians provide comprehensive clinical care across all age groups and organ systems. Hence, creating awareness and supporting the implementation of the existent regulations of tobacco, the burden on the healthcare systems, that is, our caregivers, is drastically reduced enabling our healthcare resources to be better utilized. Hence, the objective of the current study was to assess the awareness of security guards toward the implementation and adherence of COTPA directives in Goa.

## Material and Methods

### Survey design

A cross-sectional survey was carried out using a self-administered questionnaire among 258 security guards employed with

various organizations in Goa. This study was done under the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines (2014)<sup>[8]</sup> and was conducted over 11 months (March 2019 to January 2020). Ethical clearance was obtained from the Institutional Review Board before conducting the study and informed consent was obtained from the participants willing to be a part of the study.

### Participants

The largest corporation dedicated to developing human resources in the state of Goa to make available trained and skilled security personnel was contacted. The security guards recruited under the organization were at least VIIIth grade pass and posted at various government departments, educational institutions, autonomous bodies, and business establishments across the state. Considering an 8-h duty session, multiple security guards (10–12) were posted at a single site.

### Survey instrument

The survey items were developed based on a literature review<sup>[9-12]</sup> and were validated by five experts in the field of tobacco control. The study tool consisted of 20 items and was divided into three parts. Part 1 consisted of information on sociodemographic characteristics. Part 2 assessed information on the current tobacco use (smoking and smokeless). Part 3 was designed based on four major provisions of the COTPA act. The questionnaire was pilot-tested on 30 participants to detect any problem with the design of the questionnaire, ambiguity of words, inability to understand the questions, etc., Based on the feedback, revisions were made to make it more appropriate and specific to the aim of the study, and hence, a valid questionnaire. The content validity score was calculated using the index developed by Martuza *et al.*<sup>[13]</sup> and it was observed to be 0.80. For the analysis purpose, a score less than 7 was graded as “poor awareness,” a score ranging from 7 to 10 was graded as “adequate awareness,” and scores greater than 10 were “good awareness.”

### Sample size calculation and sampling technique

The sample size calculation was done based on the results obtained from the pilot study done on 30 participants. Considering the prevalence of knowledge regarding COTPA to be 79% and precision to be  $\pm 10\%$  at 95% confidence interval (CI) using the formula  $(1.96)^2 \frac{pq}{L^2}$ , where  $P$  = Prevalence,  $q$  =  $100 - P$ , and  $L$  = precision, the sample size estimated was 255 after considering 10% of nonresponse rate. The total guards invited were 280, out of which 258 gave a complete response.

A two-stage cluster sampling was done to ensure an adequate representation of the population. Goa is geographically divided into 2 districts (North and South) and further subdivided into 12 talukas. In the first stage of sampling, a sample of five clusters where security guards were posted was randomly selected from each taluka. In the second stage, the selection of security guards was done randomly within each cluster to form the final sample. No knowledge or training regarding the tobacco legislation was imparted before the administration of the questionnaire to the security guards to circumvent any bias.

## Data collection

Two Dental Public Health experts were deployed for the purpose. The objective and procedure of the study were explained to the participants before beginning the data collection. Scrutiny of all filled-in questionnaires was done on a day-to-day basis. After the data collection, a sensitization program was conducted for the security guards regarding the four major provisions of the COTPA act as well as the ill effects of tobacco. An anti-tobacco pledge was also taken so that they were aware of their responsibilities under this law.

## Statistical analysis

The data collected were entered into the Microsoft Excel spreadsheet and analyzed using IBM SPSS Statistics, version 22.0 (Armonk, NY: IBM Corp). Descriptive data were presented in the form of frequency, the percentage for categorical variables, and in the form of mean, median, standard deviation, and quartiles for continuous variables. The comparison of the knowledge scores according to gender and tobacco use was done using the Mann–Whitney U test and Kruskal–Wallis test was used to compare according to the age groups, years in service, and education. A *P* value <0.05 was considered statistically significant.

## Results

The demographic characteristics of the study participants are presented in Table 1. The mean age of the study participants was  $29.93 \pm 6.93$  years. The majority of the study participants were below 35 years of age (79.8%), males (72.5%), completed secondary school (53.92%), and did not use tobacco (84.1%). Overall, 68.6% of the study participants responded that they are aware of the act/law regarding tobacco products.

A majority of the study participants (78.7%) were aware that smoking is banned in public places. The knowledge regarding the penalty if found smoking in areas prohibited by the law was also good (72.9%). Regarding the awareness of health problems associated with tobacco use, almost half of the study participants were not aware. It was observed that only 32% were aware that tobacco products cannot be advertised through the medium of mass media as well as the ban on the sale of loose cigarettes [Table 2].

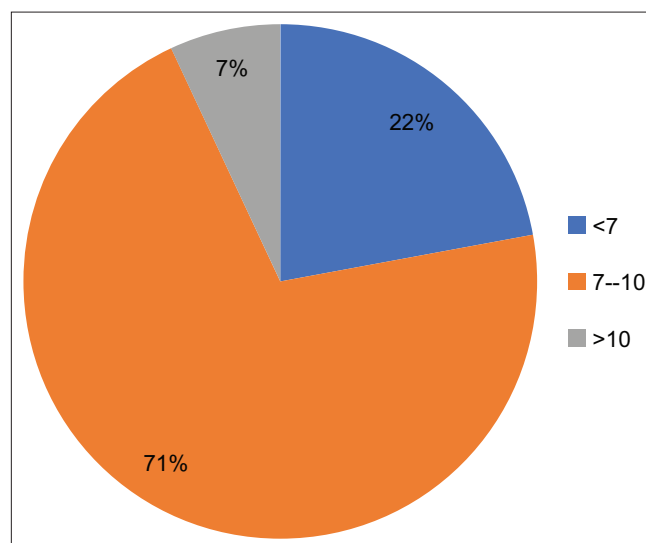
Overall, the participant's response suggests that around 71% of the subjects have adequate knowledge of the COTPA Act [Figure 1]. No significant difference in the knowledge score was observed between the age groups, gender, years in service, and tobacco usage [Table 3]. However, the participants with higher secondary educational levels had significantly higher knowledge scores as compared to middle school ( $P = 0.003$ ) [Table 4].

## Discussion

There is an urgent need to curb the tobacco epidemic and to strengthen the enforcement of COTPA, by sensitizing the

**Table 1: Distribution of study participants according to the sociodemographic status, awareness regarding tobacco, and knowledge scores**

	Frequency	Percentage
Age		
<25 Years	85	32.9
26-35 Years	121	46.9
>36 Years	52	20.2
Gender		
Male	187	72.5
Female	71	27.5
Education		
Illiterate	1	0.4
Middle school	73	28.3
Secondary school	139	53.9
Higher secondary	44	17.1
Diploma	1	0.4
Years in service		
<1 Year	65	25.2
2-3 Years	74	28.7
>3 Years	119	46.1
Tobacco use		
Yes	41	15.9
No	217	84.1
Form of tobacco		
1	13	31.7
2	25	61.0
3	3	7.3
Awareness regarding presence of COTPA		
Yes	177	68.6
No	81	31.4
Knowledge score		
<7	57	22.1
7-10	183	70.9
>10	18	7.0



**Figure 1: Knowledge scores among the study participants**

enforcement personnel regarding provisions of the act. To the best of our knowledge, the present study is the first in India

**Table 2: Awareness regarding COTPA and adverse effects of tobacco use among study participants**

Awareness about	Absent	Present
Prohibition of smoking at public places	55 (21.3%)	203 (78.7%)
Penalty amount if found smoking in areas prohibited by the law	70 (27.1%)	188 (72.9%)
Ban on sale of tobacco products near schools/colleges	17 (6.6%)	241 (93.4%)
Legal age for buying or selling tobacco products	130 (50.4%)	128 (49.6%)
Display of pictorial health warnings on tobacco products	24 (9.3%)	234 (90.7%)
Health problems caused due to tobacco use	108 (41.9%)	150 (58.1%)
Harmful nature of passive smoking	23 (8.9%)	235 (91.1%)
Ban on advertisements related to tobacco	176 (68.2%)	82 (31.8%)
Ban on sale of loose cigarettes	175 (67.8%)	83 (32.2%)
Authority to be reported in case of violation	146 (56.6%)	112 (43.4%)
Ban on presence of ashtrays, matchsticks, and lighters in no smoking zones	72 (27.9%)	186 (72.1%)
Existence of a national tobacco quit line number	176 (68.2%)	(31.8%)
Places that can have separate smoking zones	135 (52.3%)	123 (47.7%)

**Table 3: Comparison of knowledge scores according to the demographic variables of the study participants**

	n	Mean (SD)	Range	Median (Q1-Q3)	P
Age					
<25 Years	85	8.04 (2.09)	0-11	8 (7-9)	0.75 (NS) <sup>#</sup>
26-35 Years	121	7.88 (1.99)	0-12	8 (6.5-9)	
>36 Years	52	7.9 (2.03)	2-12	8 (7-9)	
Gender					
Male	187	7.98 (1.97)	0-12	8 (7-9)	0.80 (NS) <sup>##</sup>
Female	71	7.82 (2.17)	0-12	8 (7-9)	
Years in service					
<1 Year	65	7.89 (2.24)	0-11	8 (7-9.5)	0.63 (NS) <sup>#</sup>
2-3 Years	74	8.05 (2.09)	0-11	8 (7-10)	
>3 Years	119	7.88 (1.87)	3-12	8 (6-9)	
Education					
Illiterate + Middle school	74	7.46 (1.96) <sup>a</sup>	0-11	8 (6-9)	0.009* <sup>#</sup>
Secondary school	139	8.01 (1.92)	0-12	8 (7-9)	
Higher secondary + Diploma	45	8.47 (2.32) <sup>a</sup>	0-12	9 (7-10)	
Tobacco use					
Yes	41	7.51 (1.85)	3-11	8 (6-9)	0.08 (NS) <sup>##</sup>
No	217	8.01 (2.05)	0-12	8 (7-10)	

<sup>a</sup>Kruskal-Wallis and <sup>##</sup>Mann-Whitney U test. \*P<0.05 significant (S), \*P>0.05 nonsignificant (NS)

to explore the awareness levels of COTPA among security guards. Goa being a tourist hub and metropolitan attracts people from various cultural backgrounds. Ensuring that laws regarding tobacco use are properly enforced becomes even more imperative.

As previous studies have considered different study populations, a comparison is done wherever possible. A majority of the study subjects were males which was in agreement with the previous studies.<sup>[14]</sup> The prevalence of tobacco use among the security personnel was 15.9% which was low when compared to the observations made by Kalyani *et al.*<sup>[15]</sup> and a survey done by GATS-2.<sup>[6]</sup> The lower use of tobacco is indicative of the good practices among the security guards which is surprising considering the nature of their jobs which predisposes them to more tobacco use due to high stress and odd working hours, like drivers.

The use of smokeless tobacco was higher than the smoked form. This fact highlights the recent WHO report stating that

maximum smokeless tobacco-related cancer occurs in the southeast Asian regions.<sup>[16]</sup> With the recent price surge and a ban on selling of loose cigarettes, easier access, and reduced cost of smokeless tobacco, these products seem to be gaining popularity. Add to this the belief that smokeless tobacco is harmless in comparison to cigarettes coupled with the ease of placement in the mouth for a longer duration explains the recent surge in its use.<sup>[17,18]</sup>

In the present study, it was observed that 68.6% were aware of the law/act regarding tobacco products which was similar to the study conducted by Ahuja *et al.*<sup>[12]</sup> among police personnel and higher when compared to the previous studies by Rao *et al.*<sup>[9]</sup> and Sharma *et al.*<sup>[14]</sup> among the general population. The literacy rate in Goa has seen an upward trend and is 88.70% as per the 2011 population census. Of that, male literacy stands at 92.65% while female literacy is at 84.66%.<sup>[19]</sup> The importance of literacy in health education cannot be undermined with newspapers, radios, billboards, etc., serving as the domain. Also, the knowledge

**Table 4: Association of knowledge scores with demographic factors and tobacco use**

	Knowledge			Total	Chi-square test	
	<7	7-10	>10		Chi-square value	P
<b>Age</b>						
<25 Years	16 18.8%	61 71.8%	8 9.4%	85 100.0%	1.99	0.74 (NS)
26-35 Years	30 24.8%	84 69.4%	7 5.8%	121 100.0%		
>36 Years	11 21.2%	38 73.1%	3 5.8%	52 100.0%		
<b>Gender</b>						
Male	40 21.4%	131 70.1%	16 8.6%	187 100.0%	2.66	0.27 (NS)
Female	17 23.9%	52 73.2%	2 2.8%	71 100.0%		
<b>Education</b>						
Illiterate + Middle school	23 31.1%	50 67.6%	1 1.4%	74 100.0%	12.40	0.02*
Secondary school	27 19.4%	102 73.4%	10 7.2%	139 100.0%		
Higher secondary + Diploma	7 15.6%	31 68.9%	7 15.6%	45 100.0%		
<b>Years in service</b>						
<1 Year	12 18.5%	48 73.8%	5 7.7%	65 100.0%	1.56	0.82 (NS)
2-3 Years	15 20.3%	53 71.6%	6 8.1%	74 100.0%		
>3 Years	30 25.2%	82 68.9%	7 5.9%	119 100.0%		
<b>Tobacco use</b>						
Yes	12 29.3%	27 65.9%	2 4.9%	41 100.0%	1.62	0.45 (NS)
No	45 20.7%	156 71.9%	16 7.4%	217 100.0%		

Chi-square test. \* $P < 0.05$  (S) and  $P > 0.05$  (NS)

scores significantly increased with the higher educational level of the study participants which supports the above argument.

When talking about the ill effects of tobacco only 58% of the study subjects were aware of all the health problems caused due to tobacco which was comparatively low compared to the previous studies.<sup>[10,11]</sup> A habit can be easily picked up under stress or peer pressure if we are ignorant of its evils, hence, increasing the effectiveness of health education can aid in curbing this menace.

A majority of the study subjects knew that smoking is banned in public places. This was in line with the previous studies,<sup>[9,10]</sup> which is a positive indication and was even higher as compared to the study conducted by Panda *et al.*<sup>[11]</sup> Good knowledge regarding the above is indicative of witnessing the tight law enforcement by the concerned personnel.

The awareness regarding the ban on the sale of tobacco products to minors and near educational institutions was high and is in line with the previous studies. Good knowledge regarding this can help curb the illicit use of tobacco among the minor and teenage

population with the security guards serving as a vigilante and immediate reporting the issues to the supervisors and concerned personnel.<sup>[17,18]</sup>

This study brings to light the fact that although there is general awareness about the presence of COTPA and some of the most talked-about aspects of the law, there is a lack of in-depth knowledge regarding the various other important sections of the law, that is, ban on the sale of loose cigarettes, ban on the advertisement of tobacco products, reporting of violations, presence of national helpline number, etc., These results are similar to the study conducted by Eshwari *et al.*<sup>[20]</sup> on smokers. Moreover, a community-based study conducted by Goel<sup>[21]</sup> highlighted that the prevalence of loose cigarettes sale was as high as 93.05% in the selected four Indian states. The ease with which loose cigarettes are available may be indirectly responsible for the poor awareness of the purchasability of cigarettes. Another study by Kapoor<sup>[22]</sup> highlighted violations against the sponsorship/advertisement component (section 5) of COTPA in the Indian Premier League-13, 2020, wherein the teams were sponsored by the tobacco industry brands and companies like Kamla Pasand and ITC Limited were listed as associate sponsors

for the championship. Given that the general population including security guards is an audience for televised cricket, strong compliance to the law is warranted by cricket associations to avoid false notions among the viewers.

Thus, formal training and capacity building of the security personnel on the implementation of COTPA, its provisions, and penalties and to incorporate them into the present workforce for the anti tobacco lobby is essential. Hence, there is a need to increase the awareness, knowledge, and integrate the attitudes of the security personnel for the effective implementation of COTPA. Effective implementation of COTPA, improved awareness of the masses, and support from the healthcare systems together is the key to tackling the menace of tobacco in our country.

### Limitations

The study has a few limitations. Since it is cross-sectional in design, it is limited in causal explanations. As the study was carried out in a small sample, it needs to be replicated in other multicentric study samples.

### Recommendations

Based on the above findings, we highly recommend several actions. First, formal training and capacity building of the security personnel on the implementation of COTPA, its provisions, and penalties are needed. Second, delineation of the responsibilities of the various coordinating sectors and the creation of coordination mechanisms is essential. Third, the delegation of power and responsibility to officials like security guards who are directly involved with public dealing will help in the effective implementation of the act along with supportive supervision by higher-ranking officials. This could also decongest the burden and boost the morale of the implementers, ensuring a prim downstream approach.

### Conclusion

In conclusion, a majority of the study participants had adequate knowledge regarding the COTPA. The awareness of COTPA significantly increased with better education but better efforts are required for the complete understanding of the law. However, training the security personnel will also be useful for the proper implementation of the act.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

### References

1. Bhawna G. Burden of smoked and smokeless tobacco consumption in India-results from the global adult tobacco survey India (GATS-India)- 2009-2010. *Asian Pac J Cancer Prev* 2013;14:3323-9.
2. Onor IO, Stirling DL, Williams SR, Bediako D, Borghol A, Harris MB, *et al.* Clinical effects of cigarette smoking: Epidemiologic impact and review of pharmacotherapy options. *Int J Environ Res Public Health* 2017;14:1147. doi: 10.3390/ijerph 14101147.
3. Reddy KS, Gupta PC. Tobacco Control in India. New Delhi: Ministry of Health and Family Welfare, Government of India; 2004. p. 43-7.
4. The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003. New Delhi, India: Government of India; 2003.
5. Goa Prohibition of Smoking and Spitting Act, 1997 (Goa Act 5 of 1999). Available from <http://www.bareactslive.com/GOA/GOA139.HTM>. [Last accessed on 2021 Jun 05]
6. Chaturvedi P, Sarin A, Seth SS, Gupta PC. India: Steep decline in tobacco consumption in India reported in second Global Adult Tobacco Survey (GATS 2017). Available from: <https://blogs.bmj.com/tc/2017/06/23/india-steep-decline-in-tobacco-consumption-in-india-reported-in-second-global-adult-tobacco-survey-gats-2017/>. [Last accessed on 2021 Jun 08].
7. Kaur J, Jain DC. Tobacco control policies in India: Implementation and challenges. *Indian J Public Health* 2011;55:220-7.
8. Von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP, *et al.* The strengthening the reporting of observational studies in epidemiology (STROBE) statement: Guidelines for reporting observational studies. *Int J Surg* 2014;12:14959.
9. Rao AR, Dudala SR, Bolla CR, Kumar BR. Knowledge attitude and practices regarding the cigarettes and other tobacco products act (COTPA) in Khammam, Andhra Pradesh. *Int J Res Health Sci* 2013;1:96-102.
10. Ravishankar TL, Chandra S, Tirth A, Tandon V, Ain TS. Knowledge, attitude and practice of retail tobacco vendors and school personnel on Indian tobacco control laws (COTPA) in Moradabad City, India. *Int J Contemp Med Res* 2016;3:3365-9.
11. Panda B, Rout A, Pati S, Chauhan AS, Tripathy A, Shrivastava R, *et al.* Tobacco control law enforcement and compliance in Odisha, India--implications for tobacco control policy and practice. *Asian Pac J Cancer Prev*. 2012;13(9):4631-7.
12. Ahuja N, Kathiresan J, Anand T, Isaakidis P, Bajaj D. I have heard about it for the first time from you! Implementation of tobacco control law by police personnel in India. *Public Health Action* 2018;8:194-201.
13. Martuza VR. *Applying Norm-referenced and Criterion-Referenced Measurement in Education*. Allyn and Bacon; 1977.
14. Sharma N, Anand T, Grover S, Kumar A, Singh MM, Ingle GK. Awareness about anti-smoking related laws and legislation among general population in slums of Delhi, India. *Nicotine*

- Tob Res 2018;20:643-8.
15. Kalyani V, Sharma S. Awareness of oral cancer among the security guards working in AIIMS, Rishikesh: An exploratory survey. *Indian J Adv Nurs* 2016;2:30-7.
  16. Gupta PC, Ray CS. Smokeless tobacco and health in India and South Asia. *Respirology* 2003;8:419-31.
  17. Thakur JS, Paika R. Determinants of smokeless tobacco use in India. *Indian J Med Res* 2018;148:41-5.
  18. Salvi A, Sura T, Karaye I, Horney JA. Factors associated with dependence on smokeless tobacco, Navi Mumbai, India. *Heliyon* 2019;5:e01382.
  19. Female literacy, sex ratio show a rise [Published on 2017 Mar 27]. Available from: <https://www.heraldgoa.in/Goa/Female-literacy-sex-ratio-show-a-rise/113088>. [Last accessed on 2021 May 31].
  20. Eshwari K, Kulkarni MM, Bhagawath R, Mullapudi S, Selvarajan T, Kamath VG. Ban on sale of loose cigarettes: Awareness, perceptions and practices among vendors and smokers in Karnataka, India. *Indian J Commun Health* 2020;32:394-8.
  21. Goel S, Kar SS, Joseph N, Singh RJ, Patro B, Pala S, *et al.* Prevalence and factors associated with the sale of loose cigarettes at point of sale: A cross-sectional analytical study from four Indian states. *Indian J Tuberc* 2021;68S: S39-S47.
  22. Kapoor S, Lal P, Yadav A. Indirect tobacco advertising, promotion and sponsorships in the Indian Premier League 2020: Tobacco Industry's continuous presence in Indian cricket. *Indian J Tuberc* 2021;68S: S7-13.