

# Assessment of Knowledge Gap on Cigarettes and Other Tobacco Products Act (COTPA) among Tobacco Vendors in Puducherry: A Mixed-Method Study

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## Abstract

**Background:** Tobacco usage has been identified as a leading preventable cause of mortality and is responsible for six million fatalities per year globally. India had enacted COTPA in 2003. Tobacco vendors are one of the key stakeholders for Cigarettes and Other Tobacco Products Act (COTPA) implementation. **Objective:** To assess the knowledge gap on COTPA and to explore the perceived factors influencing implementation of COTPA among tobacco vendors in Puducherry. **Materials and Methods:** A mixed-method study was conducted among tobacco vendors from Point of Sale (PoS) around 230 educational institutions (schools and degree colleges) in Puducherry for three months. Simple random sampling was applied to select educational institutions and the tobacco vendors from PoS located around these institutions were included. Data capture was done using a pretested, face-validated questionnaire incorporated in Epicollect software 5 and data analysis by SPSSv24. Purposive sampling was employed to conduct in-depth interviews among tobacco vendors till the point of saturation and manual content analysis performed. Written informed consents were sought. Institutional Ethical Committee approval was obtained. **Results:** Majority (95.7%) reported that they were aware of tobacco control legislation, but only one person had heard of COTPA. Awareness about the display of signage boards at PoS was observed in 75.7% vendors. Around 41.7% reported that they should not advertise any kind of tobacco products. Three major themes were identified: facilitators, barriers, and suggested measures for COTPA implementation. **Conclusion:** Tobacco vendors in Puducherry were aware of tobacco control legislations but not familiar with the COTPA and its provisions. It is necessary to put forth efforts to educate these important stakeholders to be more cognizant of COTPA and to effectively include them in anti-tobacco programs.

**Keywords:** Cigarettes and other tobacco products act, educational institutions, knowledge gap, mixed-method study, points of sale, tobacco vendors

## INTRODUCTION

Tobacco usage has been identified as a leading preventable cause of mortality and is responsible for six million fatalities per year globally.<sup>[1]</sup> In India, about 28.6% of people aged 15 years and above use tobacco in some form.<sup>[2]</sup> By 2030, it is estimated that tobacco usage would be the cause of 10 million annual deaths, with half of those victims aged between 35 and 69 years.<sup>[3]</sup> The World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) was introduced in 2005. It outlines a wide spectrum of evidence-based approaches for decreasing tobacco demand and supply. Moreover, it offers a holistic strategy to tackle the tobacco global epidemic.<sup>[4]</sup> Additionally, in 2008, WHO developed the MPOWER package of six tobacco control initiatives based on

scientific evidence.<sup>[5]</sup> Meanwhile, in the year 2003, Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act was enacted in India.<sup>[6]</sup> But, due to various reasons, there exists a lack of sustained adherence with provisions of Cigarettes And Other Tobacco Products Act (COTPA). It requires immense effort in the future to bring

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a change toward the behavior and societal norms related to tobacco use.<sup>[7]</sup>

To address the current situation of COTPA, the primary action is to increase awareness and create a positive attitude of stakeholders toward COTPA. Any legislation's successful execution is entrusted to different types of parties, each of whom has specific responsibilities and duties.<sup>[8]</sup> One such key stakeholder are the tobacco vendors, who serve as an intermediary between the consumer and the manufacturers.<sup>[7]</sup> With this background, the current study has been one of its first kind which aims to assess the knowledge gap on COTPA and to explore the perceived factors influencing the implementation of COTPA among tobacco vendors in Puducherry.

## MATERIALS AND METHODS

A mixed-method study was conducted among tobacco vendors from Points of sale (PoS) around selected educational institutions over three months (June–August 2022) in Puducherry. The operational definitions for tobacco products, educational institutions, and sale were adopted from the COTPA guidelines.<sup>[6]</sup> Tobacco products were listed as “cigarettes, cigars, cheroots, beedis, pipe tobacco, hookah tobacco, snuff, chewing tobacco, gutka, pan masala, tooth powder containing tobacco.” Educational institutions (schools or degree colleges or Universities) have been defined as “one of the public places where public have access, whether as of right or not.” Sale means “any transfer of property in goods by one person to another, whether for cash or on credit, or by way of exchange, and whether wholesale or retail.”<sup>[6]</sup> Considering, knowledge gap of tobacco vendors about prohibition of smoking in public places to be 18.0% as per existing literature<sup>[7]</sup> and absolute

precision as five in the formula  $n = \frac{Z_{(1-\alpha/2)}^2 pq}{d^2}$ ,<sup>[9]</sup> the sample size was calculated to be 227, which was rounded to the highest figure of 230. The list of educational institutions (schools and degree colleges) in Puducherry was regarded as the sampling frame with which simple random sampling was applied. Tobacco vendors from PoS around the selected schools/colleges were included. If more than one PoS were found, the nearest PoS to the selected educational institution was included. A pre-tested, semi-structured, face-validated questionnaire was incorporated in Epicollect\_5 (v4.2.0; Centre for Genomic Pathogen Surveillance) application for data collection. The data analysis was performed using Statistical Package for the Social Sciences software (SPSS, v24.0; IBM Corp, Armonk, New York). The data has been presented in the form of numbers and percentages for categorical variables and mean and SD/median and IQR for numerical variables. Appropriate test of significance was used to find out the association depending on the nature and distribution of variables like Chi-square test or Fisher's exact test for categorical variables. Values of  $P < 0.05$  was considered to be statistically significant. Purposive sampling was employed for choosing the tobacco sellers who were willing, vocal, and spontaneous for in-depth interviews. An interview guide was prepared based on the quantitative data

results and seven in-depth interviews were carried out till the point of saturation. The investigator was trained for conducting qualitative research prior to the study. Transcripts were made after each interview and all the sessions were audio-recorded. Each in-depth interview lasted for around 25–30 minutes and all the interviews were conducted at a comfortable place and convenient time for the participants. Manual content analysis was performed.<sup>[10]</sup> Written informed consent was sought from all participants. The institute's scientific and ethical committee approval was obtained.

## RESULTS

### Quantitative results

The socio-demographic profile of the participants has been provided in Table 1. The mean (SD) age of the tobacco vendors involved in this study was found to be 47.0 (11.6). The median (IQR) total family income was observed to be INR 15000.0 (10000.0–19000.0). The median (IQR) per-capita family income was found to be INR 3750.0 (2750.0–5000.0). The mean (SD) number of family members among the study population was seen to be 3.9 (1.2).

The Google map application in the smartphone was used for approximate measurement of distance between the institutions and PoS. The reference points considered were entrance/exit of the institution to the selected nearest PoS. The median (IQR) distance of the tobacco PoS from the educational institutions was observed to be 120.0 (85.0–150.0) meters. The details of selected tobacco points of sale and nearby educational institutions have been given in Table 2.

Majority, 220 (95.7%) reported that they were aware of tobacco control legislation, but only one person had heard of COTPA. Only 45 (19.6%) sellers were aware of smoking

**Table 1: Sociodemographic details of tobacco vendors (n=230)**

Socio-demographic details	n (%)
Gender	
Female	89 (38.7)
Male	141 (61.3)
Educational status	
Illiterate	26 (11.3)
Literate	204 (88.7)
Socioeconomic status (Modified B.G. Prasad Classification)*	
Upper class	8 (3.5)
Middle class	219 (95.2)
Lower class	3 (1.3)
Marital status	
Married	221 (96.1)
Single	9 (3.9)
Religion	
Hindu	219 (95.2)
Muslim	9 (3.9)
Christian	2 (0.9)

\*Upper and lower middle class were merged into Middle class

area and 15 (33.3%) were familiar with the specifications related to smoking area/space. Awareness about display of signage boards in public places and around educational institutions were observed to be 174 (75.7%) and 173 (75.2%), respectively. Nearly, three-fourth, 181 (78.6%), vendors had no idea on the specifications to be followed in the display of “no smoking” signage. The common specifications mentioned by the respondents were size and language of the board displayed. Prohibition of advertisement of tobacco products in any form was known to 96 (41.7%) sellers and among those sellers, 41 (42.7%) did not know the specifications included in tobacco advertisement. Around 54 (56.2%) responded that the display of hoarding should not be larger than 60 × 45 cm and only one person mentioned that the display of the tobacco advertisement should not be illuminated or backlit board. Only 59 (25.7%) were aware of the specifications for packaging and labeling of tobacco products. Pictorial health warning on tobacco uses and help-line numbers to quit tobacco were the specifications highlighted by them. A large number of subjects, 202 (87.8%) were not aware of the recommended percentage, i.e. >85% of the pictorial health warning on tobacco product packages.

Nearly half of the participants, 105 (45.7%), were aware of the ban on sale of tobacco products (in any form) within a specified radius around the educational institutions. In addition, those 105 vendors were asked about the specified radius for tobacco PoS around the educational institution under tobacco control legislation and the median (IQR) radius for PoS was 200.0 (100.0–300.0) meters as found from their responses. Only 6 (2.6%) had opted for mandatory sale of cigarettes in packets and not as loose cigarettes. About 162 (70.4%) of sellers were aware of penalties for a person who violates the rules related to tobacco control. Monetary fine was the only penalty cited by the participants. When asked about legal age for a person to be engaged in sale of tobacco products, 177 (77.0%) reported the legal age to be >18 years. Whereas, 109 (47.4%) of sellers reported the legal age for tobacco products to be sold as >18 years.

**Table 2: Details of tobacco points of sale and nearby educational institutions (n=230)**

Details of Points of Sale	n (%)
Location of Point of Sale	
Rural	151 (65.7)
Urban	79 (34.3)
Type of educational institutions near Points of Sale	
College	78 (33.9)
School	152 (66.9)
Type of School near PoS (n=152)	
Govt.	84 (55.2)
Govt. Aided	38 (25.0)
Private	30 (19.7)
Type of College near PoS (n=78)	
Government college	24 (30.7)
Private college	54 (69.3)

The sociodemographic determinants of awareness about COTPA among tobacco vendors have been illustrated in Table 3. Factors such as age, gender, and educational status of the tobacco sellers were associated with their knowledge on COTPA. Vendors who were males, <60 years and literate were having better knowledge regarding COTPA and this was found to be statistically significant ( $P$  value <0.05). The factors associated with COTPA awareness among tobacco sellers based on the location of PoS have been depicted in Table 4. Tobacco vendors from urban points of sale were having better knowledge in comparison with rural vendors and it was found to be statistically significant ( $P$  value <0.05). Tobacco sellers from PoS within 100 meters radius around schools were more aware of tobacco control laws than vendors located within 100 meters radius around colleges which was found to be statistically significant ( $P$  value <0.05).

### Qualitative results

In-depth interviews were conducted among seven tobacco vendors. Out of seven vendors, there were five males and participants <60 years. Six of them were literate belonging to the middle class. The tobacco vendors narrated their perceived facilitators, barriers for COTPA implementation, and also suggested measures for better implementation of COTPA.

Table 5 showcases the results of the thematic content analysis of in-depth interviews. Codes were picked up from the statements given by the respondents. The codes were then clubbed into categories and further grouped into themes. Finally, three major themes were identified as given below.

Facilitators for COTPA implementation were considered as the first theme. As perceived by the tobacco vendors, three categories were recognized within this theme such as act-related, administrative and community factors under which nation-wide coverage, anti-tobacco advertisements, rise in taxes, price hike, awareness on ill-effects, attitude of vendors, and co-operation from authorities were mainly mentioned by the respondents some of which have been stated here.

*“It is very good that Central Government has passed a law all over India for controlling tobacco but it is not followed properly in all states.....In our times, people used to smoke in bus, train, etc.....But now people are conscious about smoking in public places.....In all theatres before screening any movie, a fearful story of cancer victim due to tobacco usage is being shown.....And, in TV warning messages are being displayed if picture involves any smoking or alcohol scenes..... Censor board is also taking it serious and voicing out if smoking is related to heroism.” (54-year-old male vendor)*

*“All prices and taxes have been increased for cigarettes but still people buy them..... But I do not allow my customers to smoke in front of my shop.... If a boy comes wearing school uniform for buying cigarettes, I am hesitant to give them. Sometimes, I do advise them and send them back....but still many students buy saying it's for my father or grandfather....*

**Table 3: Sociodemographic determinants of awareness about COTPA among tobacco vendors**

Variables	Gender			Age			Education		
	Male n (%)	Female n (%)	P	>60 years n (%)	<60 years n (%)	P	Literate n (%)	Illiterate n (%)	P
Awareness about tobacco legislation									
Yes	138 (62.7)	82 (37.3)	0.038*	23 (10.5)	197 (89.5)	<0.001*	200 (90.9)	20 (9.1)	<0.001*
No	3 (30.0)	7 (70.0)		5 (50.0)	5 (50.0)		4 (40.0)	6 (60.0)	
Awareness about smoking area/space									
Yes	36 (80.0)	9 (20.0)	0.004*	0 (0.0)	45 (100.0)	0.005*	45 (100)	0 (0.0)	0.008*
No	105 (56.8)	80 (43.2)		28 (15.1)	157 (84.9)		159 (85.9)	26 (14.1)	
Awareness about display of “No smoking” signage in public places									
Yes	115 (66.1)	59 (33.9)	0.009*	11 (6.3)	163 (93.7)	<0.001*	165 (94.8)	9 (5.2)	<0.001*
No	26 (46.4)	30 (53.6)		17 (30.4)	39 (69.6)		39 (69.6)	17 (30.4)	
Awareness about display of “No smoking” signage in and around educational institutions									
Yes	115 (66.5)	58 (33.5)	0.005*	11 (6.4)	162 (93.6)	<0.001*	164 (94.8)	9 (5.2)	<0.001*
No	26 (45.6)	31 (54.4)		17 (29.8)	40 (70.2)		40 (70.2)	17 (29.8)	
Awareness about prohibition for advertisement of tobacco products									
Yes	68 (70.8)	28 (29.2)	0.012*	6 (6.3)	90 (93.8)	0.020*	90 (93.8)	6 (6.3)	0.04*
No	73 (54.5)	61 (45.5)		22 (16.4)	112 (83.6)		114 (85.1)	20 (14.9)	
Awareness about ban on sale of tobacco products within a specified radius around educational institutions									
Yes	79 (75.2)	26 (24.8)	<0.001*	7 (6.7)	98 (93.3)	0.019*	101 (96.2)	4 (3.8)	0.001*
No	62 (49.6)	63 (50.4)		21 (16.8)	104 (83.2)		103 (82.4)	22 (17.6)	
Awareness about sale of tobacco products to minors									
Yes	77 (70.6)	32 (29.4)	0.006*	12 (11.0)	97 (89.0)	0.608	100 (91.7)	9 (8.3)	0.166
No	64 (52.9)	57 (47.1)		16 (13.2)	105 (86.8)		104 (86.0)	17 (14.0)	
Awareness about specifications for packaging and labeling of tobacco products									
Yes	45 (76.3)	14 (23.7)	0.006*	5 (8.5)	54 (91.5)	0.314	56 (94.9)	3 (5.1)	0.080
No	96 (56.1)	75 (43.9)		23 (13.5)	148 (86.5)		148 (86.5)	23 (13.5)	
Awareness about penalties for violation of tobacco control law									
Yes	113 (69.8)	49 (30.2)	<0.001*	11 (6.8)	151 (93.2)	<0.001*	154 (95.1)	8 (4.9)	<0.001*
No	28 (41.2)	40 (58.8)		17 (25.0)	51 (75.0)		50 (73.5)	18 (26.5)	

\*Chi-square test applied ( $P < 0.05$  considered as statistically significant)

also many buy not wearing uniform so that we can't identify their age....there should be a rule that only if age ID card is shown they can buy alcohol or cigarettes so that students getting into this can be reduced....” (34-year-old male vendor)

The second major theme was considered to be barriers to COTPA implementation. This theme also had three categories similar to that of facilitators under which loopholes, prime focus on smoking form, disparities among states, black marketing, tobacco addiction, ignorance of public, and freebies by retailers were mentioned by the respondents. The quotes shown below illustrate some examples of comments recorded in these categories.

“Cigarettes are given more importance by the law....Hans and Pan usage is not noticed much.... many shops sell these

in black....police also sometimes do not catch Hans and Pan sellers like cigarette sellers near schools....police also cannot be blamed as they have many duties to do.....so supervision cannot be done very often to catch violators....even if police catch those violators, they will be released using their financial influence....” (67-year-old male vendor).

“Grannies and villagers used to chew tobacco after meals and work....that time we were not this much aware of ill effects.... but now many young children also get addicted to smoking, Pan and Hans....they should be definitely educated in their family, schools or colleges about harmfulness of tobacco.....If we wish to follow the law and request customers not to smoke in front of shop, they get offended... our business will only be affected if we tell anything to customers....if we charge for lighters and matchboxes instead of giving it free, people are

**Table 4: Factors associated with COTPA awareness based on tobacco Point of Sale**

Awareness about COTPA	Location of Point of Sale		
	Rural n (%)	Urban n (%)	P
Awareness about display of “No smoking” signage in public places			
Yes	105 (60.3)	69 (39.7)	0.003*
No	46 (82.1)	10 (17.9)	
Awareness about display of “No smoking” signage in and around educational institutions			
Yes	104 (60.1)	69 (39.9)	0.002*
No	47 (82.5)	10 (17.5)	
Awareness about smoking area/ space			
Yes	21 (46.7)	24 (53.3)	0.003*
No	130 (70.3)	55 (29.7)	
Awareness about COTPA	Type of educational institution around the Point of Sale		
	College n (%)	School n (%)	P
Awareness about smoking area/ space			
Yes	21 (46.7)	24 (53.3)	0.044*
No	57 (30.8)	128 (69.2)	

Chi-square test applied ( $P < 0.05$  considered as statistically significant)

**Table 5: Content analysis of in-depth interviews**

Themes	Categories	Codes
Facilitators for COTPA implementation	Act related factors	<ul style="list-style-type: none"> <li>Nationwide coverage</li> <li>Anti-tobacco advertisements</li> </ul>
	Administrative factors	<ul style="list-style-type: none"> <li>Rise in taxes</li> <li>Price hike</li> </ul>
	Community factors	<ul style="list-style-type: none"> <li>Awareness on ill-effects</li> <li>Attitude of tobacco vendors</li> <li>Co-operation from authorities</li> </ul>
Barriers for COTPA implementation	Act related factors	<ul style="list-style-type: none"> <li>Existing loopholes</li> <li>Prime focus on smoking form</li> </ul>
	Administrative factors	<ul style="list-style-type: none"> <li>Disparities among states</li> <li>Limited manpower for monitoring</li> <li>Local authorities protecting violators</li> </ul>
	Community factors	<ul style="list-style-type: none"> <li>Ignorance of public</li> <li>Cultural use of tobacco</li> <li>Black marketing</li> <li>Lack of alternatives for small-scale industries</li> </ul>
Suggested measures for better implementation of COTPA	Act related measures	<ul style="list-style-type: none"> <li>Strict enforcement</li> <li>Complete ban on tobacco</li> <li>Empower educational institutions</li> </ul>
	Administrative measures	<ul style="list-style-type: none"> <li>Awareness generation</li> <li>Regular supervision</li> <li>Introduction of ID system</li> </ul>
	Community measures	<ul style="list-style-type: none"> <li>Self-realization</li> <li>Role of parents and teachers</li> <li>Motivation among vendors</li> </ul>

*not happy.....some asked me to re-hang that ignited jute rope which I stopped hanging recently....” (45-year female vendor).*

The final theme had emerged from a few measures recommended by tobacco vendors for stringent implementation of COTPA in Puducherry. Act-related, administrative, and community measures were the three categories in this theme under which strict enforcement, complete ban on tobacco, empower educational institutions, awareness generation, regular supervision, introduction of ID system, self-realization, role of parents and teachers, motivation among vendors were highlighted by the respondents. The quotes shown below illustrate some sentences expressed by the participants.

*“Tobacco is in the market because companies are producing it. If tobacco production is completely stopped, then no product will come to market....But, small scale beedi industry laborers should be supported by government through alternate livelihoods....” (48-year-old male vendor).*

*“Strict actions and penalties must be in place for consistent results.....shop owners should also decide uniformly not to sell tobacco near educational institutions at any cost..... So that students will not be tempted to follow habit of smoking by seeing their friends and elders...School and college should be given power for prohibiting tobacco shops near them than only police raids.....” (62-year-old female vendor).*

*“Awareness can be created among people about this law by in role-plays, puppet show and dramas....cinema actors and influencers should also be involved in awareness activities to reach better.... Individuals should realize that tobacco is bad and take initiatives to quit from their side too....” (46-year-old male vendor).*

## DISCUSSION

Tobacco vendors should be more aware of tobacco control laws because they are the ones who sell tobacco products. The present study indicates that tobacco vendors had lower and inappropriate knowledge of COTPA, which was similar to findings from Ravishankar TL *et al.*, Moradabad City, Uttar Pradesh, 2016.<sup>[11]</sup> Though the vendors were having knowledge about anti-tobacco legislations either by awareness or frequent supervision by the police and other authorities, when asked to pinpoint, they were unaware of COTPA.

Study subjects who were aware of the display of signage boards in public places and around educational institutions were observed to be 174 (75.7%) and 173 (75.2%), respectively. Nearly, three-fourth, 181 (78.6%), vendors had no idea on the specifications to be followed in the display of “no smoking” signage. The common specifications mentioned by the respondents were the size and language of the board displayed. Prohibition of advertisement of tobacco products in any form was known to 96 (41.7%) sellers and among those sellers, 41 (42.7%) did not know the specifications included in tobacco advertisement. All these findings go hand in hand with the results shown by the study carried out

by Venugopal DC *et al.* in Chennai, 2017.<sup>[7]</sup> This shows that only a few aspects of COTPA had been focused ignoring other aspects. Periodic awareness or monitoring must be facilitated to avoid this ignorance. A large number of subjects, 202 (87.8%), were not aware of the recommended percentage, i.e. >85.0% of the pictorial health warning on tobacco product packages. These findings were parallel to the research from Bhubaneswar by Sharma D *et al.* where it was found that 92.0% of the participants were unaware of size specifications of pictorial health warnings on tobacco packages.<sup>[12]</sup> About 162 (70.4%) of sellers were aware of penalties for a person who violates the rules related to tobacco control which was in contradiction with Rao A R *et al.* from Khammam, Andhra Pradesh, 2013 where 37.9% of the respondents were aware about the penalty for violating COTPA.<sup>[13]</sup> The majority of vendors in the current survey were unaware of the specifications for health warnings on tobacco packages, the ban on any PoS advertisement that directly or indirectly encourages the use of tobacco products, or the consequences of breaching COTPA legislation.

Only 6 (2.6%) had opted for mandatory sale of cigarettes in packets and not as loose cigarettes. These findings agree with the study carried out by Ezhumalai S *et al.* in Karnataka, 2022 where the majority of tobacco dealers (92.0%) were not aware of the restriction on selling loose cigarettes.<sup>[14]</sup> There prevails a misconception that the habit of smoking will be encouraged only if sold in packets and not as loose cigarettes. Vendors justify the sale of loose cigarettes by quoting this reason.

The respondents' awareness about the prohibition on the sale of tobacco products (in any form) within a prescribed radius around the educational institutions as per COTPA was 45.7% while it was reported to be 33.0% in a previous study from Uttar Pradesh.<sup>[11]</sup> When vendors were enquired about the legal age for any tobacco seller, 177 (77.0%) reported it to be >18 years. Moreover, 109 (47.4%) vendors reported that the tobacco products have to be sold only to persons >18 years. However, these findings were in contrast to the study carried out in Kerala by Jayakrishnan R *et al.*, 2011 where 87.0% of the adolescents were ignorant about the law restricting sale of tobacco products to minors.<sup>[15]</sup> This difference in knowledge could be attributed to the timeline of both studies and relative increase in awareness activities regarding tobacco control legislation.

Sociodemographic characteristics such as age, gender, and educational status had a major influence over knowledge of COTPA among tobacco vendors. Male vendors were more aware about the provisions of COTPA when compared to females ( $P$  value <0.05) and were found to be statistically significant. This study's findings were consistent with those of a study from Chennai by Venugopal DC *et al.*<sup>[7]</sup> This was because principal customers and vendors of tobacco products were found to be males with a meager of females. Sellers aged >65 years were less aware when compared with vendors aged <65 years of age. These findings contrasted with observations from the study in Khammam, Andhra Pradesh

where vendors seemed to be older because aged people had witnessed and experienced tobacco's harmful effects.<sup>[13]</sup> The difference could be because younger people have been more exposed to television, advertisements, and social media and they come to know about existing tobacco control laws. Vendors who had schooling were having better awareness about COTPA in comparison to those who were illiterate. Similar findings have been reported from a study carried out in Assam by Sharma D *et al.* where it was found that adults who did >10 years of schooling were four times more aware of COTPA compared with their counterparts.<sup>[16]</sup> Sellers who were able to read and write had gained knowledge from numerous sources such as newspapers, books, etc. This agrees with the study findings that literate vendors were likely to have more knowledge when compared to their counterparts and found to be statistically significant ( $P$  value <0.05). Association was found between knowledge level of tobacco vendors' and locality of PoS. Rural vendors had lower levels of knowledge about smoking area/space, display of "No smoking" signage, etc., when compared to tobacco vendors from urban PoS and were found to be statistically significant ( $P$  value <0.05). The study results were inconsistent with that of Buettner-Schmidt K *et al.*, United States, 2019 such that rural areas are more likely associated with lower income, education levels, and higher unemployment.<sup>[17]</sup> Low population density in rural areas resulted in decreased services and health communication. These results had shown knowledge disparities between rural and urban regions. Similarly, vendors selling tobacco products near schools were more aware of anti-tobacco control laws and its specifications when compared with vendors selling tobacco products near colleges. These findings were similar to the research conducted in Mumbai by Mistry R *et al.* in 2016 where 89.0% of tobacco retailers had knowledge about restriction on tobacco sales to minors.<sup>[18]</sup> This could be due to regular supervision and action taken by policemen and authorities at outlets near schools if tobacco products were sold to minors. This supports the school vendors to have better awareness on legislation than vendors near colleges, which was found to be statistically significant ( $P$  value <0.05).

Based on the content analysis made from the statements given by tobacco vendors, codes such as nationwide coverage, awareness of ill effects, ignorance of public, awareness generation, strict enforcement were derived and further grouped into categories such as act-related, administrative, and community factors which were further grouped under major themes such as facilitators, barriers and suggested measures for COTPA implementation. Even though the study participants were the ones selling tobacco products, they themselves believed that the COTPA implementation had not been very effective. Additionally, they suggested that a deliberate effort be made to raise public awareness about COTPA.

The study had certain limitations. This study assessed the knowledge gap on COTPA among vendors from PoS only around educational institutions in Puducherry. Attitude and practice of tobacco vendors regarding COTPA was

not assessed. This study is one of its first kind, conducted as mixed-method research covering both rural and urban regions of Puducherry as well as achieving an adequate sample size.

## CONCLUSION

This study clearly demonstrates the gap in both COTPA implementation as well as lack of awareness about COTPA among tobacco vendors in Puducherry. This calls for the strengthening of implementation of the law by increased awareness generation activities among these key stakeholders through community participation to improve adherence with COTPA regulations and in turn combat tobacco epidemic.

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## Conflicts of interest

There are no conflicts of interest.

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