Effectiveness of Educational Intervention on COTPA: A Mixed-Method Approach Among College Students in Puducherry

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KEYWORDS

COTPA, Tobacco Control, College Students, Educational Intervention, Mixed-method

ABSTRACT

Background: The Cigarettes and Other Tobacco Products Act (COTPA) aims to mitigate tobacco use through regulatory measures, but awareness about these regulations is vital for their effectiveness. To assess the effectiveness of targeted educational intervention on COTPA and explore the factors influencing implementation of COTPA among college students in Puducherry. **Study design:** A sequential explanatory mixed-method study design was employed, combining pre- & post- intervention surveys in quantitative component while focus group discussions in qualitative component. **Methods:** A total of 360 college students aged ≥ 18 years were included in the study through multi-stage sampling technique. The study was carried out from February – July 2023 (6 months). The knowledge levels on COTPA was measured before and after the educational intervention using a semi-structured questionnaire. The educational intervention on COTPA was conducted using flipbooks & PowerPoint presentations. Additionally, focus group discussions were conducted to explore perceived barriers and facilitators in implementation of COTPA. Written informed consents were sought. Institutional Ethical Committee approval was obtained. **Results:** In pre-test, the urban students was found to have better knowledge about COTPA provisions compared to rural students. Post-intervention, significant improvements were observed in both groups across all knowledge parameters. However, awareness regarding the prohibition of tobacco sales to minors showed no significant improvement. Focus groups identified key factors influencing COTPA implementation. **Conclusion:** Educational interventions effectively improved knowledge regarding COTPA among college students. Addressing these knowledge gaps is crucial for enhancing compliance with tobacco control laws, contributing to better public health outcomes.

1. Introduction

Background & Rationale

Tobacco consumption is one of the most significant public health challenges globally, and its impact is particularly severe in countries like India. The World Health Organization (WHO) estimates that tobacco kills more than 8 million people each year, with 1.3 million deaths occurring in India alone.[1] Smoking affects multiple organs, leading to cardiovascular diseases, respiratory illnesses, and various cancers.[2] In India, the youth, particularly college students, are increasingly being influenced by tobacco use. Peer pressure, social environments, and targeted marketing strategies from tobacco companies have made the youth an easy target for initiation into smoking and other forms of tobacco consumption.[3] College students, who represent a significant portion of the youth population, are at a critical juncture in life, where the adoption of health-risk behaviors like tobacco consumption can have lifelong implications.[4]

To combat the rise of tobacco use in India, the government enacted the Cigarettes and Other Tobacco Products Act (COTPA) in 2003. This legislation aims to regulate the production, distribution, and consumption of tobacco products through a series of comprehensive measures.[5] Despite the existence of such regulatory frameworks, the implementation of COTPA has been suboptimal. Studies indicate that while the legislation is well-intentioned, it has not been fully enforced.[6]

One of the key reasons for the ineffective implementation of COTPA is the low level of awareness among the public, particularly among the youth.[7] Educational interventions have been identified as a potential solution to bridge the knowledge gap regarding tobacco control laws like COTPA. By raising awareness and improving the knowledge levels of college students about tobacco

regulations, educational programs can empower the youth to make informed decisions regarding tobacco use.[8]

Given that college students represent a significant segment of the population, their awareness and perspectives on the facilitators and barriers to effective COTPA implementation are crucial. A mixed-methods approach, combining quantitative and qualitative data, can be valuable in assessing the students' knowledge, attitude and perceptive toward tobacco control measures and laws. This study aims to assess the effectiveness of targeted educational intervention on COTPA and to explore the factors influencing implementation of COTPA among college students in Puducherry.

2. Methodology

A sequential explanatory mixed-method study comprising both quantitative and qualitative component was adopted. The study was carried out for a period of six months from February – July 2023 among selected college students (aged ≥ 18 years) in Puducherry. The required number of participants for quantitative component was calculated from previous study conducted among college students where 20.8% were not aware of COTPA before intervention & 2.1% were not aware of COTPA after intervention in Belagavi city, Karnataka.[8]

$p = \frac{p_1+p_2}{2} = \frac{20.8+2.1}{2} = 11.45$, r = 1 (ratio between two groups). Substituting the statistical formula [9], $n_1 = \left[\frac{1+1}{1}\right] \times \left[\frac{p(1-p)\times(Z_\alpha+Z_\beta)^2}{(\delta)^2}\right]$; where p is the proportion (e.g., 0.1145 in this case).

Zα and Zβ are the Z-scores corresponding to the desired confidence level and power; δ is the difference between the proportions and fraction $\left[\frac{1+1}{1}\right]$ is used for adjustment, possibly for sample size design in two groups.

$$n_1 = \left[\frac{1+1}{1}\right]\left[\frac{0.1145(1-0.1145)(2.58+1.64)^2}{(0.208-0.021)^2}\right] = 103.27 \sim 104$$

Considering attrition rate of 10%, $n_2 = n_1 + n_1*10\% = 114.4 \sim 115$. Moreover, with design effect of 1.5 the sample size was computed as $n = n_2*1.5 = 173$. Rounding off to the highest figure, the sample size was 180 from each urban and rural colleges. Thus, the final sample size was determined to be 360. The list of colleges in Puducherry was considered as the sampling frame. At first, colleges were stratified into urban and rural. Then, simple random sampling by random number generation was employed to select a college from each strata. Further, for selecting students, simple random sampling by lottery method was utilized to choose one specific course and an academic year. Finally, all students in that course and academic year were included till the sample size was achieved.

A pre-tested, semi-structured, face-validated questionnaire was developed to assess the knowledge gap on COTPA for capturing data among students. After completing the baseline survey, an educational intervention was provided for the students based on the identified knowledge gap on COTPA using an educational material developed by the investigator. The educational intervention was around 35-45 minutes using a devised educational material. After six weeks of educational intervention, the students were re-assessed using the same semi-structured questionnaire.

The quantitative data was entered in MS Excel 2013 ver.15.0 application and analyzed using standard software Statistical Package for the Social Sciences (SPSS) (v16.0; IBM Corp, Armonk, New York) software. The data was presented in the form of numbers and percentages for qualitative variables and mean & SD / median & IQR for quantitative variables. Appropriate tests of significance i.e., Chi-square test was applied to find the association between pre-test and post-test knowledge parameters with locality of college among college students. Values of $p < 0.05$ was considered to be statistically significant.

Qualitative data collection was done through FGDs among 24 college students having equal

representation from both urban and rural colleges. Purposive sampling was employed for selecting students who were spontaneous and free to talk. Interview guide was prepared based on the quantitative data results and three FGDs were carried out till the point of saturation. Each FGD compromised of around 8-10 participants with discussions lasting for approximately 60-90 minutes. All sessions were recorded with participants' consent for subsequent analysis. Transcripts were made after each interview and manual content analysis was performed.[10] Written informed consent was sought from all participants. The institute's scientific and ethics committee approval were obtained before the commencement of the study.

3. Results and Discussion

Quantitative Results

The socio-demographic profile of college students has been given in **Table 1**. The mean (SD) age of the students was 19.39 (0.61) years. Around two-third, 243 (67.5%) students aged 19 years, 93 (25.8%) were 20 years of age and 24 (6.7%) belong to age of 21 years. Nearly more than half, 204 (56.7%) of them were males and remaining 156 (43.3%) were females.

Table 1: Distribution of students based on socio-demographic characteristics (N=360)

Socio-demographic characteristics	**N = 360 (%)**
Age (in years)	
19	243 (67.5)
20	93 (25.8)
21	24 (6.7)
Gender	
Male	204 (56.7)
Female	156 (43.3)
Locality of college	
Urban	180 (50)
Rural	180 (50)
Academic year	
1st year	270 (75)
2nd year	90 (25)
Religion	
Hindu	314 (87.2)
Christian	8 (2.2)
Muslim	36 (10)
Others	2 (0.6)

Table 2: Pre and Post-test awareness regarding COTPA among college students

Parameters	Pre-test (N=360)		Post-test (N=360)	
	Aware n (%)	Not aware n (%)	Aware n (%)	Not aware n (%)
Tobacco related legislation	47 (13.1%)	313 (86.9%)	347 (96.4%)	13 (3.6%)
COTPA	66 (18.3%)	294 (81.7%)	351 (97.5%)	9 (2.5%)
Prohibition of smoking	224 (62.2%)	136 (37.8%)	344 (95.6 %)	16 (4.4 %)
Designated smoking area	258 (71.7%)	102 (28.3%)	350 (97.2 %)	10(2.8%)
Signage board in public places	289 (80.3%)	71 (19.7%)	354 (98.3%)	6 (1.7%)
Signage board in educational institutions	247 (68.6%)	113 (31.4%)	345 (95.8 %)	15 (4.2 %)
Prohibition of advertisements	161 (44.7%)	199 (55.2%)	307 (85.3 %)	53 (14.7%)
Name of tobacco producing company	58 (16.1%)	302 (83.9%)	91 (25.3%)	269 (74.7 %)
Brand sharing	9 (2.5%)	351 (97.5%)	128 (35.6%)	232 (64.4%)
Brand stretching	4 (1.1%)	356 (98.9 %)	89 (24.7%)	271 (75.3 %)
Sale of tobacco by minors	227 (63.1%)	133 (36.9%)	298 (82.8%)	62 (17.2%)
Sale within specific radius of educational institutions	198 (55%)	162 (45%)	345 (95.8%)	15 (4.2%)
Packaging & labeling specifications	143 (39.7%)	217 (60.3%)	345 (95.8 %)	15 (4.2%)
Pictorial health warnings	169 (46.9%)	191 (53.10%)	354 (98.3%)	6 (1.7%)
Penalties	136 (37.8%)	224 (62.2%)	329 (94.2%)	21 (5.8 %)
Passive smoking	70 (19.4%)	290 (80.6%)	245 (68.1 %)	115 (31.9 %)
Ill effects of tobacco consumption	155 (43.1%)	205 (56.9%)	331 (91.9%)	29 (8.1%)

Table 3: Comparison of pre-test knowledge levels between urban and rural college students

Pre-test Knowledge Parameters	College Locality		X^2 (df)	p-value	OR (CI)
	Rural (180) n (%)	Urban (180) n (%)			

Heard of any tobacco legislation	Yes	21(11.7)	26(14.4)	0.612 (1)	0.434	0.782 (0.422, 1.449)
	No	159 (88.3)	154(85.6)			
Heard of COTPA	Yes	26(14.4)	40 (22.2)	3.636 (1)	0.057	0.591 (0.343, 1.018)
	No	154 (85.6)	140(77.8)			
Smoking ban	Yes	77 (42.8)	59 (32.8)	3.829 (1)	0.05	1.533 (0.998, 2.355)
	No	103 (57.2)	121(67.2)			
Designated smoking area	Yes	38 (21.1)	64 (35.6)	9.248 (1)	**0.002***	0.485 (0.303, 0.776)
	No	142 (78.9)	116 (64.4)			
Signage board in Public places	Yes	157 (87.2)	132(73.3)	10.965 (1)	**0.001***	2.482 (1.435, 4.295)
	No	23 (12.8)	48(26.7)			
Signage board in educational institutions	Yes	124 (68.9)	123 (68.3)	0.013 (1)	0.910	1.026 (0.657, 1.602)
	No	56 (31.1)	57(31.7)			
Prohibition of tobacco advertisements	Yes	66 (36.7)	95 (52.8)	9.450 (1)	**0.002***	0.518 (0.340, 0.789)
	No	114 (63.3)	85 (47.2)			
Brand sharing	Yes	3 (1.7)	6 (3.3)	1.026 (1)	0.311	0.492 (0.121, 1.996)
	No	177 (98.3)	174 (96.7)			
Brand stretching	Yes	1 (0.6)	3 (1.7)	1.011 (1)	0.315	0.330 (0.034, 3.199)
	No	179 (99.4)	177 (98.3)			
Sale by minors	Yes	139 (77.2)	88 (48.9)	31.015 (1)	**< 0.001***	3.544 (2.249, 5.585)
	No	41 (22.8)	92 (51.1)			
Sale within specific radius	Yes	120 (66.7)	78 (43.3)	19.798 (1)	**< 0.001***	2.615 (1.705, 4.011)
	No	60 (33.3)	102 (56.7)			
Specifications for packing and labelling	Yes	88 (48.9)	55 (30.6)	12.634 (1)	**< 0.001***	2.174 (1.412, 3.346)
	No	92 (51.1)	125 (69.4)			
Penalties	Yes	64 (35.6)	72 (40)	0.756 (1)	0.384	0.828 (0.540, 1.268)
	No	116 (64.4)	108 (60)			
Passive smoking	Yes	37 (20.6)	33 (18.3)	0.284 (1)	0.594	1.153 (0.683, 1.944)
	No	143 (79.4)	147 (81.7)			
Ill effects of tobacco consumption	Yes	92 (51.1)	63 (35)	9.528 (1)	**0.002***	1.942 (1.271, 2.965)
	No	88 (48.9)	117 (65)			
***Chi square test, p value < 0.05 considered as statistically significant**						

Table 4: Comparison of post-test knowledge levels between urban and rural college students

Post-test Knowledge Parameters		**College Locality**		**X^2 (df)**	**p-value**	**OR (CI)**
		Rural (180) n (%)	**Urban (180) n (%)**			
Heard of any legislation	Yes	168(93.3)	179(99.4)	9.656 (1)	**0.002***	0.078 (0.010, 0.608)
	No	12 (6.7)	1 (0.6)			
Smoking ban	Yes	166(92.2)	178(98.9)	9.419 (1)	**0.002***	0.133 (0.030, 0.595)
	No	14 (7.8)	2(1.1)			
Signage board in educational institutions	Yes	167 (92.8)	178(98.9)	8.417 (1)	**0.004***	0.144 (0.032, 0.649)
	No	13 (7.2)	2(1.1)			
Prohibition of tobacco ads	Yes	153 (85)	154 85.6)	0.022(1)	0.882	0.957 (0.534, 1.714)
	No	27 (15)	26 (14.4)			
Brand sharing	Yes	76 (42.2)	52(28.9)	6.983 (1)	**0.008***	1.799 (1.161, 2.786)
	No	104(57.8)	128(71.1)			
Brand stretching	Yes	41(22.8)	48(26.7)	0.731 (1)	0.392	0.811 (0.502, 1.311)
	No	139(77.2)	132(73.3)			
Sale by minors	Yes	124(68.9)	174(96.7)	48.712 (1)	**< 0.001**	0.076 (0.032, 0.183)
	No	56 (31.1)	6(3.3)			
Specifications for packing and labelling	Yes	168(93.3)	177 (98.3)	5.635 (1)	**0.018***	0.237 (0.066, 0.856)
	No	12(6.7)	3 (1.7)			
Penalties	Yes	162(90)	177 (98.3)	11.378 (1)	**0.001***	0.153 (0.044, 0.527)
	No	18(10)	3(1.7)			
Passive smoking	Yes	122(67.8)	123(68.3)	0.013 (1)	0.910	0.975 (0.626, 1.518)
	No	58(32.2)	57(31.7)			
Ill effects of tobacco consumption	Yes	154(85.6)	177 (98.3)	19.840 (1)	**< 0.001***	0.100 (0.030, 0.338)
	No	26(14.4)	3(1.7)			
***Chi square test, p value < 0.05 considered as statistically significant**						

Table 5: Content analysis of focus group discussions among college students

Themes	**Categories**	**Codes**

Facilitators for COTPA implementation	Policy related	• Anti-tobacco advertisements • Display of pictorial health warnings in cigarette packets
	Government related	• Using influencers for anti-tobacco propaganda
Barriers for COTPA implementation	Policy related	• Ignoring smokeless forms • Lack of awareness • Misconceptions and misleading labels
	Government related	• Existing loopholes • Lack of monitoring by civil authorities • Delay in action
Suggested measures for better implementation	Policy related	• Addressing the existing loopholes • Adapt ID systems
	Pupil related	• Self-realization • Positive peer influences
	Government related	• Immediate action for the offenders • Regular and periodic supervision • Educate right from schools

Pre- and post-test awareness regarding COTPA among college students has been given in **Table 2**. In pre-test survey, only 13.1% of students were aware of tobacco-related legislation. After intervention, there was a dramatic increase in the awareness levels to 96.4%. Similarly, just 18.3% of students were aware of COTPA initially which increased to 97.5% post-intervention. In the baseline survey, 62.2% of students knew about smoking ban at public places which raised to 95.6% after intervention. Awareness levels regarding designated smoking areas improved from 71.7% to 97.2% among students. When asked about the presence of signage boards in public places, 80.3% were aware before intervention which improved to 98.3% in the post-test survey. Awareness levels about mandatory display of signage boards in educational institutions also observed a raise from 68.6% to 95.8%. In pre-test, only 44.7% of participants were aware of the prohibition of tobacco advertisements while 85.3% of students gained awareness about the same. Moreover, significant strides were made while questioning about brand sharing and stretching, where awareness levels increased from 2.5% to 35.6% and 1.1% to 24.7%, respectively. For the sale of tobacco by minors, improvement in the knowledge levels was evident from 63.1% to 82.8% among participants. In addition, awareness about ban on tobacco sales within a specific radius of educational institutions saw a substantial raise, from 55% to 95.8% among respondents. Familiarity with packaging and labeling specifications also showed a significant raise from 39.7% in the pre-test to 95.8% in the post-test. Similarly, awareness levels concerning pictorial health warnings increased from 46.9% in the baseline survey to 98.3% in the end-line survey. Knowledge levels regarding penalties raised among students from 37.8% before educational intervention to 94.2% after intervention. The concept of passive smoking was known only to 19.4% of students while after intervention 68.1% of students was familiar with the same. Lastly, knowledge related to ill effects of tobacco consumption improved

considerably among the study subjects from 43.1% to 91.9%.

Association between pre-& post-test knowledge parameters and college locality among college students has been given in **Table 3 and 4.** In the pre-test, knowledge regarding designated smoking zone was 0.485 times higher among urban when compared to rural college students which was found to be statistically significant (p value < 0.05). Awareness about ban on tobacco advertisements among urban students was 0.518 times higher in comparison with rural college students with a p-value of 0.002. Knowledge levels regarding harmful effects of tobacco among urban students was 1.942 times higher than rural region with a p-value of 0.002. Awareness about mandatory display of signage board in public places was 2.42 times more among rural college students than urban with p-value of 0.001. Knowledge regarding restriction of tobacco products sale by minors, restriction within specific radius around educational institutions and specifications for packing and labelling of cigarette packets was found to be significantly higher among rural college students than urban students with p-values of < 0.001.

In the post-test, 99.4% of urban students had heard of tobacco-related legislation in comparison to 93.3% of rural students (p = 0.002; OR = 0.078). There was a significant difference in the awareness levels regarding smoking ban in public places, designated smoking zones and ill effects of tobacco consumption between urban and rural college students. The urban students were found to be more aware about these provisions than rural college students with p- value < 0.05.

Qualitative Results

Focus group discussions were conducted among 24 college students aged 19-20 years representing both urban and rural colleges. Out of 24 selected students, 13 were males and 11 were females. College students narrated their perceived factors influencing COTPA implementation.

The table 5 showcases the results of thematic content analysis of FGDs. Codes were picked up from the statements given by the respondents. The codes were then clubbed into categories and further grouped to themes. Finally, three major themes were identified viz facilitators for COTPA implementation; barriers for COTPA implementation and suggested measures for better COTPA implementation.

Facilitators for COTPA implementation was considered as the first theme. As perceived by the college students, two categories were recognized within this theme such as policy-related and government related under which anti-tobacco advertisements, display of pictorial health warnings, and using influencers for anti-tobacco propaganda were mainly mentioned by the respondents some of which have been stated here.

"The advertisements make tobacco consumers pause and think. The presence of pictorial health warnings on cigarette packets was also seen as a strong deterrent, with participants acknowledging that the graphic images make smokers reconsider their actions."….. (**19-year-old female from an urban college)**

"The images scare consumers and act as a consistent reminder of the dangers of smoking."…… **(20-year-old male rural college student)**

"Using influencers, especially actors, to promote anti-tobacco messages was seen as an effective way to reach young people. Role models play a crucial part in shaping public behavior."……. **(20-year-old male rural college student)**

The second theme was barriers for implementation of COTPA. This theme also had two categories similar to that of facilitators under which ignoring smokeless forms, lack of awareness, misconceptions and misleading labels, existing loopholes, lack of monitoring by civil authorities and delay in action were mentioned by the respondents. The quotes shown below illustrates some examples of comments recorded in these categories.

"Without warnings, smokeless tobacco use is on the rise. Another one is the general lack of

awareness, even among urban populations, regarding the existence of the law."…. (**20-year-old male rural college student**)

"Misconceptions are prevailing, such as the belief that "light" or "organic" cigarettes are safer"…..**(19-year-old male from an urban college)**

"Illegal sales make tobacco easily accessible, especially for minors. Inadequate monitoring by civil authorities and delays in penalizing offenders further contribute to the ineffectiveness of the law's implementation."… **(20-year-old rural student)**

The final theme was suggested measures for better implementation of COTPA. Policy-related, pupil related and government related were the three categories in this theme under which adapting ID systems, addressing existing loopholes, self-realization, positive peer influences, immediate action for offenders, regular and periodic supervision, educate right from schools were highlighted by the respondents. The quotes shown below illustrates some sentences expressed by the participants.

"Closing loopholes in the law, such as banning all forms of tobacco advertising"…. (**20-year-old female from an urban college)**

"Implementing an ID verification system to prevent minors from purchasing tobacco."… (**19-year-old female from an urban college)**

"Regular and unannounced supervision by authorities, as well as publicizing penalties to deter violations"……. **(19-year-old male from a rural college)**

Discussion

In the current study, the mean age was 19.39 years with 56.7% males, whereas Boopathirajan et al.[11] found a mean age of 20.46 years with 41.8% males. The age difference may be due to institutional factors, while the gender disparity could reflect course choices or cultural influences.

Among college students, 13.1% of them were initially aware of any tobacco-related legislation. In contrast, Vadvadgi et al. found that 84.7% of students were aware of anti-smoking legislation,[12] reflecting geographic or population-based differences.

In this study, 50.8% of students identified places like educational institutions, airports, and bus stands as public areas, while Callinan et al. showed smoking bans reduced secondhand smoke exposure in workplaces.[13] Furthermore, 71.6% of participants were aware of designated smoking areas, with 23.5% identifying airports, restaurants, and hotels as such locations. Sharma et al. found 82.1% of students in Delhi were aware of designated smoking zones, particularly in educational institutions.[14]

About 80.3% of students recognized the mandatory display of signage boards in public places, while 68.6% were aware of this requirement in educational institutions. Khargekar et al. found only 15% of educational institutions in Bengaluru had signboards, indicating the need for better enforcement.[15] Regarding tobacco advertisements, 44.7% of students knew about the prohibition, while 63.1% were aware of the ban on tobacco sales by minors. Awareness of the 100-yard ban on sales near educational institutions was only 37.4%. A study by Mistry et al. suggested expanding this radius in Mumbai.[16]

Regarding packaging and labeling, 39.7% of students knew about specifications like pictorial warnings, though 53.1% were unaware of the mandatory warning percentage. A study by Mullapudi et al. showed that 60% of males and 52% of females were deterred from using tobacco by the new warnings.[17] This highlights the need for better understanding of these laws. Additionally, 41.9% students mentioned fines or arrests as penalties for COTPA violations. Veleshala et al. also found low awareness of COTPA among students.[18]

The harmful effects of tobacco were recognized by 70.6% of participants, with 64.3% acknowledging the dangers of passive smoking. Gupta et al. stressed the importance of raising awareness about smokeless tobacco's harmful effects.[19] Urban students generally showed higher pre-test knowledge

regarding tobacco, with knowledge of designated smoking areas being 0.485 times higher, and awareness of advertisement prohibitions 0.518 times higher than among rural students. Varma et al. reported similar findings.[20]

Despite urban students having better access to information, rural students in this study showed higher awareness of signage boards and sales restrictions near educational institutions. This aligns with findings by Sabnis et al. in Chhattisgarh, where rural areas often had more targeted public health efforts due to higher tobacco use.[21]

Following the educational intervention, awareness among rural students about tobacco legislation increased from 13.1% to 96.4%. Similarly, COTPA awareness improved from 18.3% to 97.5%, with knowledge of smoking bans and designated areas also rising significantly. These results were comparable to Yadav et al, demonstrating the impact of targeted interventions.[8]

Three major themes emerged from focus group discussions: facilitators, barriers, and suggested measures. Students identified anti-tobacco advertisements, pictorial health warnings, and influencer roles as key facilitators. Mohammed et al. echoed these findings, emphasizing political commitment, stakeholder passion, and leadership as critical enablers in Kenya.[22]

Barriers included lack of awareness, negligence towards smokeless forms of tobacco, and poor civil authority monitoring. Sharma et al. found similar barriers in Guwahati, where public opposition, cultural acceptance of tobacco, and political disinterest hindered COTPA enforcement.[7] Students suggested ID systems, positive peer influences, and regular supervision as potential solutions. Mohammed et al. highlighted the importance of continuous political engagement and countering industry interference, reinforcing the need for sustained efforts in tobacco control.[22]

In conclusion, both quantitative and qualitative aspects of this study highlighted significant gaps in awareness and enforcement of COTPA. However, the educational intervention showed promising results, indicating that well-designed programs can greatly improve knowledge and compliance with tobacco control laws.

4. Conclusion and future scope

The findings of this study emphasized the pivotal role of educational intervention in significantly improving awareness about COTPA among college students in Puducherry, with awareness levels increasing from 40% to 75%. Urban students initially demonstrated better knowledge than their rural counterparts, the educational intervention helped to close this gap, highlighting the need for continuous and targeted initiatives. Focus group discussions explored major themes such as facilitators, barriers and suggested measures for better implementation of COTPA.

To sustain these improved knowledge levels, the study recommends launching comprehensive awareness campaigns and implementing ongoing educational programs to reinforce COTPA knowledge, developing peer education models, integrating tobacco education into academic curricula, and establishing monitoring systems to evaluate the effectiveness of these interventions. These strategies will enhance the impact of tobacco control efforts and contribute to a healthier, tobacco-free future.

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