RESEARCH ARTICLE

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Compliance of Tobacco Free Educational Institution (ToFEI) Guidelines among Schools in Goa, India: An Observational Study

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Abstract

Background & objectives: Tobacco use is a risk factor for many non communicable diseases and also the leading cause of preventable death globally and in India. Government of India released the Tobacco Free Educational Institute (ToFEI) Guidelines as a tobacco control initiative in an educational Institution. The present study assessed the compliance of these guidelines among schools in Goa. **Methods:** A cross sectional study was conducted among 314 Goan schools to assess the ToFEI guideline implementation. Data collection was done using the scorecard for ToFEI comprising of 9 criteria including the mandatory ones and the weighted points were calculated. **Interpretation & conclusions:** Only 9.6% of the schools complied with the tobacco free school policy. The mean ToFEI score of the schools was 49.87± 28.11. The mandatory score of 50 was achieved by 33.8% schools. The compliance of private schools was better as compared to Government and aided schools. Around 67.8% of schools had a display of Tobacco-Free area signage inside their premise. There is a need for better implementation of the guidelines to make the schools Tobacco Free.

Keywords: GYTS- schools- Tobacco- ToFEI

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Introduction

Education forms the foundation of a student's transformative journey, shaping not only intellectual capabilities but also nurturing social skills, character development, and the cultivation of healthy habits. The school environment emerges as a crucial catalyst in molding habits, acting as fertile ground for nurturing positive behaviors and discouraging detrimental ones, such as tobacco use. Recognizing the school environment's pivotal role, especially in shaping the health behaviors of adolescents, it becomes imperative for schools to play a central role in not only influencing development but also molding perceptions [1]. By implementing multilevel interventions, schools actively foster healthy behaviors and deter engagement in unhealthy activities, creating a supportive ecosystem for students' overall well-being [2].

Tobacco use in young population poses a significant health concern and requires vigilant intervention. Tobacco consumption stands as the leading cause of preventable fatalities, claiming over 8 million lives globally each year [3]. According to the 2017 Global Adult Tobacco Survey (GATS 2) in India, 28.6% of adults aged 15 years and above presently engage in tobacco use, with 10.7%

smoking and 21.4% using smokeless forms. Alarmingly, the onset of daily tobacco use typically begins at the age of 17.9 years [4]. In the 2019 Global Youth Tobacco Survey (GYTS) involving students aged 13-15, 8.5% reported using tobacco products, with 7.3% using smoked tobacco and 4.1% using smokeless tobacco [5]. Examining GATS 2 data at a regional level, Goa reported a prevalence of 9.7% for tobacco use, wherein 4.2% opted for smoked tobacco and 6.5% for smokeless forms [6]. Conversely, GYTS data in Goa indicated a lower prevalence of 2.1% for tobacco use among youth [5]. This underscores the critical need for schools to address and curb such habits among students, playing a vital role in promoting a healthier and safer environment.

In 2003, the Government of India introduced the Cigarettes and Other Tobacco Products Act (COTPA) to regulate and control the use of tobacco and related products [7]. Section 6 of COTPA 2003 explicitly prohibits the sale or allowance of the sale of cigarettes or any other tobacco product to individuals under the age of 18(Section 6a). Furthermore, it delineates that such sales are forbidden within a 100-yard radius of any educational institution(Section 6b), ensuring a protective environment around schools.

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In 2008, the Ministry of Health and Family Welfare (MoHFW), Government of India, introduced the 'Guidelines for Tobacco-Free Educational Institutes (ToFEI)', a significant initiative subsequently adopted by the Central Board of Secondary Education (CBSE). In 2019, the ToFEI Guidelines underwent a revision, reflecting a continuous commitment to advancing tobacco control initiatives among adolescents and young adults [8]. The primary objective of these guidelines is to instigate a fresh impetus in the implementation of tobacco control measures across schools, colleges, and universities, both in the public and private sectors. To assess and certify their compliance, institutions utilize a Self-Evaluation Scorecard for ToFEI, verified by the relevant government authority on a half-yearly basis.

Despite existing rules and regulations, India remains one of the largest consumers of tobacco. The prevalence of small, affordable packaging and widespread distribution of Point of Sale (POS) locations facilitate easy access to tobacco products [9]. In Chandigarh, tobacco sales to minors were absent, but only 37.5% of educational institutions complied with section 6b of COTPA [10]. Similarly, signage displaying smoking prohibition was found in only 2.8% of 287 schools surveyed in Chennai [11]. A cross sectional study across 307 educational institutes in 12 distircts across five states in India found that 69% of the schools had shops selling tobacco products within a radius of 100 yards [12]. A national level systematic review reported compliance rates of 66.39% and 51.08% for section 6a and 6b respectively [13]. A study in Haryana by Kumar et al revealed non compliance with ToFEI criteria, with no schools scoring 90% and above [14]. Similarly no schools in Puduchery met all ToFEI guidelines [15]. Adherence to ToFEI guidelines, however, was linked to reduced tobacco use in 13-15 year old urban schoolchildren [16].

A literature search revealed a gap in assessing ToFEI guideline implementation in Goan schools. This study aims to fill this void by evaluating ToFEI guideline compliance among schools in Goa.

Materials and Methods

This cross-sectional study was conducted between January to April 2022 among Primary, Middle, High and Higher Secondary schools in Goa.

Permission to conduct the study was obtained from the Directorate of Education, and ethical clearance was obtained from the Institutional Ethics Committee.

Sample Size

Anticipating compliance with the tobacco-free educational institution guidelines based on insights from previous studies, we initially assumed that at least 50% of the schools in our study would exhibit some form of adherence [13, 14, 15]. Factoring in 95% confidence interval with a 6% precision and accounting for a 10% potential loss due to non-response or permission issues, a sample size of 294 schools was calculated.

However, during actual data collection visits, it became apparent that more than one school shared the same or adjacent compounds. Recognizing the relevance of these additional schools within close proximity to our study, the decision was made to include them, resulting in an increased sample size of 314 schools.

Sampling

Goa is administratively divided into two districts collectively hosting 1741 schools (Government, Government Aided, Private) according to the list obtained from the Directorate of Education. North Goa district has 811 schools and South Goa district has 930 schools. Most of the schools in Goa are affiliated with the Goa Board of Secondary and Higher secondary education.

A combination of proportionate and convenience sampling method was used to select the sample schools. The initial sample size of 294 represented approximately 17% of the total number of schools in both North and South Goa district. Hence 17% of school from each district was selected using convenience sampling. Special attention was given to include schools from areas with sparser school distribution.

Data collection Tool

The self-evaluation scorecard for tobacco free educational institution prescribed in the Guidelines for tobacco free educational institution (Revised) by the Ministry of Health & Family Welfare, Govt of India was used as data collection tool [8]. The Scorecard had 9 criteria with maximum weightage points of 100. The first three criteria with two sub criteria are mandatory with a total score of 50, the next four criteria carry a score of 9 each and last two criteria have a weightage score of 7 each. Schools that score 90% or more were considered to have achieved high compliance status.

Prior to school visits two investigators involved in data collection were trained in the Department of Public Health Dentistry to use the ToFEI scorecard and identify the violations. Calibration session was held to ensure uniformity in application of guidelines and scoring.

Data collection

A visit schedule was meticulously prepared using the list of selected schools. Two teams each consisting of one investigator and two support personnel were made who visited the schools during working hours.

After explaining the purpose of the study and procedure, Permission was secured from the respective school headmaster/principals. Details like type of school (Government/Aided/Private) and Location (North Goa/South Goa District) were collected. Each criterion in the scorecard were individually assessed and scored by the investigators. In schools where 100 yards area was not marked, Google Maps was used to covertly measure the distance and identify any shops selling tobacco products within 100 yards of the school. Photographs of perceived violations were taken for record-keeping purposes. Furthermore, informative posters on the Cigarettes and Other Tobacco Products Act (COTPA), second-hand smoking, ill effects of tobacco, and oral cancer awareness were distributed to the schools.

Statistical Analysis

The collected data was entered into Microsoft excel spreadsheet and analyzed using IBM SPSS Statistics, Version 22 (Armonk, NY: IBM Corp). Descriptive data were presented in the form of frequency, percentage, mean, standard deviation, median and quartiles. The compliance scores were compared between the two districts using Mann Whitney U Test and between different types of schools using Kruskal Wallis test followed by Mann Whitney U Test. P value < 0.05 was considered statistically significant.

Results

Among 314 schools included in the study, 143 schools were from North Goa District and 171 schools were from South Goa District. Based on the type of schools. 189 were Government schools, 20 were aided and 105 were private schools. Overall only 9.6% of the schools presented high compliance with the tobacco free school policy, which is a score of 90% and above. More schools from South Goa District (14.7%) showed high compliance as compared to North Goa District (3.5%). Similarly, More schools from South Goa District (40.4%) achieved mandatory scores of 50 as compared to North Goa District (25.9%) (Table 1).

Based on the type of schools, 20.1% and 45.7% of the private schools had high compliance and scored mandatory score of 50 respectively. Comparatively lesser number of government and aided schools had high compliance and received mandatory score of 50 (Table 1).

Criteria wise compliance by the schools is presented in Table 2. Display of "Tobacco-Free Area" signage was found inside the premises of 67.8% schools but name/designation/contact number were relatively lacking with only 48.1% of the schools mentioning them. Very few schools(29.9%) had displayed poster or other awareness

materials and only about a third of the schools had organized some tobacco control activity during the past 6 months. Though 100 yards area marking was missing from 86.3% of the schools it noticed that near 81.1% of the schools, no shops were selling tobacco products within 100 yards of the school and in 77.7% of the schools had no evidence of the use of tobacco products inside the premises (Table 2).

The overall compliance score for the schools ranged from 0 to 100 with a mean score of 49.87 ± 28.11 . Schools in South Goa District (53.85 ± 28.45) had a higher compliance score as compared to North Goa District (45.11 ± 27.03) which was statistically significant (p<0.05). Private (58.59 ± 29.15) and aided (59.05 ± 27.32) schools had statistically significant (p<0.05) higher compliance scores as compared to government (44.06 ± 26.16) schools. However the difference in compliance scores between private and aided schools was not statistically significant (p>0.05) A statistically significant difference in mandatory score was also observed between Government and Private schools (p<0.05) (Table 3).

Discussion

Children and adolescents are widely recognized as primary targets for tobacco companies [17]. These vulnerable demographics are particularly susceptible to the allure of tobacco products due to their developmental stage, susceptibility to peer influence, and susceptibility to marketing tactics. Recognizing this, efforts to prevent tobacco use among youth often focus on implementing strict regulations on tobacco advertising, packaging, and sales, as well as promoting education and awareness about the risks associated with tobacco use from an early age. Various rules like COTPA and ToFEI guidelines are directed at achieving this outcome.

The present study was conducted to assess the

Table 1. Demographic Data and Frequency of Schools Meeting the ToFEI Guidelines

		Frequency (n)	Percentage (%)
District wise distribution of schools	North Goa	143	45.5
	South Goa	171	54.5
Type of school	Government	189	60.2
	Aided	20	6.4
	Private	105	33.4
Schools with High Compliance (90 % Score and above)	Overall	30	9.6
	North Goa District	5	3.5
	South Goa District	25	14.7
	Government School	6	3.2
	Aided School	3	15
	Private School	21	20.1
Schools with Mandatory score of 50	Overall	106	33.8
	North Goa District	37	25.9
	South Goa District	69	40.4
	Government School	49	25.9
	Aided School	9	45
	Private School	48	45.7

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No shope calling tobacco products within 100 words of the	Marking of 100 yards area from the outer limit of boundary wall/fence of the Educational Institute (7)	Inclusion of "No Tobacco Use" norm in the Educational Institute's code of conduct guidelines (9)	Designation of tobacco monitors and their names, designations, and contact number are mentioned on the signages (9)	Organization of at least one tobacco control activity during the past 6 months (9)	Poster or other awareness materials on the harms of tobacco displayed in the premise (9)	No evidence of the use of tobacco products inside the premise, i.e., cigarette/beedi butts or discarded gutka/ tobacco pouches, spitting spots (Mandatory 10)	The name/designation/contact number are mentioned/ updated in the signage (Mandatory 10)	Display of "Tobacco Free Education Institution" signage at entrance/boundary wall of Educational Institute (Mandatory 10)	The name/designation/contact number are mentioned/ updated in the signage (Mandatory 10)	Display of "Tobacco-Free Area" Signage inside the premise of Educational Institute at all prominent place(s) (Mandatory 10)		Criteria (Weightage Points)
257 (81.80%)	43 (13.70%)	135 (43.00%) 71 (49.70%)	142 (45.20%) 64 (44.80%)	109 (34.70%) 47 (32.90%)	94 (29.90%)	244 (77.70%)	141 (44.90%) 50 (35.00%)	175 (55.70%) 61 (42.70%)	151 (48.10%)	213 (67.80%)		Overall
115 (80.40%)	20 (14.00%)	71 (49.70%)	64 (44.80%)	47 (32.90%)	32 (22.40%)	244 (77.70%) 107 (74.80%) 137 (80.10%)	50 (35.00%)	61 (42.70%)	55 (38.50%)	85 (59.40%)	North	District, n(%)
257 (81.80%) 115 (80.40%) 142 (83.00%)	23 (13.50%)	64 (37.40%)	78 (45.60%)	62 (36.30%)	62 (36.30%)	137 (80.10%)	91 (53.20%)	114 (66.70%)	96 (56.10%)	128 (74.90%)	South	
0.55(NS)	0.89(NS)	0.03*	0.88(NS)	0.53(NS)	0.007*	0.26(NS)	0.001*	<0.001*	0.002*	0.004*		p-value
152 (80.40%)	18 (9.50%)	69 (36.50%)	69 (36.50%)	49 (25.90%)	46 (24.30%)	139 (73.50%)	70 (37.00%)	97 (51.30%)	75 (39.70%)	123 (65.10%)	Government school	Туре
19 (95.00%)	4 (20.00%)	9 (45.00%)	13 (65.00%)	10 (50.00%)	8 (40.00%)	19 (95.00%)	10 (50.00%)	10 (50.00%)	12 (60.00%)	15 (75.00%)	Aided school	Type of school, n(%)
86 (81.90%) 0.27(NS)	21 (20.00%)	57 (54.30%)	60 (57.10%)	50 (47.60%)	40 (38.10%)	86 (81.90%)	61 (58.10%)	68 (64.80%) 0.07(NS)	64 (61.00%)	75 (71.40%)	Private school	
0.27(NS)	0.03*	0.01*	0.001*	<0.001*	0.03*	0.04*	0.002*	0.07(NS)	0.001*	0.42(NS)		p-value

Chi Square test; *p<0.05 Statistically Significant; p>0.05 Non Significant, NS

Table 3. Total and Mandatory ToFEI Scores Comparison on the Basis of District and Type of School

					Mandatory score				
		N	Mean (SD)	Range	Median(Q1-Q3)	Mean (SD)	Range	Median (Q1-Q3)	
Overall	,	314	49.87 (28.11)	0 - 100	46 (26 – 75)	29.43 (17.97)	0 - 50	30 (10 – 50)	
District	North	143	45.11 (27.03)	0 - 100	44 (19 - 73)	25.03 (18.15)	0 - 50	20 (10 - 50)	
	South	171	53.85 (28.45)	0 - 100	55 (27 - 82)	33.1 (17.02)	0 - 50	30 (20 - 50)	
	Mann Whitney U test	U Statistic = 9851 , p = $0.003*$				U Statistic = 9177, p < 0.001*			
Type	Government school	189	44.06 (26.16) ^{a,b}	0 - 93	38 (21.5 - 66)	26.67 (17.72)a	0 - 50	30 (10 - 50)	
of school	Aided school	20	59.05 (27.32) ^a	17 - 100	58.5 (30.75 - 84)	33 (17.20)	Oct-50	30 (12.5 - 50)	
	Private school	105	58.59 (29.15) ^b	0 - 100	57 (36 - 84)	33.71 (17.77)a	0 - 50	40 (15 - 50)	
	Kruskal Wallis test		Chi Square	value =20.5	6, p <0.001*	Chi Square value =11.68, p=0.003*			

^{*}p<0.05 Statistically Significant; p>0.05 Non Significant, NS; Pairwise comparison between type of schools with same superscript (a,b) Statistically Significant, p<0.05 with Mann Whitney U test

compliance of ToFEI Guidelines among schools in Goa. The study highlights the tobacco control practices of schools in Goa. The study showed that only 9.6% schools attained a status of Tobacco-Free using the ToFEI guidelines. This was in line with study conducted by Chatterji et al. [18] and higher than study conducted by Kumar A et al. [14] where no school met with the Tobacco-Free criteria. This could be due to lack of awareness on tobacco control and shortage of funds.

ToFEI Guidelines mandate the display of "tobacco free area" and "Tobacco - Free Educational Institution". It was observed that majority of the Educational institutes complied with the same which is in contrast with the study conducted by Sayeed et al. [19] Remaining schools may have believed that the placement of the board was not their own responsibility but of some other agency.

The presence of awareness materials on the harms of tobacco in schools aids in educating the students about the harmful effects of tobacco. It was noticed that majority of the schools did not have a poster or other awareness materials on the harms of tobacco displayed in the premise. This was in contrast with study conducted by Chatterji N et al. [18] Each school was given 3 posters designed by the Department of Public Health Dentistry comprising of COTPA Act, ill effects of tobacco use and passive smoking, awareness on oral cancer.

In terms of organizational criteria such as tobacco control activities in the schools such as competitions, role plays, dramas, talks, and other seminars, it was observed that majority of the schools did not organise a tobacco control activity during the past 6 months. The reason for not organising tobacco control activities could be due to difficulty in dedicating time slot for such activities from their curriculum.

Majority of the schools (81.8%)had no shops selling tobacco products within 100 yards of the Educational Institute which was in line with studies conducted by Chatterji N et al. [18]. This was higher as compared to Kumar et al. [14], Sayeed et al. [19] and Priyanka et al. [20] The reason for violation in some schools could be due to their location in commercial places.

It was observed that the compliance was better for private schools as compared to Government schools. This was in accordance with study conducted by Kumar A et al. [14] but in contrast with study conducted by Goel

et al. [10] where Government schools complied better than private schools. The reason for better compliance of private schools could be due to strict accreditation policy.

There is a need for comprehensive tobacco control programs and effective tobacco control policies among schools. The policy makers should support schools in implementation of these policies. Tobacco control legislations need a multisectoral approach and can only be implemented in a dynamic way. The trio of health, education, and law enforcers need to work together to enforce tobacco control policy.

The study had few limitations. The tobacco sale around the schools was observed for a short duration, which could have not documented any temporary vendors visiting the schools.

In conclusion, the study concluded that majority of the schools could not achieve Tobacco free status as per ToFEI guidelines. The compliance was better among private schools as compared to Government and aided schools. There is a need for schools to strengthen their tobacco control policies and include tobacco control activities as a part of school based programmes.

Author Contribution Statement

All authors contributed equally in this study.

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Conflict of Interest None.

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