

Correlation between the Tobacco Free Educational Institution (TOFEI) Policy Compliance and Current Tobacco use among 13-15 Years Old School Students in Urban India: An Ecological Study

Rohini Ruhil

Department of Health Management, International Institute of Health Management Research (IIHMR), New Delhi, India

Abstract

Background: The government of India has developed Guidelines for “Tobacco Free Educational Institutions” (TOFEI), which must be followed by schools across the country. **Materials and Methods:** This study utilized an ecological design to identify an association between “compliance to TOFEI guidelines” and the “current tobacco use” among 13-15 years school students in urban India. Aggregate data related to “current tobacco users” and “percentage of schools that followed tobacco-free guidelines” were taken from the Global Youth Tobacco Survey (GYTS) India- 4 (2019). We performed a simple linear regression model, and Pearson Correlation was used to see the said association. **Results:** The results showed that as compliance with TOFEI Guidelines increases in Urban India, Current Tobacco Use decreases among school students in the 13-15 years age group. **Conclusion:** Thus, it is essential to address enablers and barriers to adherence to the TOFEI guidelines, as it will help reduce the prevalence of tobacco use among adolescents in urban India.

Keywords: GYTS, tobacco control policy, tobacco-free educational institutions, tobacco use, TOFEI

INTRODUCTION

There is a plethora of epidemiological evidence regarding the harmful health effects of tobacco use on youth.^[1,2] According to GYTS-4 India (2019), 8.5 percent of school children aged 13-15 years use tobacco in any form.^[3] The median age at initiation of Cigarette, bidi smoking, and smokeless tobacco use were 11.5 years, 10.5 years, and 9.9 years, respectively.^[3]

Under the National Tobacco Control Programme (NTCP), the Government of India has developed Guidelines for “Tobacco Free Educational Institutions” (TOFEI), which have to be followed by schools across the country.^[4] Tobacco-free educational institutions guidelines are needed to promote a healthy and safe learning environment for students and staff. The use of tobacco products on campus can expose individuals to second-hand smoke and other health hazards, create litter, and contribute to adverse environmental impacts. Implementing these guidelines can help to reduce the prevalence of tobacco use and can

help create a more positive and safe learning environment for students.^[4]

According to TOFEI guidelines, an educational institute should display a “Tobacco Free Area” signage inside the premises. There should be an organization of at least one tobacco control activity in six months. Tobacco monitors should be designated. The “No tobacco use” norm should be included in the code of conduct guidelines of the educational institute. There should be a marking of 100 yards area from the outer limit of the boundary wall/fence of an educational institute. There should not be any shops selling tobacco products within 100 yards

Address for correspondence: Dr. Rohini Ruhil, International Institute of Health Management Research (IIHMR), Plot No. 3, Sector 18 A, Dwarka, New Delhi - 110 075, India. E-mail: drohineruhil@gmail.com, rohini@iihmrdelhi.edu.in

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: Ruhil R. Correlation between the tobacco free educational institution (TOFEI) policy compliance and current tobacco use among 13-15 years old school students in urban India: An ecological study. Indian J Community Med 2023;48:369-71.

Received: 27-08-22, **Accepted:** 23-02-23, **Published:** 07-04-23

Access this article online

Quick Response Code:



Website:
www.ijcm.org.in

DOI:
10.4103/ijcm.ijcm_736_22

of the educational institute.^[4] Several studies have reported a moderate level of compliance with TOFEI guidelines in Educational Institutes of some urban cities.^[5-7] But rarely has any study seen its correlation with the prevalence of current tobacco use among school students.

METHODOLOGY

This study utilized an ecological design to identify an association between “compliance to TOFEI guidelines” and the “current tobacco use” among 13-15 years school students.

Aggregate data related to “current tobacco users” and “percentage of schools followed tobacco-free guidelines” were taken from the Global Youth Tobacco Survey (GYTS) India- 4 (2019). GYTS is a cross-sectional, nationally representative school-based survey of students in grades associated with ages 13-15 years. In India, GYTS-4 was conducted in 2019 by the International Institute for Population Sciences (IIPS) under the Ministry of Health and Family Welfare (MoHFW).

GYTS uses a global standardized methodology that includes a two-stage sample design with schools selected with a probability proportional to enrollment size. A total of 97,302 students from 987 schools (Public-544, Private-443) participated in the survey. Of these, 80,772 students aged 13-15 were considered for reporting.

The following information was obtained:

1. Percentage of Current Tobacco Users in Urban Areas (Youth). “Current Tobacco Use” means the use of any form of tobacco in the past 30 days.
2. Percentage of schools that followed “tobacco-free school guidelines” in Urban Areas.

We identified 34 states/UTs where GYTS India – 4 (2019) was conducted. These included Andaman and Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chandigarh, Chhattisgarh, Dadra Nagar Haveli Daman and Diu, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Lakshadweep, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Puducherry, Punjab, Rajasthan, Sikkim, Tamil Nadu, Telangana, Tripura, Uttar Pradesh, Uttarakhand, and West Bengal. Data was compiled for these states/UTs regarding variables mentioned in the previous section.

Statistical analysis

Microsoft Excel Version 2301 was used for data compilation and data analysis. Pearson Correlation was used to associate “current tobacco use” among youth in urban India with the “percentage of schools that followed tobacco-free guidelines” in urban India.

We performed a simple linear regression model to assess whether compliance with TOFEI guidelines was linearly associated with current tobacco use among 13-15 Years

school students in urban India. Since we used one independent variable and the dependent variable, we used a fitted line plot to display the data along with the fitted regression line and essential regression output. It also involved finding the best-fitting line through the data points that minimizes the sum of squared differences between the observed and predicted values, i.e. observed and predicted tobacco use. This was done with the help of the ‘Data Analysis’ tab in MS Excel Version 2301.

RESULTS

As shown in Figure 1, there is a significant negative correlation ($r = -0.36$, $P = 0.03$) between the “percentage of schools followed TOFEI guidelines in urban India” with the “current tobacco use among 13-15 years school students in urban India” [Refer to Figure 1].

After performing simple linear regression, the following values were obtained:

α (constant) = 34.82,

and β (regression coefficient) = -0.30.

Hence the regression equation for this correlation turns out to be:

$$Y = 34.82 - 0.30X$$

Where,

Y = Percentage of Current Tobacco Users among 13-15 Years School Students in Urban India.

X = Percentage of Schools that followed TOFEI Guidelines in Urban India.

Therefore, as compliance with TOFEI Guidelines increases in Urban India, Current Tobacco Use decreases among school students in the 13-15 years age group.

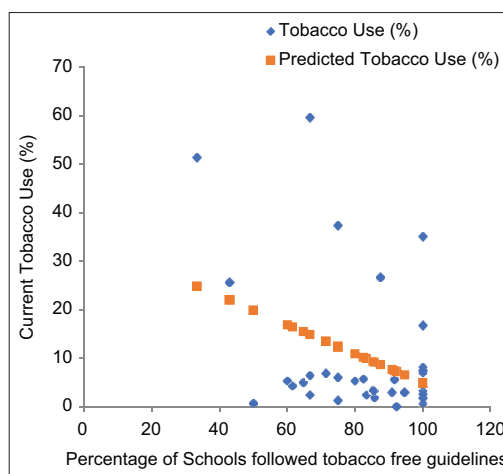


Figure 1: Line Fit Plot showing Correlation between “percentage of schools followed tobacco-free guidelines” and “current tobacco use” among 13-15 Years school students in urban India

DISCUSSION

This might be the first ecological study in India to examine the correlation between “compliance with TOFEI Guidelines” and “Current Tobacco Use” among 13-15 Years school students in urban India. Most published literature on tobacco-free schools in India describes the level of compliance or adherence to the TOFEI guidelines. Few studies conducted in metro cities of India like Delhi,^[7] Mumbai,^[8] and Bengaluru^[6] have shown a widespread violation of section 6 of the COTPA 2003. These studies have shown the easy accessibility of schools to tobacco outlets.^[6-8] Kaur *et al.*^[9] surveyed Chennai and found that only 0.7% of schools displayed the signage of a ban on the sale of tobacco products, and only 2.8% of schools had the signage displaying the prohibition of smoking. A study by Kumar *et al.*^[10] in town and rural areas of Raipur Rani, Haryana showed that none of the schools thoroughly complied with the tobacco-free school policy. However, the compliance score for private schools was better than that of government schools.

Thus, every effort should be made to increase compliance with TOFEI guidelines nationwide. The findings of this study emphasize the importance of increased compliance with TOFEI guidelines in schools to benefit from a reduction in current tobacco use among 13–15-year school students in India.

This study has its set of limitations. The study may be subjected to ecological fallacy, a failure in reasoning that arises when an inference is made about an individual based on aggregate data for a group. The study results may also have confounding bias, which was not adjusted in the study design.

CONCLUSION

It is essential to gain an in-depth understanding of enablers and barriers to adherence with the TOFEI guidelines in order to improve compliance with the guidelines, as the increased compliance may result in decreased tobacco consumption among school students in urban India.

Ethical considerations

The study had no direct involvement with human subjects. The study is a secondary data analysis of GYTS-4 India (2019), available in the public domain and cited correctly in references. All other information sources that helped complete this study have been acknowledged rightly in the references.

Brief bio of the author

Dr. Rohini Ruhil teaches at IIHMR Delhi, India. She is Ph.D. in Social Medicine and Community Health from Jawaharlal Nehru University (JNU), New Delhi. Her other qualifications include BDS, PGDHHM (Gold Medal), and MA (Gold Medal). She has over ten years of experience in teaching, research, tobacco cessation, and industry. She has over 19 publications in journals, including Elsevier and Sage, and is a reviewer in several journals. She has also worked on several MOHFW and WHO manuals, including national tobacco cessation guidelines. She has done the Global Tobacco Control Certificate Program at Johns Hopkins University, presented papers at several conferences, and secured a few awards.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. US Department of Health and Human Services. The health consequences of smoking—50 years of progress: A report of the Surgeon General.
2. Mathers M, Toumbourou JW, Catalano RF, Williams J, Patton GC. Consequences of youth tobacco use: A review of prospective behavioural studies. *Addiction* 2006;101:948-58.
3. Global Youth Tobacco Survey (GYTS) India 4. Fact Sheets. Available from: <https://www.iipsindia.ac.in/content/gyts-4-publications>. 2019.
4. Guidelines for Tobacco Free Educational Institution. Available from: https://ntcp.nhp.gov.in/guidelines_manuals. [Last accessed on 2022 July 13].
5. Priyanka R, Rao A, Rajesh G, Ramya S, Mithun PB. Compliance with statutory tobacco guidelines in and around schools in Mangaluru, India: An observational study. *World J Dent* 2017;8:10-3.
6. Khargekar NC, Debnath A, Khargekar NR, Shetty P, Khargekar V. Compliance of cigarettes and other tobacco products act among tobacco vendors, educational institutions, and public places in Bengaluru City. *Indian J Med Paediatr Oncol* 2018;39:463-6.
7. Yadav R, Swasticharan L, Garg R. Compliance of specific provisions of tobacco control law around educational institutions in Delhi, India. *Int J Prev Med* 2017;8:62.
8. Schensul JJ, Nair SS, Bilgi S, Cromley E, Kadam V, Mello SD, *et al.* Availability, accessibility and promotion of smokeless tobacco in a low-income area of Mumbai. *Tob Control* 2013;22:324-30.
9. Kaur P, Thomas DR, Govindasamy E, Murhekar MV. Monitoring smoke-free laws in restaurants and educational institutions in Chennai, India. *Natl Med J India* 2014;27:76-8.
10. Kumar A, Gupta A, Goel S, Gauba K, Goyal A. Adherence to the tobacco-free educational institution guidelines at schools of Raipur Rani, Haryana. *Indian J Public Health* 2021;65:67.