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ORIGINAL ARTICLE

TOBACCO IN THE CLASSROOM: PREVALENCE AND PATTERNS OF TOBACCO USE AMONG SCHOOL STUDENTS IN NAMAKKAL DISTRICT, TAMIL NADU, INDIA,2023 – A CROSS-SECTIONAL STUDY.

Arjuhn R [(1)], *Lalitha N P* [(1)]

(1) Directorate of Public Health and Preventive Medicine

ABSTRACT

INTRODUCTION : Tobacco usage is a major global health issue, particularly in low- to middle-income countries like India. Early initiation, especially among school-aged children, increases the risk of tobacco-related morbidity and mortality. Understanding tobacco use prevalence and patterns among youth can help shape effective interventions. We aimed to assess the prevalence and patterns of tobacco use among 9th to 12th-grade school students in the Ernapuram Block of Namakkal, Tamil Nadu.

METHODS : This cross-sectional study surveyed 300 students in December of 2023, allowing them to disclose tobacco use through either a written questionnaire or a confidential in-person interview. Data were analysed using descriptive and statistical methods to determine prevalence and differences in disclosure rates.

RESULTS: Among the 300 students surveyed, 63 (21%) reported tobacco use, with 51 male and 12 female users. Confidential settings led to higher disclosure rates, particularly among female students (p-value < 0.05). Smokeless tobacco was the most common form, used by 76% of users, with an average initiation age of 13–15 years. A majority (56%) reported using tobacco more than five times weekly, with an average tobacco use duration of 3.37 years.

CONCLUSION: This study underscores a high prevalence of tobacco use among school students, particularly smokeless forms, with early initiation and frequent use patterns indicating dependency. Confidential interviews were more effective than questionnaires for disclosure, especially among girls. Targeted education on tobacco risks and long-term health impacts are essential to address this growing issue.

KEYWORDS : Tobacco, Smokeless tobacco, School children

INTRODUCTION

Tobacco is the most pressing health problem all around the world especially in Low to middle income countries such as India.[1] Tobacco usage causes mortality up to as high as half of its users who doesn't quit,[2-3] it already caused immense damage in terms of mortality of around 8 million people each year, including an estimated 1.3 million non-smokers through second-hand smoke.[4]

People with early age of tobacco initiation especially school going children, are highly likely to undergo tobacco related morbidity and mortality, as per the current trend it is estimated around 250 million adolescents, mostly from low to middle income countries, could face mortality in the future.[5] In India, nearly 1 in 10 School going children in the age group 13-15 years have ever smoked cigarettes.[6]

Action towards Preventing or quitting tobacco usage among Indian school going children is extremely important especially because India has various forms of tobacco, both in smoke and smokeless tobacco.[7] In this regard, only handful of studies that have reported on prevalence of tobacco usage in school going children.[8-11] Therefore, this study will further shed light on the prevalence of tobacco usage in a school in Namakkal among 9 to 12 grade students.

The primary objective of this study is to assess the prevalence, patterns, and influencing factors of tobacco use among 9th to 12th-grade school students in Ernapuram block, Namakkal, Tamil Nadu, 2023.

METHODS

A descriptive cross-sectional study was conducted in a school setting involving study population of 300 students from a single school in the Ernapuram block, Namakkal, Tamil Nadu with convenient sampling technique. This survey was conducted during December 2023.

The questionnaire used in this study was a pre-fixed, semi-structured questionnaire. It was not a completely

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Corresponding Author: Arjuhn R
e-mail : mmcarju@gmail.com

standard template adopted verbatim from previous studies, but rather a customised questionnaire that drew upon established questions from prior research on adolescent tobacco use, adapted to the specific cultural and regional context of school-going children in Namakkal, Tamil Nadu.

The questionnaire contained the following sections such as demographic information, which included questions about the student's age, gender, class/grade, and their family's socioeconomic background.

Secondly it was about tobacco use wherein there were direct questions about current and past tobacco use. Later we also employed Confidential Disclosure Prompts, while not explicitly a separate section in the written questionnaire, the design anticipated the potential for underreporting.

Thus, the questionnaire served as an initial screening, with the understanding that more sensitive information would be sought during the confidential interviews. The closed-door environment interviews were conducted individually with all the students who either disclosed tobacco use in the initial questionnaire or were identified through other means.

We also chose convenient sampling primarily due to feasibility and resource constraints within the scope of this descriptive cross-sectional study. Conducting a census or a more complex probability-based sampling method (like stratified random sampling) across multiple schools in the block would have been significantly more time-consuming and resource-intensive, requiring a larger research team, more funding for travel and logistics, and potentially more time for obtaining permissions from multiple school administrations.

Following an awareness session by district tobacco consultant of Namakkal, school students were given the option of two different methods to disclose their tobacco usage which are Written Questionnaire based and In-person interview in confidential setting.

Written questionnaire used was based on World health organization designed global Youth Tobacco survey questionnaire including domains such as knowledge, attitude of school students towards tobacco and Prevalence of tobacco usage including frequency and pattern tobacco usage in school students.

The same questionnaire was used in in-person interview conducted in a confidential setting by District Tobacco consultant to facilitate increased compliance of school students to participate in this study

Paper-based questionnaires were used for the initial survey. The responses were then manually entered into a spreadsheet program (Microsoft Excel) for data cleaning, organization, and preliminary analysis. Statistical analysis to calculate frequencies & percentages, using statistical software SPSS.

Necessary approvals have been obtained before the start of the study from the Institutional ethical committee of Directorate of Public Health and Preventive Medicine. There were no deviations from the study proposal following approval.

RESULTS

A survey of 300 students revealed that 63 students (21%) disclosed using tobacco, among them 51 were boys and 12 were girls (Table 1). None of the girls and only nine boys admitted to tobacco use through the questionnaire, whereas 42 boys and 12 girls disclosed usage in a confidential in-person interview.

Regarding the types of tobacco products used, a striking majority of 48 students (76%) used smokeless tobacco with cigarette being second choice with 12 students (19%) and rest 3 were using beedis (5%). This usage of smokeless tobacco was reported to be as early as 4th grade (9 years), with the average initiation age between 13 and 15 years.

The duration of tobacco use varied, with 5% (n=3) of students reporting one-year use, 6% (n=4) reporting two years, 41% (n=26) with three years of usage, 43% (n=27) reporting four years of usage, and 5% (n=3) having a five-year history. The mean duration of use was approximately 3.37 years, with a standard deviation of ±0.87 years.

In terms of usage frequency, 16% (n=10) of the students reported using tobacco 2-3 times per week, 28% (n=18) used it 4-5 times per week, and the majority 56% (n=35) used it more than five times weekly and all the students were from low to middle income socioeconomic backgrounds.

Table 1: Tobacco usage behaviour among school students at Ernapuram block, Namakkal, Tamil Nadu, India, 2023. (N=300)

Tobacco usage behaviour	n (%)
Number of tobacco users	63 (21%)
Smokeless tobacco usage	48 (76%)
Cigarettes	12 (19%)
Beedis	3 (05%)
Duration of usage - 5 years	3 (05%)
Duration of usage - 4 years	27 (43%)
Duration of usage - 3 years	26 (41%)
Duration of usage < 3 years	7 (11%)
Frequency of usage > 5 times a week	35 (56%)
Frequency of usage 4-5 times a week	18 (28%)
Frequency of usage < 4 times a week	10 (16%)

DISCUSSION

Prevalence of tobacco usage among school students in India has range from 1.9% to 75.3%.[12,13] and therefore prevalence of 21% from a single school in Namakkal, Tamil Nadu is higher. Prevalence is higher among boys than girls as seen in several Indian studies.[8,14,15]

The findings from this survey underscore a notable disparity in the willingness to disclose tobacco use through a written questionnaire versus in person confidential setting as 82% of male tobacco users and 100% of female tobacco users chose confidential interview setting to disclose their usage over written questionnaire which also highlights a statistically significant difference (p-value < 0.05) in disclosure rates suggests between female and male students This underscores the societal or peer-related stigma or fear of judgment when it comes to admitting tobacco use in a written questionnaire especially among female students.[12] The high prevalence of smokeless tobacco usage among school students, with 76% opting for products like "cool lip," is particularly concerning. This form is preferred mainly because it can be easily concealed in a school setting and suggests that it is easily accessible and cost friendly to these school children. Cigarettes and beedis are least favoured when compared to Smokeless tobacco. Smokeless is notorious in causing a premalignant condition called oral submucosal fibrosis in young individuals.[16,17]

According to the GAT survey India 2016-2017, 28.6% of all adults in the population use tobacco in some form. Among them, 21.4% use smokeless tobacco, while 10.7% are tobacco smokers. Additionally, 3.2 crore adults engage in dual use, meaning they consume both smoked and smokeless forms of tobacco. The prevalence of tobacco use varies significantly by gender: 19.0% of men and 2.0% of women are smokers, whereas 29.6% of men and 12.8% of women use smokeless tobacco.

In comparison to the GAT survey, which reported that 28.6% of all adults use tobacco, our study found a slightly lower prevalence of 21% (63 individuals). However, smokeless tobacco usage in our study was significantly higher, with 76% (48 out of 63 users) reporting its use, compared to 21.4% in the GAT survey. In terms of tobacco smoking, our findings showed that 19% used cigarettes and 5% used beedis, while the GAT survey reported a combined smoking prevalence of 10.7%. These differences may reflect variations in geographic, cultural, or demographic factors within the study population compared to the national average.

The early age of initiation, with some students starting as early as 4th grade and an average initiation age of 13 to 15 years, underscores a critical period during adolescence where tobacco prevention efforts are essential.

The duration data, with most students reporting three to four years of usage, indicates that initiation of tobacco usage by most of the students correlates with the lockdown period of India during pandemic and Sustained use over time, further highlights the potential for long-term health impacts.

The frequency of tobacco use among students reveals a concerning trend, with a majority 56% reporting use more than five times per week. This high rate of frequent usage suggests not only a habitual pattern but potentially a dependency on tobacco products among these students. Furthermore, 28% reported using tobacco 4-5 times weekly, and an additional 16% used it 2-3 times per week. The overall distribution indicates that a substantial portion of these students engage in regular, repeated use, which may quickly elevate their risk of developing health complications associated with tobacco consumption. These usage patterns underscore the urgency for intervention, as early and frequent use during adolescence can lead to stronger addiction and make cessation efforts more challenging in adulthood. Targeted interventions that not only address the risks associated with smokeless tobacco but also focus on early education to curb initial experimentation among young students. Additionally, public health efforts could emphasize the long-term health consequences of all forms of tobacco, especially as prolonged use patterns are already emerging within this age group.

LIMITATIONS

Smoking behaviour reported in the questionnaire may not accurately reflect students' actual smoking habits and may not be representative of the population because of the choice of sampling technique.

CONCLUSION

Overall, this study highlights critical insights into tobacco use among low to middle socioeconomic school students, with 21% reporting usage, predominantly of smokeless tobacco, and many starting as early as age 13. Confidential in-person settings are better than written questionnaire setting in disclosing tobacco usage especially with female students. The high frequency and extended duration of use indicate habitual patterns that could lead to dependency. Additionally, 80% of students lacked awareness of second-hand smoke dangers, and 64% had family members who smoked. Targeted educational initiatives addressing tobacco risks, second-hand smoke, and early intervention are essential to curb this growing issue among youth.

CONFLICT OF INTEREST

None

REFERENCE

1. Chaudhry K, Prabhakar AK, Prabhakaran PS Prevalence of tobacco use in Karnataka and Uttar Pradesh in India. 2001 Survey conducted y the Indian Council of Medical research with financial support by World Health Organization, South Asian regional Office.

2. Banks, E., Joshy, G., Weber, M.F. et al. Tobacco smoking and all-cause mortality in a large Australian cohort study: findings from a mature epidemic with current low smoking prevalence. BMC Med 13, 38 (2015).

3. Siddiqi, K., Husain, S., Vidyasagaran, A. et al. Global burden of disease due to smokeless tobacco consumption in adults: an updated analysis of data from 127 countries. BMC Med 18, 222 (2020).

4. Global Burden of Disease [database. Washington, DC: Institute of Health Metrics; 2019. IHME.

5. Peto R, et al Developing populations: The future health effects of current smoking patterns Mortality from smoking in developing counties. 1950-2000 Oxford Oxford University Press:101–3

6. Sinha DN, Reddy KS, Rahman K, Warren CW, Jones NR, Asma S. Linking Global Youth Tobacco Survey (GYTS) data to the WHO framework convention on tobacco control: the case for India. Indian J Public Health. 2006; 50:76–89.

7. Gupta PC. Tobacco control in India. Indian J Med Res. 2006; 123:579–82.

8. Kapoor SK, Anand K, Kumar G. Prevalence of tobacco use among school and college going adolescents of Haryana. Indian Journal of Paediatrics. 1995; 62:461–466. Doi: 10.1007/BF02755068.

9. George A, Varghese C, Sankaranarayanan R, Nair MK. Use of tobacco and alcoholic beverages by children and teenagers in a low-income coastal community in south India. Journal of Cancer Research. 1994; 9:111–113. Doi: 10.1080/08858199409528282.

10. Jayant K, Notani PN, Gulati SS, Gadre VV. Tobacco use in school children in Bombay, India. A study of knowledge, attitude and practice. Indian Journal of Cancer. 1991; 28:139–147.

11. Singhi S, Broca JS, Mathur GM. Smoking behaviour of rural schoolboys. Indian Pediatrics. 1987; 24:655–659.

12. Sinha DN, Gupta PC, Pednekar MS. Tobacco use among students in the eight north-eastern states of India. Indian J Cancer. 2003; 40:43–59.

13. Singh V, Pal HR, Mehta M, Dwivedi SN, Kapil U. Pattern of tobacco use among school children in National Capital Territory (NCT) Indian J Pediatr. 2007; 74:1013–20. Doi: 10.1007/s12098-007-0186-8.

14. Chadda RK, Sengupta SN. Tobacco use by Indian adolescents. Tob Induc Dis. 2002;1:111–9. Doi: 10.1186/1617-9625-1-2-111

15. Reddy KS, Arora M. Tobacco use among children in India: A burgeoning epidemic. Indian Pediatr. 2005;42:757–61.

16. Gupta PC. Mouth cancer in India – A new epidemic? Indian J Med Assoc. 1999;97:370–3.

17. Gupta PC, Sinor PN, Bhonsle RB. Oral submucous fibrosis in India: A new epidemic? Natl Med J Ind. 1998;11:113–6