Tobacco Prediction- India Youth Tobacco Survey 2022

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Abstract- *The abstract summarizes key points related to tobacco use and its various aspects. It provides an overview of factors such as different forms of tobacco consumption, experimentation, recent use, and cessation. Additionally, it covers susceptibility to future use, the inclusion of emerging products like e- cigarettes, and exposure to secondhand smoke. The abstract also highlights specific locations where exposure occurs, sources of tobacco products, and avenues of influence such as mass media and social events. The prevalence of tobacco use and sources of obtaining tobacco are explored, recognizing that figures may not sum to 100% due to other sources. The unit of analysis is the school.*

I. KNIME TOOL ABSTRACT

KNIME, which stands for Konstanz Information Miner, is an open-source data analytics, reporting, and integration platform. It provides a graphical interface for designing data workflows, allowing users to visually create, modify, and execute data analysis processes. KNIME is widely used in data science, machine learning, and business intelligence applications.

1. Modular Workflow Design
2. Extensibility
3. Data Integration
4. Data Analysis and Statistics
5. Visualization
6. Workflow Automation
7. Community and Collaboration
8. Community and Collaboration
9. Open Source

Overall, KNIME is a versatile and user-friendly tool that empowers data scientists, analysts, and researchers to perform data-driven tasks efficiently and collaboratively.

Knime Tool

II. METHODOLOGY

The India Youth Tobacco Survey (GYTS) employs a standardized global methodology featuring a two-stage sample design. In this approach, schools are chosen with a probability proportional to their enrollment size. Following school selection, classes within these schools are randomly chosen, and all students within the selected classes are eligible to partake in the survey. The questionnaire utilized in the survey is based on a standardized core, complemented by optional questions that countries can customize to measure and monitor critical tobacco control indicators.

Covering a wide range of topics, the questionnaire delves into aspects such as tobacco use (both smoking and smokeless), cessation, exposure to secondhand smoke (SHS), pro- and anti-tobacco media messages and advertisements, access to and availability of tobacco products, as well as attitudes regarding tobacco use. To ensure participant confidentiality, the survey employs a self-administered approach using paper sheets, providing anonymity to respondents.

In the context of India, GYTS-4 was conducted in 2019 by the International Institute for Population Sciences (IIPS) under the Ministry of Health and Family Welfare (MoHFW).

Impressively, the survey achieved an overall response rate of 96.9%. The survey involved a substantial sample size, with 97,302 students from 987 schools, encompassing both public (544) and private (443) institutions. Noteworthy is the

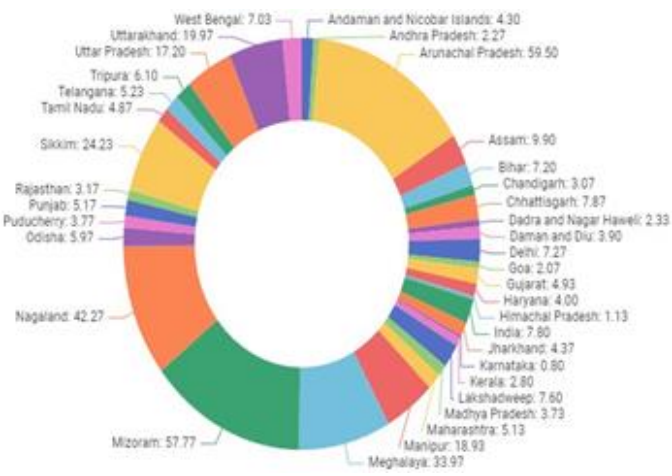
focus on students aged 13-15 years, with 80,772 individuals in this age group considered for the final reporting.

III. AIM & OBJECTIVES

The overall aim was to document and monitor the extent of smoking and smokeless tobacco use and to understand and assess the students' attitudes, knowledge, and behavior towards tobacco use and its health impact, including cessation, secondhand smoke, Media and second advertising, and minors' access. Specific objectives were:

1. To determine the level of tobacco use by State/UTs, sex, location of school (urban/rural).
2. To estimate the age of initiation of cigarette and bidi smoking and smokeless tobacco.
3. To estimate the exposure to secondhand smoking (SHS). 4. To estimate the exposure to tobacco advertising

Current Use of any Tobacco by state(%) in India



TOBACCO USE

- 8.5% of students - 9.6% of boys and 7.4% of girls - currently used any tobacco products
- The highest current use of any tobacco was in Arunachal Pradesh &Mizoram (58% each) and the lowest in Himachal Pradesh (1.1%).
- 7.3% of students - 8.3% of boys and 6.2% of girls – currently smoked tobacco.
- 4.1% of students - 4.6% of boys and 3.4% of girls - currently use smokeless tobacco.

CESSATION

- 2 in 10 current smokers -25% of boys and 13% of girls - tried to quit smoking in the past 12 months.
- 21% of current smokers want to quit smoking now.
- 27% of current users of smokeless tobacco - 28% of boys and 25% of girls - tried to quit using in the past 12 months
- 1 in 4 current users of smokeless tobacco wanted to quit now

SECONDHAND SMOKE

- 11% of students were exposed to tobacco smoke at home
- 21% of students were exposed to tobacco smoke inside enclosed public places

ACCESS & AVAILABILITY

- 69% of current cigarette smokers and 78% of current bidi smokers bought cigarettes/ bidis from a store, paan shop, street vendor or vending machine
- Among the current smokers who bought cigarette/bidi, 45% of cigarette smokers and 47% of bidi smokers were not refused because of their age.

MEDIA

- 52% of students noticed anti-tobacco messages in the mass media.
- 18% of students noticed tobacco advertisements or promotions when visiting points of sale.

KNOWLEDGE & ATTITUDES

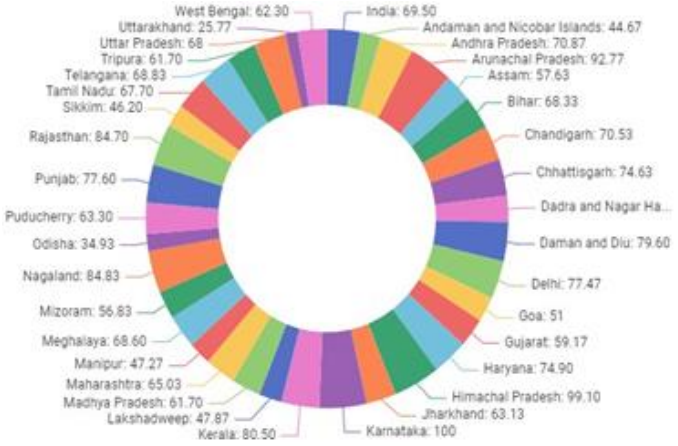
- 71% of students thought other people's cigarette smoking was harmful to them.
- 58% of students favored a ban on smoking inside enclosed public places

SCHOOL POLICY

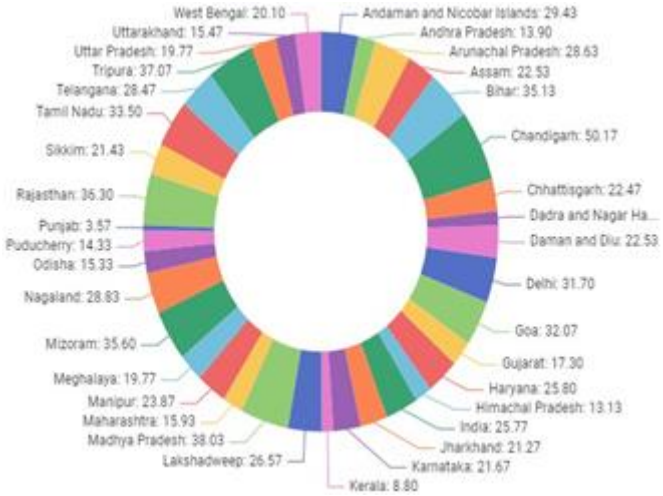
85% of school heads - 85% in rural and 87% in urban schools were aware of COTPA. 2003.

83% of school heads-82% in rural and 63% in urban schools - were aware of the policy to display 'tobacco-free school` board.

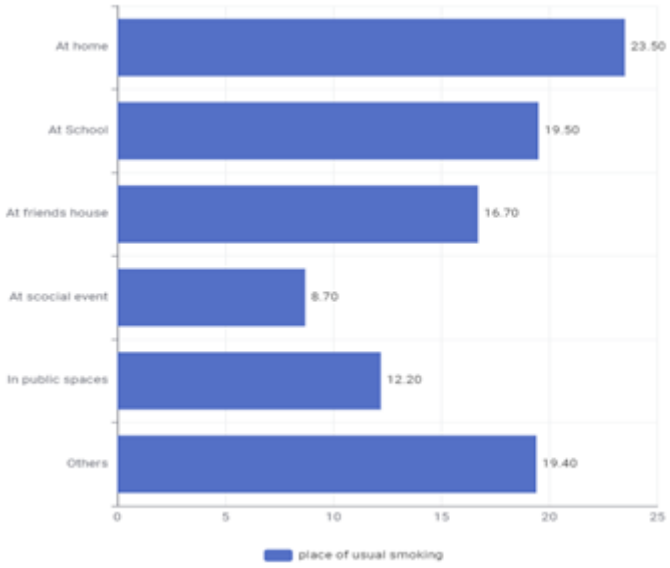
Current cigarette smokers who bought cigarettes from a store, paan shop, street vendor, or vending machine (%)



Current bidi smokers who bought bidi from a store, paan shop, or street vendor (%)

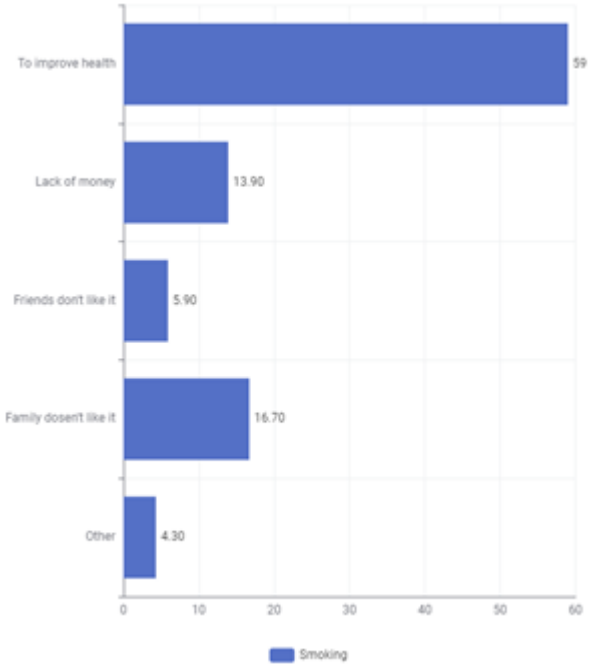


Place of usual smoking

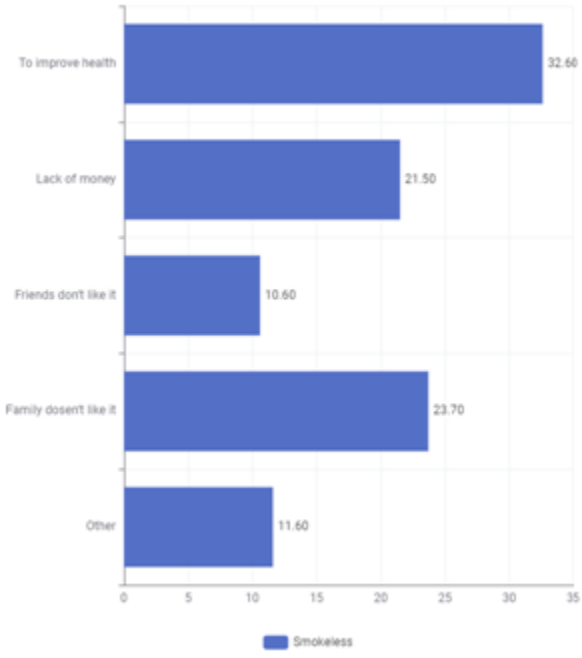


Reason for quitting tobacco(%)

1.Smoking



2.Smokeless



Indicators	2003	2006	2009	2019	2022
Currenttobaccousers	16.9	13.7	14.6	8.5	18.6
Currenttobacco user, boys	21.6	16.8	19.0	9.6	10.7
Currenttobaccouser,girls	9.7	9.4	8.3	7.4	6.5
Currenttobaccosmokers	8.1	7.0	8.1	7.3	7.9
Currentcigarette smokers	4.2	3.8	4.4	2.6	5.6
Currentbidismokers	2.2	4.7	5.3	2.1	2.3
Currentsmokelesstobacco user	14.0	9.4	9.0	4.1	4.6
Exposureto tobacco smokeat home	36.4	26.6	21.9	11.2	8.2
Sourceofobtainingcigarette:Store	65.8	51.9	47.0	39.7	32.4
Refusedtosell cigaretteduetoage	44.9	27.9	43.8	54.7	59.8
Studentwhothoughtotherpeople's Tobaccosmokingis harmfulto them	—	67.9	66.8	70.6	75.7

The provided data illustrates the evolving landscape of tobacco use and exposure among students from 2003 to 2022. While there is a general decrease in certain indicators, such as current tobacco smokers and exposure to tobacco smoke at home, there are concerning upticks, notably in the overall prevalence of current tobacco users and specific categories like current cigarette smokers. Gender disparities persist, with boys consistently exhibiting higher tobacco use rates than girls. The data also highlights positive shifts, such as an increasing refusal by stores to sell cigarettes to underage individuals. Importantly, students' awareness of the harmful effects of tobacco smoke has shown a steady rise. This abstract underscores the complex and dynamic nature of tobacco-related behaviors among students, emphasizing the need for targeted public health interventions and ongoing monitoring to address emerging trends and challenges.

Determine the Level of Tobacco Use

- Parameters: State/UTs, sex, location of school (urban/rural).
- Purpose: Understand the prevalence of tobacco use among students, considering variations based on geographic location and gender.

To comprehensively gauge the landscape of tobacco use among students, we delve into the intricate details of this pervasive habit across various parameters. Our focus extends to the dynamic factors of State/UTs, the influence of gender, and the distinctive settings of schools, whether nestled in the vibrant tapestry of urban life or embraced by the tranquility of rural landscapes.

Embarking on this analytical journey, we seek to unravel the prevalence of tobacco consumption with a keen eye on the diverse regions and territories represented by the States and Union

Territories. By doing so, we aim to uncover nuanced insights into the patterns and trends that might emerge, shedding light on the unique challenges and dynamics in different parts of the country.

Furthermore, our exploration extends beyond mere statistics by incorporating the crucial dimension of gender. Recognizing the potential variations in tobacco use based on sex, our inquiry aims to elucidate any disparities or distinctive trends that may manifest among male and female students.

The location of schools, whether nestled in the hustle and bustle of urban centers or immersed in the serenity of rural landscapes, adds an additional layer of complexity to our study. By discerning the prevalence of tobacco use in these diverse settings, we strive to capture the contextual nuances that might influence the habits of students based on their environmental surroundings.

In essence, this multifaceted approach seeks to paint a vivid portrait of tobacco use among students, navigating through the diverse landscapes of geography, gender, and school location. Through this exploration, we aspire to not only quantify the prevalence but also understand the underlying dynamics, fostering a comprehensive comprehension that can inform targeted interventions and strategies.

TOBACCOUSE	Boys(%)	Girls(%)	Rural(%)	Urban(%)	Total(%)
Any tobacco use (Smokedand/orSmokeless)					
a. Evertobacco user	19.3	16.9	19.5	13.5	18.1
b.Currenttobacco users	9.6	7.4	9.4	5.5	8.5

Smokingtobacco	Boys(%)	Girls(%)	Rural(%)	Urban(%)	Total(%)
a. Evertobacco smokers	12.6	9.3	11.8	8.1	11.0
b. Currenttobaccosmokers	8.3	6.2	8.1	4.5	7.3

Cigarette	Boys(%)	Girls(%)	Rural(%)	Urban(%)	Total(%)
a. Evercigaretteuser	6.0	3.1	4.7	4.1	4.6
b. Currentcigaretteuser	3.5	1.6	2.6	2.3	2.6

Bidi	Boys(%)	Girls(%)	Rural(%)	Urban(%)	Total(%)
a. Everbidiusers	5.0	3.2	4.3	3.7	4.1
b. Currentbidiusers	2.8	1.4	2.3	1.9	2.1

Electronic cigaratte	Boys(%)	Girls(%)	Rural(%)	Urban(%)	Total(%)
a. Awareness aboute-cigarette	27.3	26.4	27.5	24.7	26.9
b. Evere-cigaretteuse	3.4	2.1	2.6	3.2	2.8

Cessation Smokingtobacco	Boys(%)	Girls (%)	Rural (%)	Urban(%)	Total(%)
a. Evertobacco smokerWho quit inlast 12month	13.0	7.0	9.8	14.6	10.6
b. Current tobacco smoker Who tried to quit smokingInthe past 12month	24.8	13.3	18.6	29.3	20.0
c. Currenttobaccosmokerswhowanted toquitsmokingnow	24.4	15.2	19.8	25.7	20.6

Cessation Smokelesstobacco	Boys(%)	Girls(%)	Rural(%)	Urban(%)	Total(%)
a.Eversmokeless tobaccouserswhoquitIn last 12month	10.7	8.0	8.7	13.7	9.4
b.Currentsmokelesstobacco users whoTriedto quittobacco inthe past12month	27.5	25.4	27.0	23.7	26.7
c. Current smokeless tobacco users who wanted to quit tobacco now	22.8	27.7	24.9	24.0	24.8

REFERENCES

[1] Academic Databases: Utilize databases like PubMed, JSTOR, or Google Scholar to search for peer-reviewed articles, studies, and reports on tobacco use among students. Keywords such as "student tobacco use trends" or "youth smoking prevalence" may be helpful.

[2] Government Health Agencies: Check reports and publications from health agencies such as the World Health Organization (WHO), Centers for Disease Control and Prevention (CDC), or national health agencies. These organizations often provide comprehensive data on tobacco use.
[3] Research Journals: Explore journals specializing in public health, epidemiology, or related fields. Journals like the American Journal of Public Health or Tobacco Control often publish research on tobacco-related topics.
[4] Surveys and Reports: Look for national or international surveys and reports on tobacco use, especially those conducted by health organizations or research institutions.
[5] Books: Consider looking into books that focus on public health, tobacco control policies, or adolescent health. Books can provide in-depth analysis and historical context.
[6] World Health Organization (WHO) - Tobacco: - [WHO Tobacco Control](https://www.who.int/tobacco/en/)
[7] Centers for Disease Control and Prevention (CDC) - Smoking & Tobacco Use:- [CDC - Smoking & Tobacco Use](https://www.cdc.gov/tobacco/index.htm)
[8] National Institute on Drug Abuse (NIDA) - Tobacco, Nicotine, and E-Cigarettes:- [NIDA - Tobacco, Nicotine, and E-Cigarettes](https://www.drugabuse.gov/drug-topics/tobacco- nicotine)
[9] Campaign for Tobacco-Free Kids:- [Campaign for Tobacco-Free Kids](https://www.tobaccofreekids.org/)
[10] PubMed - National Library of Medicine:- [PubMed](https://pubmed.ncbi.nlm.nih.gov/)- Search for academic articles and research papers related to tobacco use among students.