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Unveiling the socioeconomic predictors of tobacco use in women: Evidence from NFHS-5

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Abstract

Introduction- Approximately 8 million deaths globally are linked to tobacco use with the bulk of these deaths occurring in countries with low- and middle-income. In these regions deaths tolls from tobacco is projected to rise to 10 million by 2030. There are about 1 million adult deaths in India each year due to it, with women being predominantly vulnerable because of the effects on their reproductive and child health.

Methodology - This research employs data from the fifth round of the National Family Health Survey (NFHS-5), a cross-sectional survey carried out throughout India. The sample comprised 724,115 women aged 15 and older. The analysis assessed the prevalence of both smoking and non-smoking (smokeless) forms of tobacco. Demographic factors, including aspects such as age, educational attainment, caste, and wealth index, were analyzed using SPSS, and logistic regression was applied to identify significant associations between them.

Results - In the overall findings, 4% of the total women surveyed indicated use of some type of tobacco, with smokeless products such as Gutkha and Khaini being the most prevalent. Tobacco consumption was seen significantly lower after Multivariate analysis among less educated women, followed Christianity, and those belonging to the poorest wealth quintiles.

Conclusion- Indian Women's Tobacco consumption is highly associated with socioeconomic predictors. Educational status, rural residence, and caste disparities play a vital role. For tobacco use reduction among women in India to be effective, targeted initiatives that emphasize education and rural populations are needed.

Keywords: Women; Tobacco; NFHS 5; Age 15 and above

1. Introduction

Tobacco use persists as a daunting global challenge to public health, leading to over 8 million deaths each year. Around 7 million of these lives are lost directly due to tobacco use, with an additional 1.3 million casualties attributed to the perilous impact of secondhand smoke [1]. The weight of tobacco-related illnesses is anticipated to rise, particularly in low- and middle-income nations, potentially resulting in 10 million deaths yearly by 2030, primarily in developing countries[2]. Every year, tobacco kills around 1 million adults in India, accounting for 9.5% of total deaths, and contributes considerably to the overall burden of non-communicable diseases (NCDs) such as heart disease and chronic obstructive pulmonary disease (COPD)[3].

The use of Tobacco is specifically concerning for women given that it is connected to a number of reproductive health concerns, poor pregnancy outcomes, and higher infant mortality rates (CDC 2020, WHO 2019). Despite global efforts to

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reduce tobacco consumption, the prevalence among women—especially those who use smokeless forms—continues to be a significant public health challenge in India. According to the Global Adult Tobacco Survey (GATS), 14.2% of women aged 15 and above engage in tobacco use, with smokeless products being the predominant type [4]. Cultural norms and rural societal factors exacerbate the situation, often resulting in higher consumption rates in these areas [4,5].

India's challenging tobacco landscape, marked by a diverse range of smoking and smokeless products, is further complicated by high second-hand smoke exposure, which affects around 35% of non-smokers [6]. Tobacco use varies, with bidi prevalent in rural areas, cigarette smoking in major cities, Mishri and Mawa in western India, and Gutka and betel quid in North and Eastern India for smokeless tobacco[4,5].

The Indian government has implemented various tobacco control regulations, including the Cigarettes and Other Tobacco Products Act (COTPA), which regulates the advertising and sale of tobacco products [7,8]. Nonetheless, these strategies frequently overlook gender-specific needs and do not adequately tackle the unique challenges women face, such as social stigma and restricted access to cessation programs.[9,10].

Furthermore, tobacco usage has significant economic consequences with second-hand smoke exposure costing an estimated ₹567 billion ($8.7 billion) per year and disproportionately affecting women[11]. These issues underscore the pressing demand for more effective and focused tobacco control measures to safeguard vulnerable populations, especially women and children, from the harmful effects of tobacco consumption. (WHO 2021)

The purpose of the current study is to investigate the predictors and patterns of tobacco use in women along with cessation. The insights from this analysis may act as a catalyst for crafting more efficient and focused interventions aimed at mitigating the detrimental consequences of tobacco use among this susceptible population.

2. Materials and method

2.1. Source of Data & Sample Selection

The study employed information from the fifth round of the National Family Health Survey (NFHS-5). Commonly referred to as the Demographic and Health Survey (DHS), this extensive, multi-phase survey is conducted on a representative sample of households funded by the Ministry of Health and Family Welfare (MOHFW) of the Government of India. . The International Institute of Population Sciences (IIPS) in Mumbai has been designated as the focal point for coordination and technical competence.

NFHS 5 is a cross-sectional survey in India, conducted in two phases, covering 28 states and 8 union territories. It uses a stratified sampling design, with urban and rural stratification for data collection. It gathered information from 101,839 men and 724,115 women across 636,699 households, addressing various topics including nutrition, family planning, education, domestic violence, and other health-related issues. Data collection was facilitated through four schedules using computer-assisted personal interviewing (CAPI) in local languages.

2.2. Sampling Design

The study uses a stratified, two-stage sampling design across all districts to ensure representatives at both national and state levels. First stage is performed in which Primary Sampling Units (PSUs) are selected by means of probability proportional to size (PPS) sampling, with larger PSUs having a higher probability of selection.

The second stage involved random selection of households within each PSU. Smaller PSUs with fewer than 40 households were grouped together with neighboring PSUs to facilitate adequate sampling. Systematic sampling methods were employed to select both PSUs and households, specifically targeting 20 households per PSU across each state.

2.3. Stratification

The sample design for NFHS-5 included stratification that categorized districts into urban and rural regions, with further stratification of rural areas based on village size (number of households). Rural areas were split into three distinct strata according to village size, and six equal-sized sub-strata were established in accordance with the proportion of Scheduled Caste (SC) and Scheduled Tribe (ST) populations. Additionally, sub-strata were implicitly stratified by organizing the sampling frame aligned with the female literacy rates.

Villages within each stratum were selected using the PPS sampling method, relying on 2011 Census Data for rural areas. Community Enumeration Blocks (CEBs) were also identified based on information sourced from the Office of the Registrar General and Census Commissioner of India.

2.4. Household Listing and Selection

The survey included listing households within selected PSUs, and for PSUs with over 300 households, the area was divided into smaller segments. After listing 22 households were selected per PSU using systematic random sampling, with adjustments for a 10% non-response rate.

2.5. Eligible Respondents

The survey included interviews for women aged 15-49 and men aged 15-54 in eligible households, ensuring that both genders' pertinent data was collected.

2.6. Dependent Variable

The analysis encompassed 724,115 adult women aged 15 and older in India, concentrating on their tobacco usage patterns, which included both smoked and smokeless forms. Responses were categorized as "yes" or "no." Smoked tobacco refers to products like cigarettes, pipe tobacco, cigars, water pipes, and hookahs, while smokeless tobacco (SLT) includes chewable products such as gutkha, pan masala containing tobacco, khaini, and pan.

To assess the prevalence of adults who had attempted to quit tobacco use, the study included dependent variables such as "attempted to stop smoking or use any form of tobacco in the last 12 months" and "received advice to quit smoking or tobacco use" from healthcare professionals in the previous year. Additionally, respondents were asked if anyone was present when someone else smoked in their home or elsewhere within the past 30 days, utilizing this information as a measure of exposure to secondhand smoke.

2.7. Independent Variable

These were selected after an extensive review of the available research. Among the demographic characteristics considered were age, religion, caste, area and location of living, education, occupation, wealth index, and type of household. The following categories were used to group the data: age (15–19, 20–24, 25–29, 30-34, 35–39, 40–44, 45–49), religion (Hindu, Muslim, Christian, and Others), caste (SC, ST, and Others), location of residence (urban Vs. rural), education status (illiterate, primary, secondary, higher), occupation status, and wealth index (poorest, poor, rich, richer, and richest). Pregnancy and breastfeeding were also taken in consideration for Independent variable.

2.8. Data analysis

The analysis was conducted using version 23.0 of the Statistical Package for the Social Sciences (SPSS). The study examined the prevalence of different tobacco consumption behaviors among women aged 15 to 49, accompanied by corresponding 95% confidence intervals (CIs).

Frequencies (n) and weighted percentages (%) with accompanying 95% confidence intervals are used to report categorical data. The relationship between numerous individual variables and women's tobacco usage (smoked, smokeless, and combination tobacco) was evaluated using the Chi-square test. Using multivariate logistic regression analysis and sampling weights to assure representation, adjusted odds ratios (AOR) and 95% confidence intervals were generated to identify independent factors related to the various kinds of tobacco use. For statistical significance, a p-value of 0.05 or lower was employed.

2.9. Ethical Consideration

The study doesn't require ethical approval since it is analyzing secondary data from publicly accessible NFHS 5 data. Nonetheless, data analysis was conducted in a way that that respondents' privacy and confidentiality were maintained.

3. Result

The analysis included a total of 724115 women who were interviewed in NFHS 5. Total prevalence of any form of tobacco consumption observed was 4% (N= 29315) in women age 15 and above.

Table 1 Prevalence of different forms of tobacco consumption in women age 15 and above

Forms of Tobacco consumption	n(%)
Smokes cigarettes	748(2.53)
Smokes pipe full of tobacco	222(0.75)
Chews tobacco	2382(8.08)
Snuffs by nose	754(2.55)
Smokes cigars, cheroots or cigarillos	323(1.09)
Smokes water pipe/hookah	519(1.76)
Smokes/uses Gutkha / paan masala with tobacco	9942(33.75)
Smokes/uses Khaini	6406(21.74)
Smokes/uses Paan with tobacco	8161(27.70)

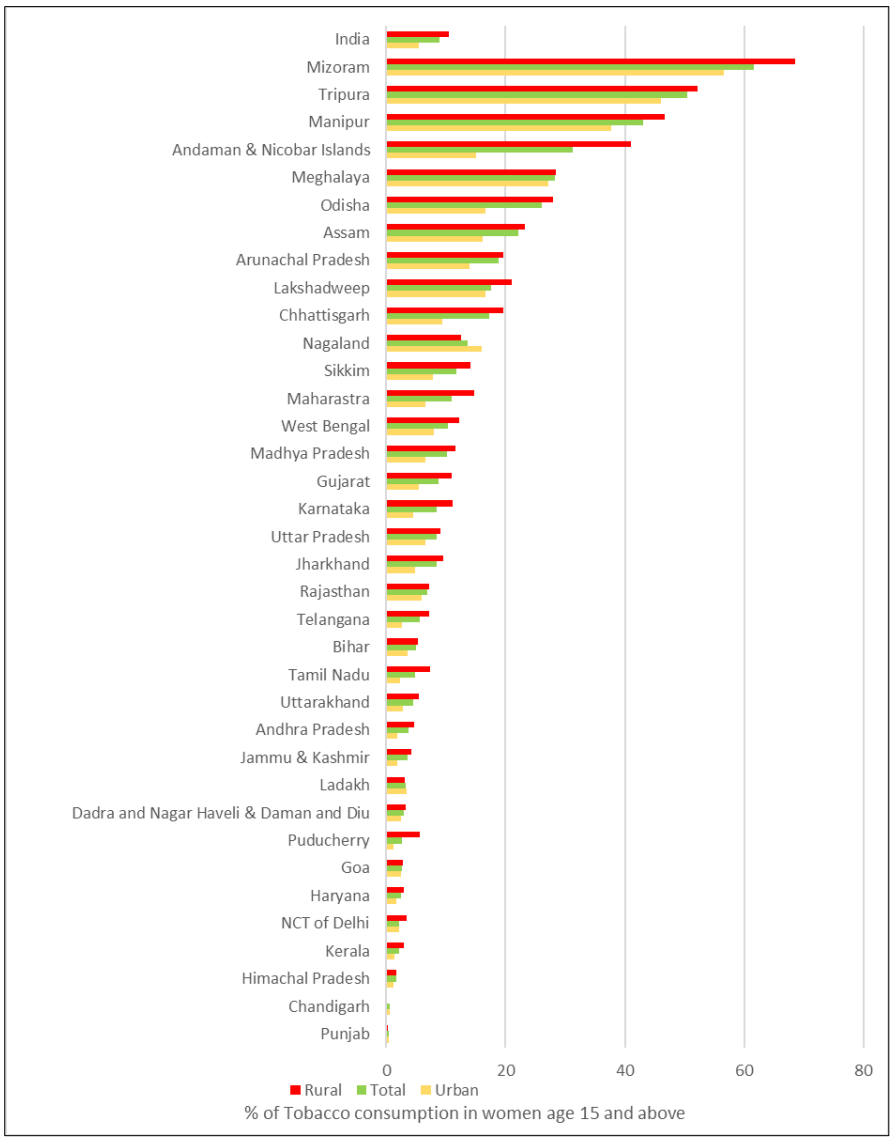

Figure 1 Women age 15 and above consuming tobacco in urban and rural areas

Table 1 shows that the most common tobacco use type is gutkha, or paan masala with tobacco, which is consumed by 33.75% of the population. Paan with tobacco (27.70%) and Khaini (21.74%) are the next most common forms of tobacco use. On the contrary, the less popular tobacco-using habits are smoking a water pipe or hookah (1.76%), smoking cigars, cheroots, or cigarillos (1.09%), and smoking a pipe (0.75%). Overall, the prevalence of smokeless tobacco products like gutkha, khaini, and paan with tobacco is significantly higher when compared to smoking-related tobacco use.

Figure 1 presents the prevalence of tobacco use among women in India aged 15 and above, categorized by their place of residence (rural, urban, and overall). The highest rates of tobacco consumption among women in this age group across all Indian states and union territories are seen in the northeastern states, particularly Mizoram (61.6%), followed by Tripura (50.4%), Manipur (43.1%), and the Andaman & Nicobar Islands (31.3%). Assam (22.1%), Meghalaya (28.2%), and Odisha (26%), among other states, have substantial usage. States with the lowest prevalence, however, include Chandigarh (0.6%), Punjab (0.4%), Kerala (2.2%), Goa (2.6%), and Puducherry (2.6%). In the country, 8.9% of women consume tobacco, with 10.5% of women in rural regions and 5.4% in urban, respectively. With a few outliers, like Nagaland, where urban consumption exceeds rural, most states show higher rural consumption. Significant regional and rural-urban discrepancies have been brought to light by this, highlighting the necessity of focused cessation efforts in high-consumption rural areas, particularly in the Northeast.

Table 2 offers a detailed examination of the prevalence and key variables impacting tobacco use among women aged 15 and above, along with corresponding Chi-square values. The findings indicate that tobacco consumption is more prevalent among women with no formal education (49.8%), while usage decreases with increasing levels of education (1.9%) and age. Religious associations vary, with Hindus having the highest prevalence (80.4%). Caste disparities exist, with Unreserved categories having the lowest incidence (14.6%) and Other Backward Classes having the highest (32.0%) tobacco usage rates. All variables like age, education, religion, caste, wealth index, occupation, currently pregnant, and currently breastfeeding show a significant association with tobacco use ($p \leq 0.05$).

Table 2 Prevalence and predictors influencing tobacco use among women aged 15 and above, categorized by various background characteristics, along with the results from association tests. (Sample size: N = 29,315)

Background characteristics	**Use cigarettes and tobacco**			**Univariate Logistic Regression**		**Multivariate Logistic Regression**	
	yes n(%)	**No n (%)**	**P value of Chi Square**	**Unadjusted OR(95%CI)**	**p**	**Adjusted OR(95%CI)**	**p**
Age in 5 year groups							
15-19	1035(3.5)	121509(17.5)	<0.001*	Ref		Ref	
20-24	2177(7.4)	117263(16.9)		0.459(0.426-0.494)	<0.001*	0.471(0.378-0.587)	<0.001*
25-29	3536(12.1)	113608(16.4)		0.274(0.255-0.293)	<0.001*	0.321(0.256-0.402)	<0.001*
30-34	4443(15.2)	95941(13.8)		0.184(0.172-0.197)	<0.001*	0.273(0.217-0.343	<0.001*
35-39	5642(19.2)	91911(13.2)		0.139(0.130-0.148)	<0.001*	0.219(0.175-0.276	<0.001*
40-44	5720(19.5)	76067(10.9)		0.113(0.106-0.121)	<0.001*	0.184(0.146-0.232	<0.001*
45-49	6763(23.1)	78501(11.3)		0.099(0.93-0.106)	<0.001*	0.166(0.132-0.210	<0.001*
Education							
No Education	14594(49.8)	147857(21.3)	<0.001*	0.049(0.045-0.054)	<0.001*	0.205(0.162-0.260)	<0.001*

Primary	6153(21)	78769(11.3)		0.062(0.057-0.068)	<0.001*	0.175(0.138-0.222)	<0.001*
Secondary	8018(27.4)	355378(51.1)		0.216(0.198-0.236)	<0.001*	0.356(0.283-0.447)	<0.001*
Higher	550(1.9)	112796(16.2)		Ref		Ref	
Religion							
Hindu	23581(80.4)	565583(81.4)	<0.001*	Ref		Ref	
Muslim	3886(13.3)	93709(13.5)		1.005(0.971-1.041)	0.761	0.859(0.770-0.959)	0.007
Christian	1212(4.1)	15783(2.3)		0.543(0.512-0.577)	<0.001*	0.636(0.538-0.753)	<0.001*
Caste							
Scheduled Caste	6979(25.4)	151504(22.9)	<0.001*	Ref		Ref	
Scheduled Tribe	7366(26.8)	59897(9.0)		0.375(0.362-0.388)	<0.001*	0.529(0.482-0.582)	<0.001*
Other Backward Class	8794(32.0)	301988(45.6)		1.582(1.532-1.633)	<0.001*	1.383(1.269-1.506)	<0.001*
Unreserved	4010(14.6)	143908(21.7)		1.653(1.589-1.720)	<0.001*	0.986(0.884-1.099)	0.794
Wealth index Combined							
Poorest	11828(40.3)	122145(17.6)	<0.001*	0.098(0.093-0.104)	<0.001*	0.257(0.219-0.302)	<0.001*
Poorer	7895(26.9)	136918(19.7)		0.165(0.156-0.175)	<0.001*	0.352(0.301-0.412)	<0.001*
Middle	5272(18.0)	143344(20.6)		0.259(0.244-0.275)	<0.001*	0.487(0.417-0.569)	<0.001*
Richer	2942(10)	147739(21.3)		0.479(0.449-0.510)	<0.001*	0.787(0.669-0.926)	0.004*
Richest	1378(4.7)	146032(20.2)		Ref		Ref	
Type of place of residence							
Urban	5883(20.1)	229396(33.0)	<0.001*	Ref		Ref	
Rural	23433(79.9)	465404(67.0)		0.509(0.495-0.524)	<0.001*	1.345(1.231-1.471)	<0.001*
Current Marital Status							
Never in union	1706(5.8))	170369(24.5)	<0.001*	Ref		Ref	
Married	24680(84.2)	496672(71.5)		10.562(9.550-11.681)	<0.001*	0.907(0.760-1.083)	0.282
Widowed	2208(7.5)	20389(2.9)		2.128(1.946-2.328)	<0.001*	0.737(0.594-0.914)	0.006
Occupation							
Not working	2304(49.2)	72817(70.5)	<0.001*	Ref		Ref	
Household and domestic/services	222(4.7)	3435(3.3)		0.489(0.424-0.563)	<0.001*	0.692(0.592-0.811)	<0.001*

Agricultural	1368(29.2)	13820(13.4)		0.320(0.298-0.343)	<0.001*	0.651(0.602-0.704)	<0.001*
Skilled and unskilled manual	508(10.9)	6258(6.1)		0.390(0.353-0.430)	<0.001*	0.603(0.540-0.673)	<0.001*
other	132(2.8)	1223(1.2)		0.293(0.243-0.352)	<0.001*	0.431(0.350-0.530)	<0.001*
Currently Breastfeeding							
No	25858(88.2)	593833(85.8)	<0.001*	0.786(0.759-0.815)	<0.001*	0.998(0.894-1.114)	0.973
Yes	3457(11.8)	100966(14.5)		Ref		Ref	
Currently Pregnant							
No/Don't Know	28604(97.6)	6683835(96.2)	<0.001*	0.629(0.583-0.678)	<0.001*	1.016(0.825-1.251)	0.883
Yes	711(2.4)	26414(3.8)		Ref		Ref	

All the factors included in univariate analysis are included in multivariate logistic regression. Women aged 45-49 years had 83% lower [aOR: 0.166(0.132-0.210)] level of tobacco consumption compared with 15-19 years. Concerning education, tobacco use was 82% less likely among women with only a primary education [aOR: 0.175 (0.138–0.222)] in contrast to those with higher education. Among religious groups, tobacco consumption was 36% lower among Christians compared to Hindu women [aOR: 0.636 (0.538–0.753)]. Women from the Other Backward Classes had a 38% higher likelihood of using tobacco relative to those from the Scheduled Castes [aOR: 1.383 (1.269–1.506)]. Use of Tobacco was 74% less frequent in the poorest wealth quintile [aOR: 0.257 (0.219–0.302)] compared to the richest group. Women based in rural areas were 34% more likely to consume tobacco than those in urban areas [aOR: 1.345 (1.231–1.471)]. Additionally, women in other occupations had a 57% lower likelihood of using tobacco when compared with those who were unemployed [aOR: 0.431 (0.350–0.530)].

Table 3 Percentage of women aged 15–49 who made an effort to quit tobacco, sought medical care in the past year and received advice to quit, and were subjected to second-hand smoke

States & UT	**Made an effort to quit tobacco in the past 12 months**		**Advised to quit any form of tobacco who visited healthcare provider during the last 12 months**		**SHS (second-hand smoke)**	
	%	**CI at 95%**	**%**	**CI at 95%**	**%**	**CI at 95%**
Jammu & Kashmir	17.4	13.2-22.6	57.8	45.0-69.6	59.3	57.5-61.1
Himachal Pradesh	28.8	13.2-51.9	10.3	1.7-42.7	51.1	48.9-53.3
Punjab	21.5	6.7-51.4	0.0	0.0-0.0	32.5	30.8-34.3
Uttarakhand	38.6	30.0-47.9	39.0	18.6-64.2	57.3	54.9-59.6
Haryana	41.4	32.3-51.1	67.0	48.2-81.6	59.3	57.6-61.0
NCT Of Delhi	40.8	32.9-49.2	44.4	22.7-68.6	56.6	54.1-59.0
Rajasthan	31.9	29.2-34.6	57.5	50.8-64.0	67.6	66.4-68.7
Uttar Pradesh	41.5	39.3-43.8	69.0	64.2-73.4	48.9	48.0-49.8
Bihar	37.1	31.8-42.7	57.0	43.1-69.9	38.9	37.6-40.3
Sikkim	20.2	14.0-28.1	21.3	9.5-41.0	39.1	33.4-45.1
Arunachal Pradesh	20.5	18.2-23.0	77.9	29.1-47.6	48.8	46.8-50.9
Nagaland	31.8	28.1-35.8	29.0	19.2-41.3	55.1	52.5-57.7

Manipur	33.5	30.9-36.1	38.1	33.0-43.4	75.2	73.0-77.2
Mizoram	39.5	36.5-42.6	56.5	51.2-61.6	95.0	94.0-95.8
Tripura	28.4	25.3-31.7	55.4	49.2-61.5	71.9	61.5-74.2
Meghalaya	36.1	32.4-40.0	59.6	55.2-64.0	62.7	60.2-65.2
Assam	20.0	17.7-22.4	64.9	60.2-69.4	43.4	41.8-44.9
West Bengal	26.9	24.1-29.9	69.1	60.6-76.6	54.2	52.3-56.1
Jharkhand	20.8	17.3-23.8	55.8	42.0-68.7	43.1	41.4-44.9
Odisha	25.5	23.6-27.5	33.4	29.1-38.0	39.4	37.7-40.4
Chhattisgarh	25.2	22.8-27.8	54.5	48.8-60.0	29.7	28.3-31.2
Madhya Pradesh	39.0	36.7-41.2	65.9	60.5-71.0	49.5	48.4-50.5
Gujarat	34.6	31.5-37.8	65.7	58.2-72.5	57.8	56.2-59.3
Dadra & Nagar Haveli And Daman & Diu	22.5	8.4-47.7	100	100-100	46.4	42.3-50.6
Maharashtra	34.4	30.9-38.0	78.3	69.5-85.0	36.5	35.0-38.1
Andhra Pradesh	26.7	19.6-35.2	72.0	50.7-86.5	46.6	44.4-48.7
Karnataka	32.3	28.8-36.1	79.6	74.2-84.1	44.1	42.3-45.8
Goa	15.8	4.6-42.2	49.7	13.8-86.0	35.8	32.5-39.2
Lakshadweep	24.7	12.6-42.7	44.0	6.7-89.6	19.3	15.5-23.8
Kerala	43.0	32.1-54.7	63.6	32.4-86.4	40.1	38.4-41.8
Tamil Nadu	32.5	26.9-38.7	64.0	47.1-78.0	51.0	49.4-52.5
Puducherry	83.3	50.8-96.0	100	100-100	52.4	45.5-59.1
Andaman & Nicobar Islands	36.3	29.6-43.6	43.2	35.5-51.3	41.0	36.0-46.2
Telangana	36.8	32.6-41.2	77.9	69.0-84.8	50.0	48.3-51.6
Ladakh	9.5	4.0-20.9	59.1	35.7-79.0	50.4	44.4-56.3

Table 3 highlights that women aged 15 to 49 who made an effort to quit tobacco use, who came into contact with second-hand smoke (SHS) and received advice from healthcare professionals to quit across various Indian states and union territories (UTs). Puducherry (83.3%) exhibited the highest reported rate of women who attempted to give up tobacco use, followed by Kerala (43%), Haryana (41.4%), and Uttar Pradesh (41.5%). When visiting healthcare practitioners, a considerable percentage of women were recommended to give up smoking, especially in Dadra & Nagar Haveli and Daman & Diu (100%), Puducherry (100%), and Karnataka (79.6%). The states with the highest rates of women's exposure to second-hand smoke were Rajasthan (67.6%), Tripura (71.9%), and Mizoram (95.0%).

Figure 2 illustrates the district-level prevalence of tobacco use among women aged 15 and older. The data reveal that most districts in the southern states, such as Kerala, Tamil Nadu, and Karnataka, report a lower prevalence, with rates below 10%. In contrast, tobacco consumption is significantly higher in the northeastern states, with many districts showing usage rates of 30% or more. The highest prevalence is observed in districts of Mizoram, Nagaland, and Tripura, where tobacco use exceeds 40%. Several districts in Mizoram recorded the highest tobacco consumption, with rates surpassing 40%.

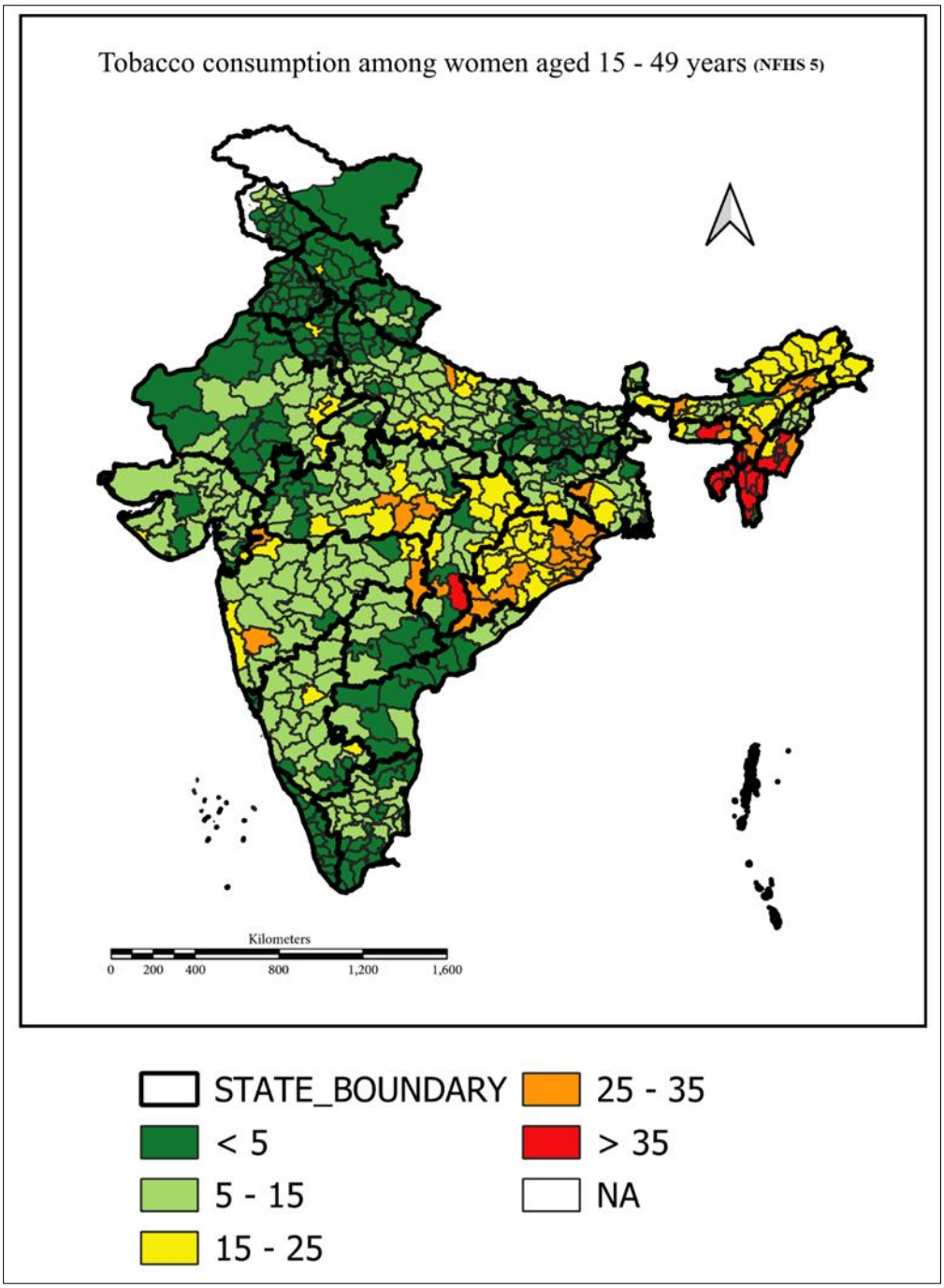

Figure 2 Tobacco consumption among women age 15 and above

4. Discussion

NFHS 5 data indicates the total prevalence of tobacco and cigarette consumption among women aged 15 and above is 4%, which is relatively very low when contrasted with men [12]. However, it is still a pressing public health dilemma, especially given the detrimental consequences of tobacco use for women's health. This study draws attention to the prevalence and type of tobacco consumption and the factors influencing the consumption pattern of tobacco by women which will guide policy reforms.

This study illustrated that the prevalence of consumption of tobacco and cigarettes was 4% (n= 29,315 among women aged 15 and above. This consumption in our study is significantly lower in women aged 45- 49 years, having at least a primary level of education, Christian, and were in the poorest wealth quintile. The study also revealed a higher association in women living in rural places and those belonging to other backward classes.

The significant determinants of tobacco consumption in women aged 15 and above are similar to determinants of other studies reporting consumption of tobacco in adolescents [13]. Our study uncovers that women aged 45-49 years have relatively lower tobacco consumption than younger population which can be ascribed to generational shift that younger women are more likely to initiate tobacco usage. This is in align with similar study[14] demarcating need for targeted intervention in forms of awareness through usage of social media and campaigns at schools.

Our study also depicts women with at least primary level of education shows lesser tobacco consumption rates which is probably attributed to the fact that more educated people has more income allowing them to afford smoking. These findings is in contrast with previous studies[15,16] indicating the protective effect of education in decreasing the level of tobacco consumption. Significant consumption was also observed among women belonging to other backward class and were residing in rural regions which can be attributed to lower access to healthcare and cessation resources and hence community-specific and sensitive health initiatives should be emphasized. Similar patterns were noted in other studies as well.[12,17]. Therefore, targeted interventions for socially marginalized population should be developed.

Contrary to the trends in other studies[16,18], women of poorest quintile and unemployed shows lesser tobacco consumption which may reflect greater affordability of tobacco products and access to smoking. Another study also suggests that women from wealthier backgrounds might face social pressure and therefore, professional cessation assistance should be recommended and government interventions should be provided for people facing problems in quitting. Lastly, our findings show consistently lesser consumption of tobacco among certain groups, including individuals who follows Christianity which may suggest religious norms, their lifestyle choices and various cultural factors which influences tobacco use, which aligns with other study [15]. suggesting socio religious factors shaping tobacco consumption in women.

Despite implementation of several initiates by government of India like National Tobacco control Programme (NTCP), COTPA, and programs like Global Youth Tobacco Survey (GYTS) focus on monitoring tobacco use among youth, our study found that wealth index, geographical divide and socio-cultural factors are still major factors influencing tobacco consumption. The findings show higher level of tobacco consumption in women belonging to other backward class residing in rural areas, who are younger in age, are unemployed and follow Hinduism. This highlights critical need for policy intervention to address these disparities and ensure cessation of the habit.

In India, while the establishment of Tobacco Cessation Centers (TCCs) in collaboration with NGOs that provide targeted gender-sensitive cessation services, there is no proper effective system in place for following up with patients after their first visit. Also It mainly focuses on smoking cessation, many women consume various forms of smokeless tobacco such as Gutka or paan which is also highlighted in our study there is a need for tailored approaches for the individuals seeking help for the tobacco habit and more focused efforts, including awareness campaigns and health promotion initiatives and interventions which will rule out tobacco consumption causing safety from its hazardous effects on oneself and people around them.

Strengths and limitation

This study is an attempt to determine the prevalence and contributing factors of Tobacco consumption in Indian women. Since the study employs the use of data from a national survey, results can be generalised regarding its prevalence. However, the study faces limitations, such as underreporting tobacco usage in Indian contexts, reliance on cross-sectional data. Also the study is focused for females as a result it doesn't provide picture of gender disparity.

5. Conclusion

This study identifies the major demographic predictors that affect the tobacco usage by Indian women. It finds that young aged women, women with less education, women living in rural areas, and members of socially disadvantaged communities like the OBC use tobacco more frequently. On the other hand, women who are older and have jobs typically smoke less. These results highlight the necessity of focused interventions with an emphasis on socially disadvantaged group assistance, outreach to remote areas, and education. Customized public health initiatives can aid in the reduction of tobacco use among women, improving health outcomes and lowering the prevalence of tobacco-related illnesses nationwide.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest declared.

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