



# The Cultural Tapestry of Tobacco Use in India: A Narrative Review

Saudamini More <sup>1</sup>, Sanpreet S. Sachdev <sup>2</sup>, Numa Bareen <sup>1</sup>, Laresh N. Mistry <sup>3</sup>, Amit Patil <sup>4</sup>, Tejal Patil <sup>5</sup>

1. Department of Public Health Dentistry, Bharati Vidyapeeth (Deemed to be University) Dental College and Hospital, Navi Mumbai, IND 2. Department of Oral Pathology and Microbiology, Bharati Vidyapeeth (Deemed to be University) Dental College and Hospital, Navi Mumbai, IND 3. Department of Pediatric and Preventive Dentistry, Bharati Vidyapeeth (Deemed to be University) Dental College and Hospital, Navi Mumbai, IND 4. Department of Conservative Dentistry and Endodontics, Bharati Vidyapeeth (Deemed to be University) Dental College and Hospital, Navi Mumbai, IND 5. Department of Oral and Maxillofacial Surgery, Bharati Vidyapeeth (Deemed to be University) Dental College and Hospital, Navi Mumbai, IND

Corresponding author: Sanpreet S. Sachdev, sanpreet.singh@bharatividyapeeth.edu

#### Received 05/19/2025 Review began 06/18/2025 Review ended 06/23/2025 Published 06/27/2025

© Copyright 2025

More et al. This is an open access article distributed under the terms of the Creative Commons Attribution License CC-BY 4.0., which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

DOI: 10.7759/cureus.86884

## **Abstract**

In India, both smoking and nonsmoking forms of tobacco are deeply ingrained in cultural and regional customs. Being the largest producer and consumer of tobacco, India witnesses a wide variety of cigarettes, bidis, hookah, chilam, ghutka, pan masala, khaini, and betel quid with tobacco. The consumption of these products is based on sociocultural notions with variations across education, gender, and geography. Historically, smoking is linked with masculinity and authority, especially in rural areas. At the same time, female tobacco use is prevalent in neighboring countries like Bangladesh despite being stigmatized in Indian society. There, women cite oral health benefits and enhanced concentration as justification for consumption.

The multifactorial behavior of tobacco consumption is influenced by social and cultural norms and practices. Hookah, cigars, and shisha often symbolize status in social gatherings. In the face of growing knowledge and awareness of its health hazards, strong association with oral precancerous lesions such as oral submucous fibrosis, erythroplakia, and leukoplakia, tobacco remains dangerously addictive and tough to quit. Significant geographic clustering was observed in different states and union territories of India, showing regional influences.

Public health initiatives in India should be culturally tailored and area-specific, owing to the strong tobacco habits and cultural underpinnings. Targeted policy modifications that are cognizant of local customs and habits may boost the impact and efficacy of tobacco control programs and substantially lower the nationwide tobacco-related health burdens.

Categories: Epidemiology/Public Health, Oral Medicine, Substance Use and Addiction

Keywords: india, tobacco

## **Introduction And Background**

Tobacco, a plant with deep roots in human history, has left a complex imprint on cultures around the world. In a vast country like India, we find that tobacco is consumed in varied smoking and nonsmoking forms. India is the largest producer and consumer of tobacco. Smoking tobacco includes hookah, cigarettes, bidis, charas, and so on, while on the other hand, nonsmoking tobacco products include pan, pan masala, gutkha, gul manjan, surti, supari, and khaini [1]. According to the Global Adult Tobacco Survey 2016-2017, approximately 28.6% of Indian adults consume tobacco in some form, with 42.4% of men and 14.2% of women being current users. Smokeless tobacco (SLT) use stands at 21.38%, while smoking tobacco use is at 10.38% [2].

In India, tobacco has been intricately associated with tradition, social behavior, economic practices, and religious customs. While modern health concerns now dominate conversations about tobacco, its cultural significance in India spans centuries and continues to influence attitudes and behaviors today.

Tobacco is not indigenous to India; it was introduced by the Portuguese in the 16th century. However, its assimilation into Indian culture was swift. Within decades, tobacco found its way into royal courts, local rituals, and rural communities [3]. Early historical records reveal that smoking and chewing tobacco were prevalent among the nobility and commoners alike. Hookah smoking, for instance, became fashionable among Mughal emperors and aristocrats, often symbolizing refinement and leisure. Over time, this aristocratic practice trickled down into various layers of society and adapted to local customs [4]. By the 18th century, India had developed diverse forms of tobacco use such as smoking (bidi, hookah, and cigarette), chewing (khaini and gutkha), and snuffing (naswar). Each method carried its own cultural and social significance [5].



Although tobacco does not occupy a sacred status in mainstream Hinduism or other major Indian religions, it has been used in various ritualistic contexts, some of which are formal while others are folk-based. In rural India, especially in tribal and agrarian communities, tobacco has occasionally been used in folk rituals. In some regions, offerings of tobacco are made to appease local deities or spirits. Among certain tribal groups, tobacco is believed to have protective properties and is used in charms or as a ward against evil. Tobacco smoke is sometimes used in cleansing rituals to remove negative energy from a household or space [6,7]. The integration of tobacco into the practices of these spiritual figures contributes to its cultural legitimacy and normalization, especially in rural areas.

The present narrative review aims to collectively examine the multifaceted cultural aspects of tobacco in India, exploring its historical context, ritualistic and religious uses, regional variations, social symbolism, gender dynamics, and the tensions between tradition and modernity.

#### Review

#### Methodology

A literature review was conducted using the keywords "Tobacco", "gutkha", "khaini", "cigarette", "bidi", "India", "North India", "West India", "South India", and "East India", in various combinations with Boolean operators "AND" and "OR". Searches were performed across multiple scholarly databases including PubMed, ScienceDirect, EBSCOHost, Web of Science, and Google Scholar to identify relevant peer-reviewed articles. Only studies published in the English language were considered, and no restrictions were placed on the year of publication. The search primarily focused on studies addressing the sociocultural, geographical, genderbased, and economic determinants of tobacco use in India. Cross-sectional studies, observational surveys, qualitative reports, and review articles examining regional habits and influencing factors were included. In contrast, articles limited to pharmacological effects, clinical trials, or biochemical mechanisms were excluded.

The initial pool of literature was screened for relevance, and the final selection was based on thematic significance and regional representativeness. Among the studies reviewed, 10 publications were identified as especially illustrative of regional and sociocultural diversity, and these were compiled in a tabular form to demonstrate the breadth of findings across India's geographical zones. The data were independently analyzed by the authors SM, SSS, and NB and were then thematically organized based on cultural relevance, regional usage patterns, gender-specific insights, and socioeconomic dimensions. A narrative synthesis was then performed, integrating these findings into structured sections corresponding to the country's major regions. India's vast diversity is reflected in the regional preferences (Figure 1) and practices associated with tobacco.



FIGURE 1: Preference of tobacco habits across different states of India

Image credit: This is an original image created by the author Numa Bareen

## Regional-cultural variations of tobacco forms

Northern India

Hookah smoking is especially popular in Haryana, Punjab, and parts of Uttar Pradesh. Often a communal activity, it is associated with hospitality and village gatherings. In rural settings, offering a puff from a hookah can be a sign of trust and friendship [8].

A study focusing on Northern India reported that among 1,607 tobacco users, 31.8% used chewing tobacco, 16.55% smoked, and a significant 52.15% engaged in both smoking and chewing. The most commonly used products included tobacco-betel, gutkha, cigarettes, bidis, and khaini [9]. The use of tobacco in North India is influenced by cultural practices and social norms. Products like gutkha and khaini are often integrated into daily routines, making cessation efforts challenging [10].

Eastern India

Khaini (a mixture of tobacco and slaked lime) is commonly used in Bihar, Jharkhand, and parts of Odisha. The practice is often gendered, with both men and women using khaini discreetly. Smoked tobacco includes bidis (hand-rolled cigarettes), cigarettes, and hookahs. SLT products, such as khaini (tobacco mixed with slaked lime), gutkha, and pan masala, are widely used [11]. A meta-analysis covering data from 2010 to 2022 revealed that the East zone of India has the highest prevalence of tobacco use at 55.4%, followed closely by the Northeast at 51.8%. SLT use is particularly prevalent among women in the Northeast, with a study noting a 23% usage rate among women in these states [12,13].

Western India

Gutkha and pan with tobacco are widely consumed in Maharashtra and Gujarat. These preparations are



deeply embedded in social customs, used in celebrations, weddings, and daily life [14]. Products like gutkha, khaini, and mawa are widely consumed. Mawa, a mixture of areca nut, tobacco, and lime, is especially popular in these western states [15].

South India

Tobacco consumption in South India exhibits notable regional and demographic variations, with patterns influenced by factors such as gender, socioeconomic status, and urban-rural residence [16]. In South India, the prevalence of any tobacco use was 20.0%, with smoking at 9.9% and SLT use at 4.8%. Tobacco use was more prevalent among men, individuals with lower education levels, and those from rural areas [17]. Tobacco is frequently chewed with betel leaf (pan) in states like Tamil Nadu, Andhra Pradesh, and Karnataka. Snuffing tobacco is also prevalent among older populations [6,10, 11].

A community-based study in rural Tamil Nadu focusing on women aged 18 and above found that 15.2% of participants consumed tobacco, exclusively in smokeless forms [18]. A significant majority (87.5%) expressed unwillingness to quit, citing tobacco as an integral part of their daily routine. A survey conducted in and around Chennai city reported an overall tobacco use prevalence of 21%, with higher rates in rural areas compared to semiurban and urban locales [19].

Region-Specific Plan of Action

Regional assessments of tobacco usage are based on prevalence data, gender disparities, product types, ritualistic uses, and socioeconomic affiliations. These dimensions serve as critical indicators to guide region-specific intervention strategies. To tackle these, it is essential to devise certain plans of action specific to those regions (Table 1).

Region	Key tobacco form	Cultural anchor	Suggested action plan	
North India	Hookah, gutkha	Hospitality, masculinity	Engage local panchayats, offer cessation in social centers	
East India	Khaini, bidi	Daily routine, gender-equal	Female-targeted education and discreet cessation tools	
South India	Pan with tobacco	Socioeconomic burden	Rural outreach + alternate livelihoods	
Northeast	High female SLT use	Social tradition	Gender-sensitive campaigns + tribal community involvement	

## **TABLE 1: Targeted actions for each region**

SLT: smokeless tobacco

## Various aspects of social symbolism

Tobacco use in India carries various symbolic meanings, depending on context and demographic group.

Authority and Hospitality

In many rural communities, smoking or chewing tobacco is associated with masculinity, strength, and authority. Elders and community leaders often use tobacco publicly as a display of status [20]. Boys see their grandfathers or fathers smoking, so they think it is part of being a man [4]. Smoking is seen as part of being a man and a sign of his male authority. Tobacco, especially in the form of hookah or pan, is a medium of hospitality. Offering tobacco to guests signifies warmth and social acceptance [21].

Caste and Class Dynamics

Historically, access to certain forms of tobacco was stratified. Hookah smoking was reserved for the upper castes and landowners [22]. Bidis and SLT were more common among lower castes and working classes [23]. These associations have eroded over time, but the residual perceptions still linger in certain areas.

Gender and Tobacco Use

Tobacco use among Indian women has long been stigmatized in urban areas, but this dynamic changes significantly in rural and tribal communities. In many rural parts of India, especially in the Northeast, women openly chew tobacco or use snuff, and it is not seen as taboo. For example, in Assam and Nagaland, tobacco is used communally by women during social gatherings. Among tribal women in Madhya Pradesh and Chhattisgarh, SLT is considered part of everyday life [10,24]. In contrast, urban women who smoke or



chew tobacco often face social judgment. However, this stigma is slowly changing with increased gender autonomy, changing norms, and media influence.

Sociocultural Aspects and Influence of Media

National and regional cinema have played a complex role in both glamorizing and problematizing tobacco use. For decades, cigarette smoking by male leads in Indian cinema symbolized rebellion, power, and seduction. Iconic stars, including various male superstars, have smoked on screen, normalizing the practice [25]. Table 2 comprehensively describes the studies conducted regarding the sociocultural aspects of tobacco habits in India.

Sr. no.	Year	Region of India	Form of tobacco	Cultural importance and habits	Conclusion
1	Farooqui et al. [1]	Urban and rural India	Cigarettes, bidis, and SLT	Social and cultural motivations; peer influence	High prevalence linked to sociocultural factors; awareness programs needed
2	Pahari et al. [11]	Nationwide	Cigarettes, bidis, and SLT	Regional disparities; cultural factors influence use	East and Northeast have highest prevalence; regional focus needed
3	Singh et al. [26]	Nationwide (30 states and two UTs)	Cigarettes, bidis, smokeless, and dual use	Local clustering; influenced by area-level factors	Tobacco use is highly clustered geographically; local policies needed
4	Murmu et al. [27]	Eastern India; tribal populations	SLT and smoking	Cultural norms among tribal groups; alcohol co-use	High SLT use among tribes; tailored interventions required
5	Verma et al. [28]	Northern and Northeastern India	Hookah, bidis, and SLT	Hookah as a social ritual; early initiation in rural areas	Cultural practices influence early initiation; need for targeted interventions
6	Bantwal et al. [29]	Northeast and Central India	Cigarettes, bidis, and SLT	Poly-tobacco use is prevalent among disadvantaged groups	High poly-tobacco use; focus on vulnerable populations needed
7	Aluckal et al. [30]	Kerala (Kuttampuzha tribal area)	Bidis and SLT	Deep-rooted in tribal culture; low awareness	Cultural norms hinder cessation; need fo culturally sensitive programs
8	Goyal et al. [31]	Nationwide	SLT and bidis	Cultural acceptance in certain regions; gender norms	SLT use is prevalent among women; gender-specific interventions required
9	Shah et al. [32]	Nationwide	Cigarettes, bidis, and SLT	Socioeconomic disparities; cultural practices	Tobacco use varies with socioeconomic status; targeted policies needed
10	Bhatt et al. [33]	Punjab	Cigarettes and SLT	Sikhism prohibits tobacco; underreporting due to stigma	Cultural beliefs affect reporting; culturally tailored interventions necessary

# TABLE 2: Studies highlighting the sociocultural aspect of tobacco habit in India

SLT: smokeless tobacco; UTs: union territories

In recent years, the narrative has shifted. Public health campaigns have pushed for tobacco disclaimers before films. Movies now portray the consequences of tobacco use, aligning with national health messages [34,35]. Still, the deep cultural embedding of tobacco makes its portrayal a sensitive issue in media regulation [36].

## Health, tradition, and modern tensions

India faces a paradox: while tobacco is culturally embedded, it is also a public health crisis. India has the second-largest population of tobacco users in the world and a high burden of tobacco-related illnesses [37,38]. In areas where tobacco is linked to identity, livelihood, and tradition, public health campaigns often face resistance. For example, banning gutkha in some states led to the rise of illicit markets rather than behavioral change. Campaigns are often perceived as urban, elite interventions lacking cultural sensitivity [39]. Recent health initiatives have started incorporating cultural insights by engaging local leaders and storytellers in rural tobacco control. Framing tobacco cessation is a way to protect family and community, rather than just individual health [40].



Tobacco is not just a substance of consumption; it is a livelihood for millions in India. Thus, it contributes to the economic and cultural independence of the country. India is a significant producer of tobacco, particularly in states such as Andhra Pradesh, Karnataka, and Gujarat. For many small farmers, tobacco is a cash crop [10,41]. Bidi rolling and gutkha production employ millions, particularly women, in informal settings. In such contexts, tobacco is deeply tied to survival and family economics, complicating public health efforts [42].

## **Translational implications**

The insights presented in this narrative review underscore the necessity for culturally grounded approaches to tobacco control in India. Given the profound regional, gendered, and sociocultural embedding of tobacco use, a one-size-fits-all strategy is unlikely to be effective. Translating these findings into public health action requires tailoring interventions that resonate with local identities, customs, and lived experiences.

Public health campaigns must move beyond generic messaging to incorporate cultural symbolism, oral traditions, and community hierarchies, such as engaging village elders, local panchayats, and tribal leaders as champions of antitobacco advocacy. Integration of tobacco cessation into existing rural healthcare systems, including training Accredited Social Health Activists and Anganwadi workers in culturally sensitive counseling, is essential.

In urban and semiurban areas, the use of digital platforms and regionally produced media content can reshape norms around tobacco consumption. Furthermore, education programs in schools should include context-specific modules on the social and health impacts of tobacco, particularly in regions where early initiation is prevalent.

Economic alternatives and rehabilitation programs must be developed for communities reliant on bidi rolling or gutkha production, especially for women in informal labor sectors. Finally, policy initiatives should embed cultural diagnostics such as the prevalence of communal tobacco practices or caste-linked consumption patterns into the design of regulations, taxation, and surveillance systems. Only by embedding these culturally nuanced findings into tangible policy frameworks and community programs can India hope to mitigate the complex burden of tobacco use across its diverse populations.

## Implementation strategies

To effectively address the culturally entrenched nature of tobacco use in India, multitiered and locally responsive implementation strategies are essential. First, region-specific interventions should be designed using local epidemiological data and cultural practices.

For example, traditional community gatherings can be incorporated in North India (where hookah is socially symbolic) into cessation outreach programs led by respected village elders. In tribal belts of Eastern and Central India, where SLT use is normalized among both genders, community health workers should be trained to integrate tobacco cessation advice into maternal and child health visits and immunization drives. In South India, where women engaged in bidi rolling form a vulnerable labor force, state-supported livelihood substitution schemes and microfinancing options can gradually shift economic dependence away from tobacco-based cottage industries.

School-based educational curricula, especially in rural and semiurban zones, should be redesigned to reflect local tobacco forms and include culturally relatable content, possibly in local dialects or folk formats. Mobile health (mHealth) platforms and social media can also be leveraged to promote behavioral change among youth, especially in urban slums where traditional norms are intersecting with modern media influences [43].

Furthermore, state and district-level tobacco control programs should allocate funding for culturally sensitive Information, Education, Communication materials, featuring regionally popular idioms, visuals, and testimonials. Monitoring and evaluation frameworks must incorporate qualitative assessments of community perceptions, adoption barriers, and changes in social acceptability, thereby ensuring that interventions remain adaptive and contextually relevant over time.

## Conclusions

The tobacco habit in India is embedded socioculturally. It carries centuries of tradition, symbolism, and social meaning. From rituals and caste identity to gender dynamics and economic sustenance, tobacco is woven into the Indian cultural landscape in intricate ways. Efforts to reduce tobacco use in India must therefore go beyond regulatory frameworks. Policy interventions should be directed to influence specific local sociocultural factors on adult tobacco use so as to be effective in India. Tobacco habits in India are specific to the region and form a large part of the tradition. Tailoring tobacco control policies for local areas in India may, therefore, provide substantial public health benefits. Balancing public health with cultural sensitivity remains a critical challenge and an opportunity for India as it moves toward a tobacco-free future.





#### **Additional Information**

#### **Author Contributions**

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

Concept and design: Sanpreet S. Sachdev, Laresh N. Mistry, Amit Patil, Tejal Patil, Saudamini More, Numa Bareen

**Acquisition, analysis, or interpretation of data:** Sanpreet S. Sachdev, Laresh N. Mistry, Amit Patil, Tejal Patil, Saudamini More, Numa Bareen

Drafting of the manuscript: Sanpreet S. Sachdev, Laresh N. Mistry, Saudamini More, Numa Bareen

**Critical review of the manuscript for important intellectual content:** Sanpreet S. Sachdev, Amit Patil, Tejal Patil, Saudamini More

Supervision: Sanpreet S. Sachdev, Laresh N. Mistry, Amit Patil, Saudamini More

#### **Disclosures**

Conflicts of interest: In compliance with the ICMJE uniform disclosure form, all authors declare the following: Payment/services info: All authors have declared that no financial support was received from any organization for the submitted work. Financial relationships: All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. Other relationships: All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

## **Acknowledgements**

The authors acknowledge the use of AI-based Large Language Model ChatGPT for refining the language during the drafting of the manuscript.

## References

- Farooqui S, Mohammad S, Mehrotra D, Mahdi AA, Bhattacharya S, Agarwal GG, Srivastava S: Study on prevalence and sociocultural aspects of tobacco use in India. Natl J Maxillofac Surg. 2019, 10:182-90. 10.4103/nims.NIMS 82 18
- Rai B, Bramhankar M: Tobacco use among Indian states: key findings from the latest demographic health survey 2019-2020. Tob Prev Cessat. 2021, 7:19. 10.18332/tpc/132466
- Stewart GG: A history of the medicinal use of tobacco 1492-1860. Med Hist. 1967, 11:228-68. 10.1017/s0025727300012333
- Mishra S, Mishra MB: Tobacco: its historical, cultural, oral, and periodontal health association. J Int Soc Prev Community Dent. 2013, 3:12-8. 10.4103/2231-0762.115708
- Sinha SK, Pal R, Ghosh A, Rana RK: Background history about tobacco. Tobacco and Public Health: Tobacco and Community Well-Being---A Worldwide Health Crisis. Shashwat Publication, Chhatisgarh; 2024.
- Bhonsle RB, Murti PR, Gupta PC: Tobacco habits in India. Control of Tobacco-Related Cancers and Other Diseases. Gupta PC, Hamner JE III, Murti PR (ed): Oxford University Press, Mumbai; 1992. 25-46.
- 7. Gupta SM: Plant Myths and Traditions in India. Sivaramamurti M (ed): Brill Publishers, India; 2024.
- Menon S, Singh S, Rathore BS: Socio-cultural determinants of tobacco consumption: a study of migrant and local workers in a district of Punjab, India. J Ethn Subst Abuse. 2024, 23:806-22. 10.1080/15332640.2022.2134954
- 9. Kumar S, Dwivedi V, Pandey U, Bala N, Vasandani S, Singh K, Chaudhry K: Tobacco use in Northern Indiapart 1: the detailed habit. I Oral Biol Craniofac Res. 2011. 1:24-30. 10.1016/S2212-4268(11)60007-9
- Sreedevi A, Majumdar A, Olando Y, et al.: Experiences and beliefs on tobacco use, cessation in India: a qualitative study. Glob Heart. 2023, 18:51. 10.5334/gh.1267
- Pahari S, Barman D, Talukdar R: Tobacco usage in India: a meta-analysis of evidence drawn from regional studies between 2010 and 2022. Trop Med Int Health. 2023, 28:699-709. 10.1111/tmi.13924
- Haobijam N, Nair S, Devi AS, et al.: Smokeless tobacco use among women in northeastern states, India: a study of spatial clustering and its determinants using National Family Health Survey-4 data. Clin Epidemiol Glob Health. 2021. 12:100840. 10.1016/j.cerh.2021.100840
- Giri S, Barhoi D, Nath Barbhuiya S, et al.: Consumption pattern and genotoxic potential of various smokeless tobacco products in Assam, India: a public health concern. Mutat Res Genet Toxicol Environ Mutagen. 2021, 866:503349. 10.1016/j.mrgentox.2021.503349
- Kumar S, Gawde N, Pednekar MS: Social determinants and the prevalence of paan masala use among adults in India: results from Global Adult Tobacco Survey, 2016-17. Asian Pac J Cancer Prev. 2023, 24:3773-81. 10.31557/APJCP.2023.24.11.3773
- Kulothungan V, Ramamoorthy T, Sarveswaran G, Jadhav SY, Mathur P: Association of tobacco use and cancer incidence in India: a systematic review and meta-analysis. JCO Glob Oncol. 2024, 10:e2400152.
   10.1200/GO 24.00152
- 16. Padhiary S, Samal D, Khandayataray P, Murthy MK: A systematic review report on tobacco products and its





- health issues in India. Rev Environ Health. 2021, 36:367-89. 10.1515/reveh-2020-0037
- Bhat K, Bhat S, Jagadish, Kahndige SN, Kumar P: Chewing farm fresh betel quid: a healthy practice in major arecanut (Areca catechu L.) growing region of South India. IOSR J Pharm Biol Sci. 2020, 15:10-21.
- Shrivastava SR, Shrivastava PS: Estimation of the prevalence of tobacco consumption among rural women in South India using mixed methods analysis. Indian J Community Med. 2020, 45:225-9.
   10.4103/ijcm.IJCM\_216\_19
- Chockalingam K, Vedhachalam C, Rangasamy S, Sekar G, Adinarayanan S, Swaminathan S, Menon PA: Prevalence of tobacco use in urban, semi urban and rural areas in and around Chennai City, India . PLoS One. 2013, 8:e76005. 10.1371/journal.pone.0076005
- Bottorff JL, Haines-Saah R, Kelly MT, et al.: Gender, smoking and tobacco reduction and cessation: a scoping review. Int J Equity Health. 2014, 13:114. 10.1186/s12939-014-0114-2
- Helme DW, Morris E, de la Serna A, Zelaya C, Oser C, Knudsen HK: "Country boys spit and dip": masculinity and rural adolescent smokeless tobacco use. J Mens Stud. 2021, 29:213-34. 10.1177/1060826520946458
- Baum F, Musolino C, Gesesew HA, Popay J: New perspective on why women live longer than men: an exploration of power, gender, social determinants, and capitals. Int J Environ Res Public Health. 2021, 18:661. 10.3390/ijerph18020661
- Menon S, Bisht R, Nair B: Contextualising tobacco use in the social, economic and political transformation of Punjab. J Ethn Subst Abuse. 2022, 21:793-822. 10.1080/15332640.2020.1808871
- Kumari N, Manisha M, Paul S, Ram R: Socioeconomic inequality among smoking and smokeless tobacco uses among males in India: a decomposition analysis. Public Health. 2024, 227:176-86. 10.1016/j.puhe.2023.12.006
- Mishra VK, Srivastava S, Muhammad T, Murthy PV: Population attributable risk for multimorbidity among adult women in India: do smoking tobacco, chewing tobacco and consuming alcohol make a difference?. PLoS One. 2021, 16:e0259578. 10.1371/journal.pone.0259578
- Singh A, Arora M, Bentley R, Spittal MJ, Do LG, Grills N, English DR: Geographic variation in tobacco use in India: a population-based multilevel cross-sectional study. BMJ Open. 2020, 10:e033178. 10.1136/bmjopen-2019-033178
- Murmu J, Agrawal R, Manna S, et al.: Social determinants of tobacco use among tribal communities in India: evidence from the first wave of Longitudinal Ageing Study in India. PLoS One. 2023, 18:e0282487. 10.1371/journal.pone.0282487
- Verma M, Rana K, Bhatt G, Sharma N, Lal P: Trends and determinants of tobacco use initiation in India: analysis of two rounds of the Global Adult Tobacco Survey. BMJ Open. 2023, 13:e074389. 10.1136/bmjopen-2023-074389
- Bantwal P, Kulkarni MM, Kamath VG, Naik AK, Fogarty AW, Dhar M, Ahankari AS: Prevalence, regional
  patterns and socio-demographic factors associated with poly-tobacco use in India: a secondary data
  analysis. PLOS Glob Public Health. 2024, 4:e0002999. 10.1371/journal.pgph.0002999
- Aluckal E, Pulayath C, Chithra P, Balakrishna MS, Luke AM, Mathew S: Tobacco cessation behavior among smoking and smokeless form tobacco users in the indigenous population of Ernakulam, India. J Pharm Bioallied Sci. 2020, 12:S194-8. 10.4103/jpbs.JPBS\_58\_20
- Goyal LD, Verma M, Garg P, Bhatt G: Variations in the patterns of tobacco usage among Indian females findings from the global adult tobacco survey India. BMC Womens Health. 2022, 22:442. 10.1186/s12905022-02014-3
- Shah S, Dave B, Shah R, Mehta TR, Dave R: Socioeconomic and cultural impact of tobacco in India . J Family Med Prim Care. 2018, 7:1173-6. 10.4103/jfmpc.jfmpc 36 18
- Bhatt G, Goel S, Gupta R, Grover S, Medhi B: Evaluating the impact of culturally specific patient-centric behavioral intervention package versus usual care for tobacco cessation among patients attending noncommunicable disease clinics in North India: a single-blind trial pilot study protocol. Tob Use Insights. 2021, 14:1179173X211056622. 10.1179173X211056622
- Klein JD, Resnick EA: A brief history of tobacco and implications for new tobacco products. Electronic Cigarettes and Vape Devices: A Comprehensive Guide for Clinicians and Health Professionals. Walley SC, Wilson K (ed): Springer, Cham; 2021. 10.1007/978-3-030-78672-4\_1
- 35. Yadav A, Glantz SA: Tobacco imagery in entertainment media: evolution of tobacco-free movies and television programmes rules in India. BMJ Glob Health. 2021, 6:e003639. 10.1136/bmjgh-2020-003639
- Kulkarni MM, Kamath VG, Kamath A, et al.: Exposure to tobacco imagery in popular films and the risk of ever smoking among children in southern India. Tob Control. 2021, 30:560-6. 10.1136/tobaccocontrol-2019-055353
- Sakthisankaran SM, Sakthipriya D, Swamivelmanickam M: Health risks associated with tobacco consumption in humans: an overview. J Drug Deliv Ther. 2024, 14:6523. 10.22270/jddt.v14i5.6523
- John RM, Sinha P, Munish VG, Tullu FT: Economic costs of diseases and deaths attributable to tobacco use in India, 2017-2018. Nicotine Tob Res. 2021, 23:294-301. 10.1093/ntr/ntaa154
- Nandru S, Kodali PB, Thankappan KR: Perceived effectiveness of anti-tobacco advertisements used in Indian cinema: results of a cross-sectional study from South-India. J Subst Use. 2023, 28:273-9. 10.1080/14659891.2022.2043471
- Hahn EJ, Bucher A, Rademacher K, Beckett W, Taylor L, Darville A, Ickes MJ: Tobacco use disparities in rural communities. J Rural Health. 2024, 40:738-44. 10.1111/jrh.12838
- Kulkarni AR, Nayak NS, Hanagodimath SV, Shah V, Khajuria R: Value chain analysis for tobacco in Karnataka. Indian J Agric Econ. 2023, 78:643-57. 10.22004/ag.econ.345290
- 42. Mallick J, Satpathy S: Estimation of women beedi workers in India and their socio-economic condition . Indian J Labour Econ. 2021, 64:499-521. 10.1007/s41027-021-00320-2
- Iribarren SJ, Cato K, Falzon L, Stone PW: What is the economic evidence for mHealth? A systematic review of economic evaluations of mHealth solutions. PLoS One. 2017, 12:e0170581. 10.1371/journal.pone.0170581