REVIEW ARTICLE

Smokeless Tobacco Products in India

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Abstract

The term smokeless tobacco refers to tobacco that is ingested without being heated or burned at the moment of consumption. Tobacco that does not produce smoke can be consumed orally or nasally. A small amount of extremely fine tobacco powder combined with fragrant compounds, known as dry snuff, is breathed for nasal usage. Although it is still practiced, this type of smokeless tobacco usage is not extremely widespread in India. In India, the oral use of smokeless tobacco is common; varied ways of consumption include chewing, sucking, and putting tobacco preparations on the teeth and gums. Tobacco substitutes are frequently prepared at home, although they are also manufactured. A number of smokeless tobacco products have recently been created on a big scale industrially, commercially advertised, and are accessible in tiny plastic and aluminum foil packets.

Keywords: Addiction, Paan, Tobacco.

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Introduction

Approximately 100 million premature deaths were linked to tobacco in the 20th century. If the current trajectory of tobacco use persists into the 21st century, projections indicate a staggering toll of one billion deaths.[1] The World Health Organization (WHO), offering these estimations, anticipates India to witness the swiftest surge in tobacco-related deaths in the initial two decades of this century.[2] Tragically, a substantial number of these fatalities will occur during the prime years of adulthood due to addictions formed during adolescence. This underscores the profound impact of tobacco use on both current and future generations, particularly in India.

History of Tobacco in India

The introduction of tobacco among Indian royalty led to its rapid adoption by the wider population, firmly establishing its presence in 17th-century India. The era of British colonial rule further solidified this by initiating and regulating the tobacco trade.[3] Post the American colonies' declaration of independence in 1776, the British East India Company began cultivating tobacco in India as a profitable crop. Throughout the colonial period, concerted efforts were made to expand tobacco cultivation and enhance leaf quality. Tobacco emerged as a crucial cash crop for the British East India Company and later for the British Government, serving both domestic consumption and overseas trade. This cultivation and trade history highlight the integral role tobacco played in the economic landscape of colonial India.

Historical Records and Anecdotes: From the Middle Ages to Modern Times

The term "tobacco," believed to have origins in the Arabic language, is said to have potential ties to the word "tabaq" which means "euphoria-producing plant." The term tobacco is attributed to the Carib culture and has been linked to their word "tabaco," which referred to the pipe used for smoking this substance.[1] The term tobacco may have originated in the Caribbean Island of Tobago. According to some historians, this name originated in the Mexican state of Tabasco. The word "cigarre" is believed to have its roots in the Mayan language, specifically from the term "sikar", denoting "to smoke." Another idea holds that the term "tobacco" is thought to stem from the Spanish word "tobaca," which was associated with a Y-shaped tool utilized by early Native Americans to consume snuff.[4]

Origin of Tobacco in India

By the seventh century, aromatic herb inhalation and smoking practices were evident in India. Consequently, when tobacco emerged as a smoking product, it was initially considered a medicinal herb, carrying therapeutic connotations. However, Ayurveda, the traditional Indian system of medicine, did not sanction its use. However, many people in rural India believe that smokeless tobacco is good for their teeth and acts as a pain reliever. Recent revelations uncovered the usage of tobacco products as a dentifrice among Indian teenagers, highlighting the continued prevalence of this misconception to date. Initially, tobacco was solely smoked; however, many techniques of smoking and chewing tobacco were developed over time.[3,5] This current review aims to evaluate the occurrence and trends associated with the usage of smokeless tobacco products among different demographic groups and to contribute to the existing body of knowledge on smokeless tobacco use in India.

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Different Smokeless Tobacco Products in India

Paan, often referred to as betel quid, involves a blend of piper betel (betel leaf), areca nut (*Areca catechu*), slaked lime [$Ca(OH_2)$], and catechu (*Acacia catechu*). These constituents, alongside betel leaves containing oils such as eugenol and terpenes, nitrates, and traces of sugars, starch, tannins, and other compounds, are key components. Depending on regional customs and personal tastes, additional spices and sweeteners may be incorporated. Over time, tobacco was integrated as a significant element within paan, becoming a common addition for regular consumers. Variations in names such as kaddipudi and hogesoppu in Karnataka, kadapan in Orissa and West Bengal, and pattiwala in Uttar Pradesh mark regional distinctions in tobacco inclusion within paan.[6–8]

Commercially manufactured versions such as Zarda and Kiwam find common use as ingredients in paan. Paan masala, another commercially prepared blend, incorporates areca nut, slaked lime, catechu, assorted seasonings, and powdered tobacco. While it includes nearly all the elements found in traditional paan, it undergoes a drying process, ensuring a non-perishable final product. Presented in convenient sachets and tins, paan masala has gained immense popularity in urban centers and is swiftly gaining traction in rural areas.[3,9,10]

This preparation is particularly famous in the Uttar Pradesh district of Mainpuri and surrounding regions. This blend primarily comprises tobacco, slaked lime, finely chopped areca nut, camphor, and cloves. In a survey encompassing 35,000 individuals in Mainpuri, approximately 7% of the villagers reported using this specific product.[3]

Mawa comprises thin shavings of areca nut, as well as tobacco and slaked lime. In Gujarat, there's a notable rise in its usage, especially among the younger demographic. Mawa's popularity extends beyond Gujarat and has gained traction in various regions across the country. The act of chewing mawa has significantly surged in recent years.[11] The prevalence of mawa usage is evident from the actions taken by the Bhavnagar municipal government, which urged residents to refrain from littering streets with discarded mawa cellophane wrappers. This measure was necessitated due to the wrappers causing blockages in the city drains.[3]

Tobacco and slaked lime – a blend of sun-dried tobacco and slaked lime, called khaini in some parts, is widely used in Maharashtra and many northern Indian states. A frequent user of khaini often carries a dual-ended metal container, one side holding tobacco while the other holds slightly damp slaked lime. To consume, a small amount of tobacco is placed in the palm, followed by a portion of slaked lime, vigorously mixed with the thumb, and then inserted into the mouth. In Bihar and Uttar Pradesh, khaini is commonly stored in the lower labial groove, while in Maharashtra and Gujarat, it is placed in the premolar area of the mandibular groove.[12]

This substance is frequently retained on the dorsum of the tongue in the Bihar area of Singhbhum. In a survey conducted among over 100,000 individuals from Pune, Maharashtra, India approximately 28% reported using tobacco-slaked lime mixtures. This practice was notably more widespread among males, accounting for 52%, compared to 48% among females.[13,14]

The Swedish snuff, commonly known as snus, is marketed in India by the Swedish Match Company under the brand name Click. Sold in pouches resembling teabags, these pouches can be placed in the buccal or labial groove and then sucked for consumption.[3]

Several smokeless tobacco varieties, such as mishri, gudhaku, bajjar, and creamy snuff, are primarily intended for dental hygiene. However, their use often leads to addiction. In India, there is a prevailing belief in the dental benefits of tobacco, leading many businesses to market these products as oral care items without clear disclosure. Mishri, for instance, is a roasted, powdered tobacco preparation, initially applied multiple times a day by women for dental cleaning. This practice is widespread in Maharashtra and, according to a rural study involving 100,000 participants, 22% used mishri, with a notably higher frequency of 39% among women and 0.8% among males. Mishri use is also prevalent in Goa.[15,16]

Gul, a tobacco product subjected to pyrolysis, is retailed in small tin cans across various brand names and is employed as a dentifrice in Eastern India. According to the Global Youth Tobacco Survey (GYTS), usage of gold was reported at 6% in Bihar, 3% in Arunachal Pradesh and Nagaland, and 2% in Assam, Uttar Pradesh, and Uttaranchal.[3,16,17]

Gudhaku, a mixture of tobacco and molasses forming a paste, is available commercially, often packaged in metal containers, although individuals can also prepare it themselves. This product enjoys popularity in the states of Bihar, Orissa, Uttar Pradesh, and Uttaranchal in India with women predominantly using it on their teeth and gums.[11,14] Cool lip is one of the most commonly used forms of smokeless tobacco in South India in recent times. It is available as prepacked small pillows which were placed between teeth and gums.

Areca nut looks to be somewhat addictive on its own, but when combined with tobacco, the impact grows exponentially. Reportedly, it ranks as the fourth most commonly consumed psychoactive substance globally, following caffeine, tobacco, and alcohol. Chewing areca nut products are widespread in India, prompting a brief description of these items as detailed in the following.[18]

The addition of lime and tobacco to the nut has shown a heightened occurrence of mucosal alterations. Known as supari in northern Indian regions, some commercial supari formulations involve the fragmentation of dried areca nuts, followed by toasting in fat alongside flavorings, sweeteners, and sauces. Packaged attractively in aluminum foil packs, tins, and simple paper packages, supari is commonly offered to guests as a customary and widely accepted social gesture, especially after meals.[3]

The limitations of the study include a lack of systematic approach, subjectivity, limited reproducibility, potential for publication bias, limited statistical analysis, lack of update frequency, and potential for overgeneralization. Further research, including longitudinal studies and more rigorous systematic reviews, is warranted to enhance our understanding of this complex issue.

Conclusion

To conclude, this study illuminates the diverse array of smokeless tobacco products prevalent and utilized in India. The findings underscore the extensive consumption of smokeless tobacco variants like gutka, khaini, zarda, pan masala, and mawa in various formats across diverse demographic segments.

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References

1. Institute of Health Metrics (IHME). Global burden of disease (GBD). 2019. Washington, DC: Institute of Health Metrics; 2019. Available at: https://www.healthdata.org/gbd/2019. Accessed on: 25 November 2022.
2. World Health Organization. Tobacco. 2023. Available at: https://www.who.int/news-room/fact-sheets/detail/tobacco. Accessed on: 25 November 2022.
3. Reddy KS, Gupta PC. Tobacco control in India. 2004. New Delhi: Ministry of Health and Family Welfare, Government of India. Available on: https://extranet.who.int/fctcapps/sites/default/files/2023-04/India_Annex-3_Report-on-Tobacco-Control-in-India_2004.pdf. Accessed on: 25 November 2023.
4. Sudipta Sen. The global cigarette: Origins and evolution of British American Tobacco, 1880-1945. [Review of Cox, H. The global cigarette: origins and evolution of British American Tobacco, 1880-1945. New York: Oxford University Press on Demand, 2000]. Am Hist Rev 2002;107(1):164–165. DOI: 10.1086/532112.
5. Gilman SL, Zhou X, editors. Smoke: A Global History of Smoking. London: Reaktion Books; 2004.
6. Mehrtash H, Duncan K, Parascandola M, David A, Gritz ER, Gupta PC, et al. Defining a global research and policy agenda for betel quid and areca nut. Lancet Oncol 2017;18(12):767–775. DOI: 10.1016/S1470-2045(17)30460-6.
7. Maćkowiak AM. Betel: Its prevalence, characteristics, and culture, based on examples from Indonesia, Taiwan, and India. In: Anczyk E, Maćkowiak AM, editors. Psychoactive Substances, Drugs and Alternative States of Consciousness: Cultural Perspectives, Katowice: Wydawictwo Sacrum; 2016, pp. 18–30.
8. Gupta PC, Ray CS. Smokeless tobacco and health in India and South Asia. Respirology 2003;8(4):419–431. DOI: 10.1046/j.1440-1843.2003.00507.x.
9. Gupta PC, Warnakulasuriya S. Global Epidemiology of areca nut usage. Addict Biol 2002;7(1):77–83. DOI: 10.1080/13556210020091437.
10. IARC Working Group on the Evaluation of Carcinogenic Risks to Humans. Betel-quid and areca-nut chewing and some areca-nut-derived nitrosamines. IARC Monogr Eval Carcinog Risks Hum 2004:85:1–334.
11. Bhonsle RB, Murti PR, Gupta PC. Tobacco habits in India. Control of tobacco-related cancers and other diseases. In: Gupta PC, Hamner JE III, editors, Control of tobacco related cancers and other diseases. International Symposium, 1990. Bombay: Oxford University Press; 1992, pp. 25–46.
12. Pednekar MS. The Impact of Tobacco Use and/or Body Composition on Adult Mortality in Urban Developing Country Population. Results from the Mumbai Cohort Study, Mumbai, India, 1991–2003. University of Tampere Dissertation, 2008.
13. Mehta FS, Gupta PC, Daftary DK, Pindborg JJ, Choksi SK. An epidemiologic study of oral cancer and precancerous conditions among 101,761 villagers in Maharashtra, India. Int J Cancer 1972;10(1):134–141. DOI: 10.1002/ijc.2910100118.
14. Pindborg JJ, Kier J, Gupta PC, Chawla TN. Studies in oral leukoplakias. Prevalence of leukoplakia among 10,000 persons in Lucknow, India, with special reference to tobacco and betel nut. Bull World Health Organ 1967;37(1):109–116. PMID: 5300044.
15. Sinha DN, Gupta PC, Pednekar M. Use of tobacco products as dentifrice among adolescents in India: Questionnaire study. BMJ 2004;328(7435):323–324. DOI: 10.1136/bmj.328.7435.323.
16. 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(2):76. PMID: 17191409.
17. Sinha DN, Gupta PC, Pednekar M. Tobacco use among students in eight north-eastern states in India. Indian J Cancer 2003;40(2):43–59. PMID: 14716119.
18. IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, International Agency for Research on Cancer, World Health Organization. Smokeless tobacco and some tobacco-specific N-nitrosamines. World Health Organization; 2007. Available at: https://monographs.iarc.who.int/wp-content/uploads/2018/06/mono89.pdf. Accessed on: 25 November 2023.