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ISSN No: 2319-5886

International Journal of Medical Research & Health Sciences, 2022, 11(7): 45-51

Consumption of Smokeless Tobacco in Adult Population in an Urban Slum of Jorhat town, Assam

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Received: 10-June-2022, Manuscript No. ijmrhs-22-66321; **Editor assigned:** 15-June-2022, PreQC No. ijmrhs-22-66321(PQ); **Reviewed:** 19-June-2022, QC No. ijmrhs-22-66321(Q); **Revised:** 27-June-2022, Manuscript No. ijmrhs-22-66321(R); **Published:** 30-Jul-2022, J-invoice: J-66321

ABSTRACT

Background: *Smokeless tobacco consumption is associated with various health risks like precancerous lesions, oral cancers, dental problems and cardiovascular diseases. A family history of smokeless tobacco use, peer pressure and lack of knowledge about its health effects are some of the factors attributing to smokeless tobacco consumption in India.* ***Objectives:*** *The study was carried out with objectives (1) to assess the prevalence of smokeless tobacco consumption and (2) to assess knowledge about the health effects of smokeless tobacco use in the adult population residing in a slum of Jorhat town, Assam.* ***Methods:*** *A cross-sectional study was conducted in one of the selected slums of Jorhat town, Assam from July 2019 to November 2019. A predesigned pretested structured schedule was used for data collection by interview method. The result was presented in simple tables using percentage frequency.* ***Results:*** *(80.77%) are current users of smokeless tobacco. A Majority (31.79%) consume betel quid with tobacco. Around (69.52%) of the respondents started using smokeless tobacco from 15 years to 25 years of age. (34.58%) responded that smokeless tobacco use causes oral cancer.*

Keywords: Smokeless Tobacco (SLT), Tobacco Consumption, Cross-Sectional Study, Slums

INTRODUCTION

In India, every fifth adult is a user of Smokeless Tobacco (SLT). In Assam, the overall prevalence of all adults consuming SLT is 41.7% which is comparatively high than the national level of (21.4%) [1].

Smokeless tobacco (SLT), by definition, is a tobacco that is consumed in un-burnt form, either orally or nasally including various methods such as chewing, sucking, and applying tobacco preparation to teeth and gums [2]. The most common forms of SLT products consumed are gutkha, zarda, khaini, tobacco with betel quid, pan masala with tobacco, topical tobacco paste, snuff, etc. [3]. Khaini (23.1%) and betel quid with tobacco (19.0%) are the most commonly consumed SLTs in Assam [1].

The presence of the alkaloid nicotine in SLT products causes high addiction and dependency. The presence of other substances like N-Nitrosamines classifies SLT as a group 1 carcinogen [3]. In India, around 70% of oral cancers are preceded by precancerous lesions like oral sub mucous fibrosis, and leukoplakia due to consumption of SLT [4]. A case-control study on Esophageal cancer in Assam reported that men who chewed dried tobacco (Chadha) had a 5-fold greater risk of oral cancer and a tenfold higher risk with a longer duration of use [5]. As such, the relative risk of mortality from consuming smokeless tobacco is high, estimated at around 20% [6].

The use of SLT is more prevalent among the low socioeconomic groups, in rural areas, and slums although it may vary from region to region. Social and cultural practices, the influence of family and friends, and lack of awareness are some other important determinants of SLT use [1, 4].

Taking into consideration all of the above, the study was conducted with the following objectives: (i) to assess the

prevalence of Smokeless Tobacco consumption and (ii) to assess the knowledge of the health effects of smokeless tobacco use in adults residing in a slum.

METHODS

The study design is a cross-sectional study. Out of the seven notified slums in Jorhat town, one slum was selected randomly (New Harijan Colony, Rajamaidam) with a total of approximately 2,142 population as per data available from the local municipal office, Jorhat. The study was carried out for a period of four months from July 2019 to November 2019.

The sample size for the study was calculated by taking into account 76.8% of the knowledge of dental health problems in SLT use. A 95% CI, 10% allowable error, and 5% non-response were considered for sample size estimation. The sample size was estimated at 127. A total of 130 respondents were included in the study.

The inclusion criteria included participants in the age group of 18 years and above and the residents of the study area for a minimum period of 6 months before data collection. The exclusion criteria included participants who did not give consent to participation.

The study was approved by the Institutional Ethics Committee (H), Jorhat Medical College, and Jorhat. Informed consent in verbal was obtained from the participants explaining to them in detail about the study, based on anonymity and confidentiality before data collection.

The first house in the slum was selected by random method and thereafter every house was visited purposely till the desired number of responses was obtained. The respondents were interviewed using a predesigned, pretested structured schedule. From each house, only one adult fulfilling the inclusion criteria was included. A total of 130 adult respondents in the age group 18 years and above participated in the study.

The study variables included socio-demographic factors, SLT consumption about the age at initiation of SLT, frequency of use, products of SLT consumed, and knowledge about health consequences of SLT. A modified Kuppuswamy scale was used to determine the socioeconomic status of the study participants [7, 8].

Data was compiled in a Microsoft Excel sheet. The data have been analyzed only for the current users of SLT and results are expressed using simple frequency distribution tables.

Operational Definitions

In the present study, SLT is defined as any tobacco-containing product that is consumed nasally or orally, or by both.

An urban slum dwelling lacks one or more of the following access to improved water supply access; improved sanitation; sufficient living area; durability of construction; and security of tenure [9].

- A current user of SLT has been consuming for a minimum period of one month till the time of collection of data irrespective of the frequency of use.
- A current non-user of SLT has not been using it for a minimum period of one month at the time of data collection irrespective of the frequency of use.

Never used: Never consumed SLT at any point in time.

Betel quid: Is tobacco with areca nut or slaked lime or catechu or condiments wrapped in betel leaf.

Gutka: Is tobacco with areca nut or slaked lime or catechu or condiments without betel leaf and prepared for commercial use.

Khaini: is tobacco and slaked lime.

Zarda: tobacco is blended with flavours.

RESULTS

Out of the 130 respondents in the study, 112 (86.15%) are males and 18 (13.85%) are females. 77 (59.23%) are Hindus and the rest 53(40.77%) follow Islam. 50 (38.46%) of the adult participants are in the age group of 18 years -27 years.

58 (44.62%) had attained their middle school & high school level education. 92 (70.77%) belonged to the upper or lower class based on the modified Kuppuswamy scale (Table 1).

Table 1 Socio-Demographic profile of the respondents (N=130)

Gender	No	%
Male	112	86.2%
Female	18	13.9%
Age (in years)		
18 years -27 years	50	38.5%
28 years -37 years	48	36.9%
38 years -47 years	18	13.9%
48 years -57 years	14	10.8%
Educational status		
Illiterate	33	25.4%
Primary school	28	21.5%
Middle school & High school	58	44.6%
Intermediate/Higher Secondary school	3	2.31%
Graduate and above	8	6.15%
Socioeconomic class		
Upper Middle	6	4.61%
Lower middle	25	19.2%
Upper Lower	92	70.8%
Lower	7	5.39%
Religion		
Hindu	77	59.2%
Muslim	53	40.8%
Modified Kuppuswamy scale 2019		

The study shows that 105 (80.77%) are currently consuming SLT irrespective of the frequency of use. 17 (13.08%) are current non-users and 8 (6.15%) of the adult respondents did not consume SLT ever at any point in time (Table 2).

Table 2 Smokeless tobacco consumption in adult respondents (N=130)

Consumption of Smokeless Tobacco (SLT)	N= (130)	%
current user	105	80.77%
current nonuser	17	13.08%
never consumed	8	6.15%

Betel quid with tobacco is consumed by 55 (31.79%) of the current users of SLT followed by gutkha 51 (29.48%), 48 (27.75%) Zarda and 16 (9.25%) use Khaini respectively. 56 (53.33%) use SLT 1 times-3 times a day followed by 34 (32.38%) around 4 times-6 times per day and 15 (14.29%) of adults said they consume SLT more than 6 times per day. 95 (90.48%) procured SLT from a nearby paan shop (Table 3).

Table 3 Distribution of respondents according to forms of consumption of SLT, frequency of use and source of procurement of SLT products

Forms of SLT consumed	No (N=173)	%
Betel quid with tobacco	55	31.79%
Khaini	16	9.25%

Gutka	51	29.48%
Zarda	48	27.75%
Others	3	1.73%
Frequency of consumption among current users/day	**No (N=105)**	**%**
1-3 times	56	53.33%
4-6 times	34	32.38%
>6 times	15	14.29%
Source of last procurement of smokeless tobacco.		
Paan shop	95	90.48%
Friends	8	7.62%
Family	2	1.9%
Multiple response table Others: miscellaneous		

In the present study, 73 (69.52%) of the respondents stated the use of SLT from 15 years-25 years of age and 19 (18.10%) at less than 15 years of age. 60 (57.14%) of the current users said that a coworker or a family member consumed SLT at the workplace or at home respectively (Table 4).

Table 4 The Distribution of adult respondents according to age at initiation of SLT and use of SLT by Co-workers and family members

Age in years at the initiation of consumption of SLT among current users	**No (N=105)**	**%**
15 Years-24 Years	73	69.52%
25 Years-34 years	11	10.48%
35 Years-44 years	2	1.95%
<15 years	19	18.15%
Whether any person consumes SLT at the respondent's home /workplace		
Yes	60	57.14%
No	45	42.86%

Multiple responses were observed about knowledge of the health effects of SLT use in the study. 74 (34.58%) responded that oral cancer may be caused due to SLT use, 54 (25.23%) of the respondents had ulcers in the mouth, 28 (13.08%) observed staining and wearing of the tooth, 26 (12.15%) of the responses observed bleeding of gums, 12 (5.61%) of the responses observed dental caries, four (1.90%) of the responses said heart diseases and 11(5.14%) of the responses were miscellaneous responses like hypertension, tuberculosis, weight loss, do not know (Table 5).

Table 5 Distribution of knowledge among the respondents about the health effects caused due to consumption of SLT

Knowledge about health effects associated with consumption of SLT	***No. (N=214)**	**%**
Ulcers in mouth	54	25.23%
Oral cavity cancer	74	34.58%
Stomach cancer	5	2.34%

Staining and wearing of teeth	28	13.08%
Dental caries	12	5.61%
Bleeding of gums	26	12.15%
Heart disease	4	1.87%
**Any other diseases	11	5.14%
*Multiple responses of 105 users of smokeless tobacco **Hypertension, weight loss, Tuberculosis, Do not know		

DISCUSSION

In the present study, the prevalence of current users of SLT is (80.77%). A multicentre survey by ICMR and WHO in 2004 showed a high prevalence of SLT use among urban-slum respondents [10]. A similar finding of (86.88%) SLT use was reported in a study by Roy et. al, 2015 in an urban slum of Durgapur [11]. In Assam, 41.7% of all adults currently use SLT and there is a significant rise in SLT use by 9% from GATS 1(2009-10) to GATS 2, 2016-17 [1]. Assam is also one of the states which contributes to more than two-thirds (68%) of SLT GATS 2, 2016-17 [1]. 69.52% of the current users in the present study started consuming SLT from the age of 15 years-25 years and around 18.10% at less than 15 years of age. A study by Paul et al. found that the average age of initiation of tobacco products was 19.7 years with the lowest recorded age being 12 years. Rupani et al. in their study conducted in an urban slum of Bhavnagar reported the mean age of SLT use at 25 years with a long duration of tobacco chewing. The mean age at initiation of tobacco use in Assam is 18.5 years (GATS 2) which is similar to my study finding. One of the major reasons for use of SLT at an early age has been attributed to family and peer influence, low price, and easy availability among other factors [12-16].

The common SLT products consumed in the present study were betel quid with Tobacco (31.79%), Gutkha (29.48%), and (27.75%) Zarda. However, Khaini (23.1%) and Betel quid with tobacco (19.0%) are commonly used SLTs in Assam as per GATS 2. There is also a wide practice of chewing betel nut with or without Tobacco in Assam either in dry, raw or fermented form [5,7]. However, Sarkar et al. in their study in the slums of Meghalaya reported Khaini (42.4%), betel quid with Tobacco (28.2%), and Gutkha (18.8%) as the common forms of SLT used [16].

The difference in the consumption of SLT products may be influenced by socio-cultural, economic, and environmental factors and the easy availability of SLT products in the respective study areas [1,10,11,13,14]. In my study, the majority (53.33%) of the current users said they use one or either form of SLT around 1 times -3 times a day. A study in a slum by Roy, et al. observed that 86.88% chewed tobacco daily. Gupta, et al. observed in their study that SLT consumption ranged from 3.6 times to 4.4 times a day among the daily current users [10,11]. The finding of the study is important as the risks of oral cancer and other health effects have been attributed to the duration and frequency of chewing and smoking per day 3 [17]. Similarly, the use of different forms of SLT in combination products is found to be highly toxic, mutagenic, and carcinogenic, causing serious health risks depending on the dose & frequency of consumption [3,5,7]. 90.48% of the current users in the study procured SLT from a nearby paan shop which indicated that a certain amount of expenditure is incurred on average for the purchase of the products by the respondents. GATS 2 survey showed that the majority of 55.6% of SLT users purchased tobacco from the store and 35.8% purchased it from kiosk/ paan shops. Another study reported the mean (SD) expenditure on SLT use per month was rupees five hundred [18]. It has been observed that the expenses incurred in tobacco use substitute the basic needs of food and education and may further exacerbate poverty due to high out-of-pocket expenditure for treatment of tobacco-related diseases and socioeconomic inequalities [19]. Around 57.14% of total respondents in the present study responded that a family member or a co-worker consumed SLT at home or workplace respectively which can be correlated with findings from other reports and studies [3,12,19,20]. There were multiple responses about the health effects related to SLT use in the present study. The majority of 34.58% of the current users knew about oral cancer and 25.23% said SLT causes ulcers in the mouth in my study. Route, et al. reported a high knowledge (77%) of adverse health effects of SLT use [21]. Similar studies also observed high knowledge about the harmful health effects among SLT users ranging from 55.8% to 95%. 95.6 % of the adults were aware that SLT causes serious illness (GATS2) survey, however, the majority of 62.2% of respondents, also had the perception that the use of SLT caused no harm to their body [1]. As per the

literature review, it is observed that knowledge and awareness about adverse health effects of SLT are considerably high, irrespective of educational or socioeconomic status. From my study findings, it is observed that interventional health campaigns with a focus on adolescent groups will bring about a behaviour change at the community level [22].

CONCLUSION

The National Tobacco Control Programme (NTCP) was launched in 2007-2008, and one of its main objectives was to generate awareness about the harmful effects of tobacco use in all its forms. Assam has 21 districts under the program dated 2018 hence reinforced IEC or awareness campaigns and counselling activities with active community participation play an important role to reduce SLT use and its related impacts.

Limitations of the study

Due to limitations of time and resources, the collection of data on various determinants of smokeless tobacco consumption among the study participants could not be carried out in detail and the data collected are self-reported by the participants. As the majority of the respondents and SLT users were males in the present study, no results could be shown about gender. Hence the findings of the present study are to be viewed about the above-mentioned.

ACKNOWLEDGEMENT

My sincere acknowledgement to the residents of the study area for their participation and cooperation.

DECLARATIONS

Conflict of Interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

- This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

REFERENCES

[1] Tata Institute of Social Sciences, Mumbai and Ministry of Health and Family Welfare. "Global Adult Tobacco Survey GATS 2 India 2016-2017 Report." *Government of India,* 2021.

[2] Mehrotra, Ravi, Shekhar Grover, and Anshika Chandra. "Role of world health organization framework convention on tobacco control global knowledge hub on smokeless tobacco." *The Indian journal of medical research,* Vol. 148, No. 1, 2018, p. 7.

[3] Reddy, K. Srinath, and Prakash C. Gupta. "Tobacco control in India." *New Delhi: Ministry of health and family welfare, Government of India,* 2004, pp. 43-47.

[4] Gupta, Prakash C., et al. "Smokeless tobacco and public health in India." *Ministry of Health & Family Welfare, Government of India: New Delhi,* 2016.

[5] Phukan, R. K., et al. "Betel nut and tobacco chewing; potential risk factors of cancer of the oesophagus in Assam, India." *British journal of cancer,* Vol. 85, No. 5, 2001, pp. 661-67.

[6] Gupta, Prakash C., et al. "Tobacco associated mortality in Mumbai (Bombay) India. Results of the Bombay cohort study." *International journal of epidemiology,* Vol. 34, No. 6, 2005, pp. 1395-02.

[7] Sharma, Jagannath D., et al. "Cancer: scenario and relationship of different geographical areas of the globe with special reference to North East-India." *Asian Pacific Journal of Cancer Prevention,* Vol. 15, No. 8, 2014, pp. 3721-29.

[8] Saleem, Sheikh M. and Sumaya S. Jan. "Modified Kuppuswamy socioeconomic scale updated for the year 2019." *Indian Journal of Forensic Community and Medicine,* Vol. 6, No. 1, 2019, pp. 1-3.

[9] Ministry of Health and Family Welfare "Report and Recommendations of Technical Resource Group for national

urban health mission."*IndianHomeless Resource Network,* 2014.

[10] Gupta, Vivek, Kapil Yadav, and K. Anand. "Patterns of tobacco use across rural, urban, and urban-slum populations in a north Indian community." *Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine,* Vol. 35, No. 2, 2010, p. 245.

[11] Roy, Sunetra K., et al. "Pattern of Smoking and Chewing Tobacco Use in a Slum of Durgapur: An Industrial City." *IOSR Journal of Dental and Medical Sciences,* Vol. 20, No. 15, 2015, p. 88-92.

[12] Paul, Rudrajit, et al. "Tobacco use Behaviour in the Urban Population: A Hospital-based Study from Eastern India." *Indian Academy of Clinical Medicine*, Vol. 21, No. 1-2, 2020, pp.33-38.

[13] Rupani, P., et al. "Cross-sectional study on smokeless tobacco use, awareness and expenditure in an urban slum of Bhavnagar, western India." *The National Medical Journal of India,* Vol. 32, No. 3, 2019, pp. 137-40.

[14] Shekhawat, Kuldeep Singh, et al. "Smokeless tobacco: Profiling sachets and pattern of use among a low socioeconomic population of Puducherry." *Contemporary clinical dentistry,* Vol. 8, No. 2, 2017, p. 225.

[15] Panigrahi, Ansuman, Bhagabati C. Das, and Madhulita Panigrahi. "Tobacco use among daily wage labourers in the city of Bhubaneswar, Odisha, India." *Journal of Public Health,* Vol. 21, No. 1, 2013, pp. 57-61.

[16] Sarkar, Amrita, et al. "A population-based study on tobacco consumption in urban slums: Its prevalence, pattern, and determinants." *Journal of Family Medicine and Primary Care,* Vol. 8, No. 3, 2019, pp. 892-98.

[17] Mathur, Anmol, et al. "Tobacco Habits and Risk of Oral Cancer: A Retrospective Study in India." *Iranian Journal of Blood and Cancer,* Vol. 1, No. 1, 2008, pp. 111-16.

[18] Parashar, Mamta, et al. "Tobacco use behaviour among construction site workers of Delhi, India." *International Journal of Health & Allied Sciences*, Vol. 6, No. 4, 2017, pp. 210-14.

[19] Shah, Sujay, et al. "Socioeconomic and cultural impact of tobacco in India." *Journal of family medicine and primary care,* Vol. 7, No. 6, 2018, p. 1173.

[20] Mohan, Priya, Harry A. Lando, and Sigamani Panneer. "Assessment of tobacco consumption and control in India." *Indian Journal of Clinical Medicine,* Vol. 9, 2018, p. 1179916118759289.

[21] Sansone, Genevieve C., et al. "Knowledge of health effects and intentions to quit among smokers in India: findings from the Tobacco Control Policy (TCP) India pilot survey." *International Journal of Environmental Research and Public Health,* Vol. 9, No. 2, 2012, pp. 564-78.

[22] Wisotzky, Myra, et al. "The National Tobacco Control Program: focusing on policy to broaden impact." *Public Health Reports,* Vol. 119, No. 3, 2004, pp. 303-10.