

Knowledge, Attitude and Prevalence of Smokeless Tobacco Use among Adults in Bihar: A Cross-Sectional Study

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Abstract

Background: Tobacco use is a serious public health concern affecting youths and adults. It is estimated that the vast majority of tobacco users start using smoked and smokeless tobacco (SLT) products well before 18 years of age. This study aims to access the knowledge, attitude, and prevalence of SLT use among adult population in Bhagalpur, Bihar. **Materials and Methods:** A cross-sectional study was conducted among adult population visiting Jawahar Lal Nehru Medical College and Hospital, Bhagalpur, Bihar from July to October 2021. A validated structured questionnaire was used to gather information regarding knowledge, attitude, and prevalence of SLT use. The data was entered and analyzed using the statistical package for social sciences for windows 26.0. **Results:** Among 650 participants, 77.8% were tobacco users. The prevalence of SLT was 69.2%. Khaini (32.6%) was the commonest form of SLT used followed by gutka (31.4%). Other forms of SLT used were Gul and Betel Quid. Majority of the participants (85.3%) believed that SLT is non hazardous as compared to smoked tobacco and 56.8% knew that tobacco causes cancer. About 57.6% participants said that tobacco use should be prohibited in public place and 43.4% showed interest that they are willing to quit tobacco. **Conclusion:** Prevalence of SLT use is unexpectedly high in the study population. Khaini and Gutka were the most commonly used SLT. Education campaigns focusing on hazards of both smoked and SLT use through existing health care infrastructure should be strategized.

Keywords: Adults, Prevalence, Smokeless tobacco, Tobacco.

INTRODUCTION

The tobacco epidemic is one of the biggest public health threats the world has ever faced, killing more than 8 million people a year around the world. More than 7 million of those deaths are the result of direct tobacco use. Over 80% of the world's population, 1.3 billion tobacco users live in low-and middle-income countries.^[1] India is the second largest consumer and producer of tobacco. Nearly 276 million adults in India are users of tobacco, with 163.7 million users of only smokeless tobacco (SLT). In India, nearly 1.35 million deaths every year is due to tobacco.^[2]

All form of tobacco including smoked and SLT is harmful. SLT use is highly addictive and damaging to health.^[1] It contains at least 28 cancer-causing chemicals^[3] and its use during pregnancy increases the risk for early delivery and stillbirth.^[4] Most SLT users place the product in the cheek or between their gum and cheek.^[5] SLT is also a major risk factor for oropharyngeal cancer and also increases the risk of cardiovascular disease. The most prevalent form of tobacco and commonly used products are khaini, gutka, betel quid with tobacco, and zarda.^[6]

Oral cancer is the third most common cancer in India. Tobacco, alcohol, and betel quid are the main risk factors of cancers of the oral cavity such as oral squamous cell carcinomas and many potentially malignant lesions. In Indian subcontinent, the cancer of gingival and buccal mucosa are common due to placement of tobacco quid in the oral cavity. This cancer of the gingivobuccal complex is termed as Indian oral cancer.^[7]

The availability of various forms of tobacco use in India is complex and adolescence and early adulthood have shown profound public health implications.^[8] This phase of life is considered to be the most susceptible phase of life for initiation of tobacco use in India.^[9] The present study aimed to access

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the knowledge attitude and prevalence of SLT use among adult population in Bihar.

Objectives

- To determine the prevalence of SLT consumption among adults
- To determine the knowledge regarding the effects of smoked and SLT consumption
- To determine the attitude towards tobacco consumption.

MATERIALS AND METHODS

A cross-sectional study was conducted for 4 months from July to October 2021 to access the knowledge, attitude, and prevalence of SLT use among adult population of Bihar. Individuals who visited in the Out-Patient Department of Jawahar Lal Nehru Medical College and Hospital, in Bhagalpur district of Bihar during the study period and gave consent for the study were included in this study. Participants who were of 15 years and above were included in the study through convenient sampling method. The sample size of 650 was calculated considering prevalence of SLT from a similar study^[10] using formula, $n = [DEFF * Np(1-p)] / [(d^2 / Z_{1-\alpha/2}^2 * (N-1) + p * (1-p)]$.

A self-administered structured pre-tested questionnaire was used in the study. The questionnaire consisted of two sections. First section consisted of the socio-demographic details of the individuals and the second section dealt with questions on the knowledge, attitude, and use of smoked and SLT use. SLT use, in the form of khaini (tobacco-lime mixtures), gutka (industrially manufactured and marketed tobacco product), gul (powdered form of pyrolyzed tobacco), and betel quid (consisting of fresh betel leaf, lime, catechu, areca nut, and tobacco) was asked from the individuals.^[10] An individual was considered to be consumer of tobacco/SLT if he/she was consuming tobacco/SLT within last 1 year. An individual was considered as non-consumer of tobacco/SLT if he/she had never consumed tobacco/SLT in his/her life.

Data was collected by face to face through a self-administered structured pre-tested questionnaire translated in Hindi language. To ensure accuracy of data entered and to avoid missing data, regular monitoring of data was done by two trained investigators. The study was approved by the Institutional Ethics Committee, Jawahar Lal Nehru Medical College and Hospital, Bhagalpur, Bihar. Informed written consent was obtained from each participant prior to the data collection. Confidentiality and privacy of the participants were maintained.

Statistical analysis

For categorical data, the percentage of different parameters was calculated and for quantitative data, descriptive statistics were calculated. The strength of association between tobacco use and socio-demographic factors was also evaluated. For income stratification, the BG Prasad classification^[11] was used. The data were entered and analyzed using the statistical package for social sciences for windows 26.0.

RESULTS

The data obtained from 650 participants were analyzed. The participants were aged between 15 and 78 years (average age being 36.3 [$\pm$ 10.9] years). Out of 650 individuals who participated in this study, 60% ($n = 390$) were males and 40% ($n = 260$) were females. Majority of the participants were from age group of 35 to 44 years of age (34.3%), 90.3% were Hindu, 86.6% were married, 22.2% were illiterate, 77.4% were unemployed, majority with a monthly income of $\leq$ 3500 rupees (44.3%).

Prevalence and pattern of tobacco use

Among 650 participants, 506 (77.8%) individuals consumed tobacco in all forms and 144 (22.2%) individuals never consumed tobacco in any form. 14.8% ($n = 75$) individuals consumed smoked tobacco, 69.2% ($n = 350$) consumed SLT and 16% ($n = 81$) consumed both smokes and SLT.

The practice of SLT use in different age groups was evaluated. Khaini (32.6%) was found to be most commonly used form of SLT among adult followed by Gutka chewing (31.4). Other commonly consumed forms of SLT were Gul (25.4%) and Betel Quid (10.6). Khaini (27.7%) followed by Gul (21.1%) was the most prevalent form of SLT used among male counterpart whereas Gutka (11.7%) followed by Betel Quid (6.9%) was most prevalent form of SLT used among female counterpart (Table 1).

Khaini (10.6%) and Gul (8.6%) were more commonly consumed SLT in age group of 55–64 years. Consumption of Betel quid (4.9%) was found more in the age group of 45–54 years. Among all SLT products consumed by the participants, highest consumption was found for Gutka and was most prevalent in the age group of 25–34 years, (Table 2).

Study participants were asked about little knowledge-related questions through the self-administered questionnaire. Large number of participants were unaware about the fact that SLT causes cancer (56.8%). Only 6.4% of participants were aware of the scorpion sign on gutka packets, 69.7% of participants believed that snuffing cures common cold and 85.3% were unaware about the fact that SLT is as hazardous as smoked tobacco, (Table 3).

Regarding attitude towards SLT use, 57.6% of participants believed that tobacco should be prohibited in public place and

Table 1: Prevalence of the various smokeless tobacco (SLT) products used among males and females counterpart

Smokeless tobacco products	Male n (%)	Female n (%)	Total n (%)
Khaini	97 (27.7)	17 (4.9)	114 (32.6)
Gul	74 (21.1)	15 (4.3)	89 (25.4)
Betel Quid	13 (3.7)	24 (6.9)	37 (10.6)
Gutka	69 (19.7)	41 (11.7)	110 (31.4)
	253 (72.2)	97 (27.8)	350 (100)

Table 2: Prevalence of the various smokeless tobacco (SLT) products used among participants of different age groups

Age groups	Khaini n (%)	Gul n (%)	Betel Quid n (%)	Gutka n (%)
15–24	5 (1.4)	2 (0.6)	0 (0.0)	34 (9.7)
25–34	13 (3.7)	8 (2.3)	2 (0.6)	48 (13.7)
35–44	9 (2.6)	13 (3.7)	5 (1.4)	17 (4.9)
45–54	19 (5.4)	11 (3.1)	17 (4.9)	5 (1.4)
55–64	37 (10.6)	30 (8.6)	8 (2.3)	4 (1.1)
65–74	29 (8.3)	24 (6.8)	4 (1.1)	2 (0.6)
≥75	2 (0.6)	1 (0.3)	1 (0.3)	0 (0.0)
Total	114 (32.6)	89 (25.4)	37 (10.6)	110 (31.4)

Table 3: Distribution of study participants as per knowledge regarding smokeless tobacco

Knowledge questions	Yes
Smokeless tobacco causes cancer	56.8%
Meaning of scorpion on gutka packets	6.4%
Snuffing cures common cold	69.7%
Smokeless tobacco is non hazardous as compared to smoked tobacco	85.3%

2.3% of participants said there is no harm in consuming SLT in front of children. When asked about their willingness to quit SLT, only 43.4% of participants were willing to quit tobacco at some or the other point of time, though it was disappointing to here that only 14.9% of participants took any initiative to advise anyone to quit smoking, (Table 4).

DISCUSSION

The present study accessed the knowledge attitude and prevalence of SLT use among adult visiting Out Patient Department of Jawahar Lal Nehru Medical College and Hospital, Bhagalpur, Bihar. According to the latest Global Adult Tobacco Survey (GATS-II) (2016-2017),^[12] the prevalence of SLT in Bihar among adults is 23.5%. The prevalence of SLT in our study was 69.2% which is 3 times more than that of Bihar. Similar prevalence of SLT is shown in a study conducted in Uttar Pradesh by Nethan *et al.*^[13] (68.8%) and in Jharkhand by Avinash *et al.*^[10] (70%). In the present study, 16% of participants consumed both smoked and SLT, which is similar to a study by Nethan *et al.*^[13] (14.3%). The prevalence of SLT use for males in the present study was 72.2% and for females, it was 27.8%. This is similar to the finding of the study by Avinash *et al.*^[10] and Choudhary *et al.*^[14] where the prevalence among male counterpart is 76.41% and 60% respectively.

Khaini and bidi are the two most commonly used tobacco products in Bihar, with 20.4% of adults consuming khaini and 4.2% of adults smoking bidi.^[12] In our study, 32.6% of the participants consumed Khaini, which is more than that of GATS-II findings in Bihar. For other SLT the prevalence in our

Table 4: Distribution of study participants as per attitude regarding smokeless tobacco

Attitude questions	Yes
Tobacco use should be prohibited in public place	57.6%
Advised anyone to quit tobacco	14.9%
Is it right to use tobacco in front of children	2.3%
Willing to quit tobacco	43.4%

study was gutka (31.4%), gul (25.4%), and betel quid (10.6%). The prevalence of these SLT was similar to the findings in a study by Nethan *et al.*,^[13] i.e. gutka (23%) and gul (21.1%). In the present study most commonly consumed SLT product was Khaini (27.7%) which is similar to the finding of the study by Nethan *et al.*^[13] (42.1%). Maximum number of participants who consumed SLT were in the age group of 55–64 years in the present study, which is similar to the finding in the study by Choudhary *et al.*^[14]

Regarding knowledge toward SLT, 6.4% of participants in our study were aware of the scorpion sign on gutka packets, 69.7% participants believed that snuffing cures common cold and 85.3% were unaware about the fact that SLT is as hazardous as smoked tobacco. These findings were similar to a study by Avinash *et al.*^[10] where 7.44% were aware of the scorpion sign on gutka packets, 77.9% believed that snuffing cures common cold and 82.7% were unaware about the fact that SLT is as hazardous as smoked tobacco.

Regarding attitude towards SLT, 57.6% of participants in the present study believed that tobacco should be prohibited in public place which is similar (51.2%) to a study by Avinash *et al.*^[10] When asked about their willingness to quit SLT, only 43.4% of participants were willing to quit tobacco and 14.9% advised anyone to quit smoking. These findings were also similar to a study by Avinash *et al.*^[10] where 47% of participants were willing to quit tobacco and 24.1% advised anyone to quit smoking.

CONCLUSION

Large number of people was found to be using smokeless forms of tobacco, indicating the deep-rooted cultural practices in the area. The study also brings up the fact that the males and the older population were more likely to consume SLT. Targeted interventions such as conducting regular IEC activities for generating awareness with the strict implementation of tobacco control measures by the government needs to be carried out along with the creation of counseling setups in all healthcare settings.

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