

# Exploring smokeless tobacco use in a multi ethnic society; a cross sectional study from Rawalpindi, Pakistan

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## Abstract

**Introduction:** Smokeless tobacco (SLT) use is extremely common in South Asia. This is because of easy availability and lack of potent control measures. Its link with oral cancers is well established. One of the ways of decreasing its use is by educating the public about its adverse effects. The cities of Rawalpindi and Islamabad are strategically important with migrants of numerous ethnicities from all over Pakistan, providing a mixture of socio-cultural traditions, including increasing use of SLT.

**Objective:** To assess the knowledge, practice and attitude regarding various health outcomes of SLT use amongst users visiting tertiary care hospitals of Rawalpindi.

**Patients and Methods:** Cross-sectional survey conducted at the outpatient departments of Holy Family Hospital, Benazir Bhutto Hospital and District Head Quarter Hospital Rawalpindi from October 2014 to January 2015. An interviewer administered questionnaire was used to interview 479 attendants of patients. Users of SLT were identified and knowledge, attitude and practices were assessed. The data was analyzed with SPSS 17 and results reported in a descriptive format.

**Results:** Ninety (18.8%) users were identified. Seventy-eight percent users consumed SLT multiple times a day. Seventy-eight percent users considered peer pressures as a cause for starting use while 56.7% users had a family member using it. Niswar was used by 82% of the users and the Punjabis (52%) and Pathans (20%) were the ethnic factions using it the most. Almost 19% users believed SLT was beneficial for health and only 5.6% appreciated its carcinogenic nature.

**Conclusion:** SLT use is common amongst younger, less educated individuals being influenced by regional preference and persuasive socio-cultural factors. Erroneous perceptions regarding its carcinogenicity were identified. Health awareness campaigns and oral cancer screening will be beneficial in this region.

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## Introduction

Smokeless tobacco (SLT) is used widely in South Asia and Pakistan. Numerous products exist; Niswar and tobacco with Paan/betel quid are the commonest (1). Others include Ghutka, Qiwam, Mainpuri and many less important products. Most people place these in the mandible or labial groove and suck them (1).

Use of SLT is a popular cultural tradition of South Asia with users in India and Pakistan estimated at 100 million (2). A study in Pakistan revealed 21% of men and 12% of women as users of betel quid (3). Use is now being reported amongst children, adolescents, women and also immigrants of South Asian descent (1,4-6).

Potent risk factors culminating in its use include low cost, easy availability, peer

## Core tip

Health literacy promotion, screening programs for oral cancer in high risk groups and health regulatory measures are of cardinal importance in reducing the adverse health impacts of smokeless tobacco use.

pressures and the widely held erroneous concepts regarding its medicinal value in relieving toothaches, headaches and stomach pains. Many believe that it is a safe alternative to smoking (1,6). Although, governments have focused on curtailing tobacco smoking, SLT has largely been ignored (1,7).

Tobacco related cancers account for about one third of all cancers in South Asia (1,8). SLT is the most important risk factor for developing oral cancer. It also causes



esophageal and laryngeal cancers (9,10). In Pakistan, oral cancer is the second most common cancer and is characteristically distributed amongst various ethnic factions (11). The recent surge in cases of oral Submucous fibrosis in South Asia is also attributed to SLT and many common conditions notably hypertension, diabetes and peptic ulcer disease are aggravated by its use (1,12).

The cities of Rawalpindi and Islamabad are strategically important. The migration of people from all over the country including those from Afghan and Northern area territories for job opportunities and a better standard of living creates an amalgam of different cultures and will provide a good estimate of the prevailing problem. Thus, with the objective of determining the frequency of SLT use and assessing knowledge and attitudes regarding its adverse outcomes in the users the study was intended to provide inputs to public health stakeholders for the identification and control of this issue.

### Objectives

To assess the knowledge, practice and attitude regarding various health outcomes of SLT use amongst users visiting tertiary care hospitals of Rawalpindi.

### Patients and Methods

#### Study population

This cross-sectional study was conducted in the outpatient departments of Medicine and Surgery in Holy Family Hospital, Benazir Bhutto Hospital and District Head Quarter Hospital in Rawalpindi. The attendants of the patients were interviewed only after obtaining informed consent. A self-designed interviewer administered questionnaire containing both open and closed questions was used to gather information on variables pertinent to use of SLT. The questionnaire was pretested by a pilot study and was improved. A group of fourth and fifth year MBBS students who had command in local languages including Pushto, Pothohari and Punjabi were trained in data collection. Multiple rehearsals were made and a standard way of interviewing was ensured prior to execution of study.

The sample size was calculated through the Raosoft sample size calculator software for the 4.5 million population of Rawalpindi, with an expected prevalence of 20% SLT use as mentioned in previous literature (3). Accepting a margin of error 5%, at 95% confidence limits the sample size was 246 and at 99%; 425. We tried to stretch the sample size to ensure greater validity of our findings so ended up with a sample of 479 respondents. Sample size was completed through convenient sampling. Subjects 18 years and above were included while attendants belonging to medical profession and those whose patients were seriously ill were excluded to avoid disturbing their emotions.

#### Ethical issues

1) The research followed the tenets of the Declaration of Helsinki and its later amendments; 2) informed consent was obtained; and 3) Permission of the ethical review

committee of the Rawalpindi Medical College was sought prior to execution of the study.

#### Statistical analysis

Data was collected during October 2014 to January 2015 regarding demographic variables and users of SLT were identified and interviewed regarding type of SLT used, frequency, duration and age of start of use, perceptions regarding its health outcomes, family use and co existent smoking. All attendants were questioned regarding adverse outcomes of SLT and whether they considered SLT more harmful than smoking or vice versa.

Descriptive analysis of all the information was done using SPSS version 17. Operation definition; only those subjects who were using SLT on a daily regular basis were considered.

#### Results

A total of 479 attendants completed the survey. The male to female ratio was 1.1 to 1 and other socio-demographic attributes are reflected in Table 1. The frequency of SLT use was 18.78% (90 users).

Users' demographic profile and variables related to SLT use are detailed in Tables 1 and 2 respectively.

Majority of the users (61, 67.8%) were younger with mean age of 34 years and range of 18 to 84 years. The mean age at start of SLT use was 26.17 years and mean duration of use was 19 years. Most (70, 77.8%) of the users were using SLT more than two times a day and were younger with upper age limit of 35 years in 49 subjects (77.8% of these 70 users mentioned). Use in relatively large quantity (3-4 fingers grasp) with frequent use (more than two times a day) was found in all of the Pathan users (18; 100%) followed by (11, 78.6%) Hazarwi/Hindkowan/Northern area factions and by Punjabis (35, 74.5%) while rest of the users were using SLT in relatively small quantity; 2-3 fingers grasp with a frequency of two or less than two times a day.

Prior use of SLT in the family was present in more than half of the users (51, 56.67%). The mean age of starting SLT in this group was 23 years compared to 31 years in the rest who did not have this factor in their lives (39, 43.3%). Thirty-four users (89.5%), who were smokers too considered SLT less harmful to health than smoking while others (4; 10.5%) did not comment on it. Perceptions of users who considered use of SLT as bad for health are reflected by Table 2.

Perceptions regarding health relevance in relation to educational status of the respondents are detailed in Table 3.

#### Discussion

Prevalence of SLT use in Pakistan is between 20%-40% (6,13). We report a frequency of 18.78% with a marked dominance in males; this is due to the wider social approach of this gender. An inverse relationship between education and SLT use is well-known. Seventy-two percent users in our study and almost all females amongst them was either illiterate or had less than 5 years of schooling. In a past

**Table 1.** Socio-demographic characteristics of the total respondents interviewed and the users

Socio-demographic characteristics	Categories	Frequency in actual number & percentage of the total respondents (n=479)	Frequency in actual number & percentage of the Users (n=90)
Gender	Male	254 (53%)	69 (77%)
	Female	225 (47%)	21 (23%)
Marital status	Married	364 (76%)	68 (75.6%)
	Single	115 (24%)	22 (24.4%)
Educational status	Non-literate	171 (35.6%)	40 (44.4%)
	≤10 years of schooling	240 (50.2%)	43 (47.8%)
	Above matriculation	68 (14.2%)	7 (7.8%)
Occupation	Laborer, farmer, daily wages worker	224 (47%)	58 (64%)
	Small businessman, agriculturist, non-gazetted govt. employees	29 (6%)	9 (10%)
	Businessman, landlord, gazette govt. employees	10 (2%)	1 (1%)
	Jobless	24 (5%)	6 (7%)
	Housewife	163 (34%)	13 (14%)
	Student	29 (6%)	3 (3%)
Linguistic group	Punjabi	316 (66%)	47 (52%)
	Pashtu speaking	48 (10%)	18 (20%)
	Saraiki	10 (2%)	2 (2%)
	Urdu speaking	29 (6%)	3 (3%)
	Hazarwi/Hindkoo / northern areas	38 (8%)	14 (16%)
	Kashmiri	29 (6%)	5 (5.6%)
	Sindhi	7 (1.5%)	0
Place of Living	Balochi	2 (0.5%)	1 (0.01%)
	Urban	239 (49.9%)	43 (47.8%)
	Rural	240 (50.1%)	47 (52.2%)

study by Nisar and colleagues SLT use by females was more common amongst the less educated especially after they got married (6). This factor will aid in the propagation of the habit amongst their children and the youth since mothers have a profound effect on child upbringing (13-15). More than half of the users were daily wage workers. This segment of our society is afflicted with poverty and disease, while SLT is a cheap form of entertainment and stress reliever for them. Seventy-five percent of users were married unlike in past studies which revealed frequent use amongst single individuals; this may be due earlier start of use in our respondents as highlighted later or may be due to a cumulative trend and sampling issues (16).

Greatest use was amongst the Punjabi residents followed by Pathans and northern area dwellers. Niswar is the most popular SLT product in Pakistan (15). Regional preferences are important in selection of the products; thus almost all Pathan users used Niswar.

Oral cancer is commonest in Pakistan amongst the Urdu speaking and Balochis (11). It has a latent period of around 10 years and risk rises with more frequent and heavy use of SLT (17,18). In a past study done in Pakistan, oral cancer was commonest in SLT users' less than 40 years of age (11). In this study 78% users used SLT multiple times a day, their mean age and mean age of start of use was 34 and 26 respectively while mean duration of use was 19 years. Thus the heavy, prolonged and earlier onset use amongst this middle aged economically active division may predispose them to oral cancer adversely affecting health and straining families financially. A past study in Karachi had shown 16% prevalence amongst high school

males while another reported a 74% and 35% prevalence of SLT use in 2 categories of school attendees (5,19). This study thus highlights how rapidly the habit is swarming amongst the younger more active division of the society.

A past study in Pakistan by Sohoo et al, identified peer pressures as the dominant predisposing factor for SLT use which is in accordance with our study as shown by Table 2. Those who had a history of SLT use in their families (parents or siblings) started use at 23 years of age compared to 31 years for those who did not have this factor in their lives. This may have statistical significance and indicates need for focusing health education campaigns that target married people who have a habit of using SLT. A majority of the users believed that low cost, easy accessibility and availability of SLT were responsible for starting use. Thus the common man genuinely realizes the issue and expects regulatory and lawful measures from the state. Some users also started SLT for relief of health worries which simply highlights the lack of awareness amongst these individuals. The most dominant pattern of use identified was after meals. Whether this is simply concerned with meal patterns or has some biochemical logic, demands further investigation.

Smoking is a risk factor for SLT use and studies show that it facilitates the use of SLT (20). In a recent study the mean age of start of smoking coincided with the start of use of SLT (15). Forty-two percent of users in our study smoked. Interestingly, majority of them considered SLT less harmful than smoking and regarded it as an easier way to quit smoking. Those who considered it to be completely safe were mainly illiterate and belonged to the Punjabi and

**Table 2.** Pattern of SLT use and perceptions of the users (n = 90)

Attributes of the users	Classes of the attributes	No.	Percent
Type of SLT used	Niswar	74	82
	Paan with tobacco	08	8.9
	Ghutka	08	7.8
Family use of SLT	Yes	51	56.7
	NO	39	43.2
Frequency of use	≤2 times a day	20	22.22
	>2times a day	70	77.77
Associated cigarette smoking	Yes	38	42.2
	No	52	57.8
Perception of health relevance of SLT use	Bad for health	68	75.6
	Good for health	14	15.6
	Don't know	8	8.9
Perceptions regarding adverse health outcomes	No harmful effects	17	18.90
	Oral cancer	5	5.60
	Heart disease	6	6.70
	Lung disease	6	6.70
	Stomach diseases	7	7.80
	Visual defects	3	3.30
	Soreness of the mouth and gums	31	34.40
Predisposing factor for starting use	Others	15	16.70
	Peer pressures	70	77.78
	Acceptability, accessibility and affordability	42	46.7
Sources of information regarding adverse health outcomes	Relief of diseases <sup>a</sup>	12	13.3
	Family, social contacts and close acquaintances	55	61.11
	Healthcare personnel	19	21.11
	Media (TV, newspaper, radio)	16	17.77

<sup>a</sup>Headaches, worries, stomach upsets, toothaches.

northern area factions. Studies are currently trying to dish out an effective tobacco product for smoking cessation. However as erroneously believed by many in our society, it cannot be used to quit smoking.

Perceptions regarding adverse health outcomes are shown in Table 2. The fact that 18.9% considered it harmless and only 5.6% appreciated its relation with oral cancer is alarming. A past study conducted in Karachi showed, 20% of the sample considered SLT beneficial for health (6,15). Previously, Khawaja et al reported, 79% of their respondents had poor knowledge regarding carcinogenicity of SLT and 20 % considered these beneficial (13).

Since maximum information regarding adverse effects of SLT was from social contacts, mass media and health professionals these sources should be preferentially targeted. Screening programs for oral cancer amongst high risk groups will also prove beneficial.

**Table 3.** Perceptions of the respondents about health relevance of use of SLT towards their educational status (n = 479)

Perception of health relevance of use of SLT	Non-literate or less than 5 years of school education	Five and up to 10 years school education	Above 10th class education	Global
Bad for health	49 (72%)	14 (20.6%)	5 (7%)	68
Not bad for health	10 (71.4%)	3 (21%)	1(7%)	14
Do not know	6 (75%)	1(12.5%)	1(12.5%)	8

## Conclusion

SLT use was present amongst the young to middle aged, lower socioeconomic class Punjabi, Pathaan and Hazarwi, Hindkoo and Northern area factions of this society. Frequent predisposing factors identified were peer pressures, family use, affordability and accessibility of the products, smoking, limited education and belonging to lower socioeconomic class.

The common man perceives the adverse health impacts of SLT but needs potent reinforcements from the government and society. Health literacy promotion, screening programs for oral cancer in high risk groups and health regulatory measures are of cardinal importance is reducing the adverse health impacts of SLT use.

## Limitations of the study

Our study had a limitation; the sample did not have a substantial amount of Sindhis, Balochis and Urdu speaking due to their scanty population in the twin cities.

## Authors' contributions

ZUA coined the study idea and methodology. He was involved in devising the questionnaire, collecting data, entering it on SPSS and analyzing it. He drafted the manuscript, did the literature review and critically reviewed and edited the article. SAS supervised the study. He played an important part in helping devise the study methodology and questionnaire. He helped in performing the literature review, drafting the manuscript and critically reviewing the article. AA was involved in data collection, entry and drafting the manuscript and critically reviewing it. ZS helped in drafting the manuscript, critically reviewing it and editing it multiple times.

## Conflicts of interest

The authors declare no conflict of interest.

## Ethical considerations

Ethical issues (including plagiarism, data fabrication, double publication) have been completely observed by the authors.

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