

Review Article

Smokeless tobacco use in Nepal

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Abstract

Tobacco use is widely prevalent in different forms in Nepal. These habits are deeply rooted among different age groups and gender. There is no information available on all aspects of smokeless tobacco (SLT) use and its implications in Nepal. To review the types of SLT products available in Nepal, prevalence of SLT use, correlates of SLT use, SLT-related harm, and existing gaps in information and policy implications. This review is mainly based on information from literature, and some WHO and other documents. The prevalence of smokeless tobacco use is high, particularly among males and disadvantaged groups. SLT users have multiple habits of tobacco chewing, smoking and drinking. Despite SLT products being manufactured in the unorganized sector, they are also largely imported from India. People have easy access to various SLT products. There is a general lack of information on the health hazards of SLT use to the population. This calls for research on the issue. In order to succeed in reducing SLT use in Nepal, addressing the challenges of enforcing the Tobacco Control Act through a multisectoral approach and developing capacity of sectors other than health is of vital importance.

Key words: Health impact, prevalence of smokeless tobacco use, smokeless tobacco products, smokeless tobacco

Introduction

Smokeless tobacco (SLT) use is prevalent in Nepal, and various SLT products are widely available in the country. Even though SLT use is high, there is a lack of information on patterns of SLT use and its implications. The proportion of deaths due to noncommunicable diseases (NCD) has crossed 50% in Nepal.^[1] Some reports have shown that SLT use causes oral premalignant and malignant lesions. This review is mainly focused on information from the literature, and some WHO and other documents.

Smokeless tobacco products in Nepal

Some common smokeless tobacco products available in Nepal are as follows:

Betel-quid^[2-5] is a mixture of betel leaf, areca nut, slaked lime and catechu. Often, condiments and sweetening


agents are also added. It can be prepared by individuals or by vendors according to the choice of users. However, inclusion of tobacco to betel quid is quite popular in betel quid preparations. In Nepal, almost all betel quid chewers add tobacco to it. A few suburban studies have shown that betel quid chewing is the most common form of tobacco chewing, and it is readily available in all parts of the country.

The quid is placed in the mouth between the gum and cheek and gently chewed/sucked.

Khaini^[1,2,6] is a blend of dried tobacco leaves and slaked lime. It is also called *surti* in Nepal. Most people prepare it manually by slapping and rubbing tobacco leaves on the palm of the hand and mixing it with lime. A pinch of it is then placed in the mouth and sucked slowly. However, it is abundantly available in manufactured forms in little foil packets and sold in stalls. Its use is frequent in the Tarai belt of Nepal.

Gutka^[2,5,6] is a commercially manufactured product containing areca nut, slaked lime, catechu, sweet flavouring and powdered tobacco. It is available in foil sachets or tins. It is held in the mouth and chewed. Users generally spit out the saliva, but sometimes it is swallowed.

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Zarda^[1,2,5] is flavoured tobacco available in small packets or tins. It may be chewed or used as an ingredient in betel quid. It is generally prepared by boiling tobacco leaves in water with slaked lime and spices, and then colouring and flavouring agents are added.

Pan masala^[5,6] is manufactured commercially by mixing areca nut, slaked lime, catechu and condiments, and is available with or without tobacco. It comes in attractive foil packets and tins. However, the brand names of *pan masala* with and without tobacco are identical.

Snuff^[4,5] is a product made from ground or pulverised tobacco leaves. It is usually inhaled or sniffed through the nose either directly from the fingers or by using specially made snuffing devices. It is scented or flavoured and comes either in a dry or moist form.

Gul^[4,5] is a commercially manufactured oral tobacco powder that comes in different brands. It can also contain molasses and other ingredients. People usually apply it to the teeth and gums as dentrifice.

Prevalence of smokeless tobacco use

SLT use among adults at the national level

The noncommunicable disease risk factor survey (STEPS) conducted in 2008 among 4072 respondents at the national level showed that the prevalence of smokeless tobacco was 18.6% among adults aged 15-64 years; 31.2% among males and 4.6% among females. SLT use increased initially with age and reached the peak for both males and females at age 45 to 54 years. Conversely, the trend across age groups showed a marked reduction after 54 years [Figure 1]. Likewise, among current SLT users, prevalence of daily use of SLT among both males and females increased with age, and peaked at the age range of 45-54 years. The proportion of non-daily use among current SLT users was higher in the younger age groups (15-25 years), particularly among males as compared with older age groups [Figure 2]. Overall, the frequency of chewing tobacco was seven times per day. However, frequency varied according to different SLT products. For instance, betel quid with tobacco and *gul* were used three times per day while *gutka* was used four times per day.^[7]

The secondary data analysis of DHS (2006), involving 15190 participants aged between 14-59 years showed that the prevalence of tobacco chewing was 14.6% (CI: 13.5-15.7); with 38% (CI: 35.8-40.3) among males and 5% (CI: 4.3-5.8) among females. Tobacco chewing varied from 10.1% in the mid-western region to 19.7% in the eastern region [Figure 3].

SLT use among youth at the national level

Nepal conducted the Global Youth Tobacco Survey (GYTS) in 2011 among 2878 students aged 13-15 years with the overall response rate of 73.9%. The prevalence of current SLT use among youth in Nepal is 16.2%; with 19.7% among boys and 12.9% among girls. 9.6% of them used betel quid with

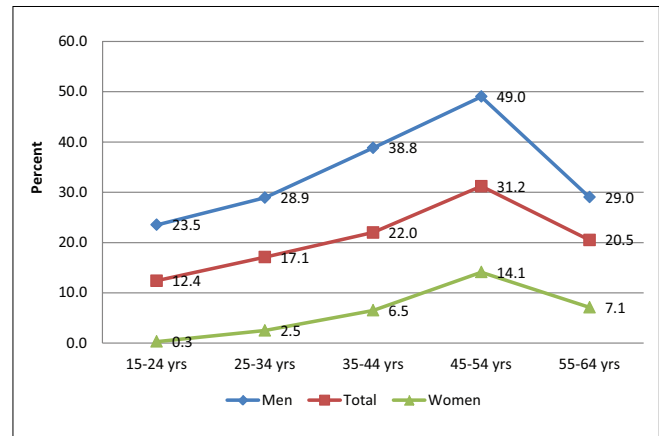


Figure 1: Percentage of current users of smokeless tobacco, by gender and age groups, Nepal, 2008^[4]

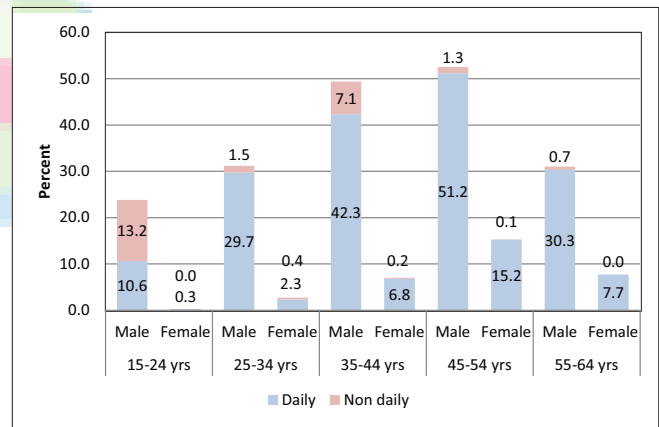


Figure 2: Percentage of current users of smokeless tobacco, by gender, age groups and consumption pattern, Nepal, 2008^[4]

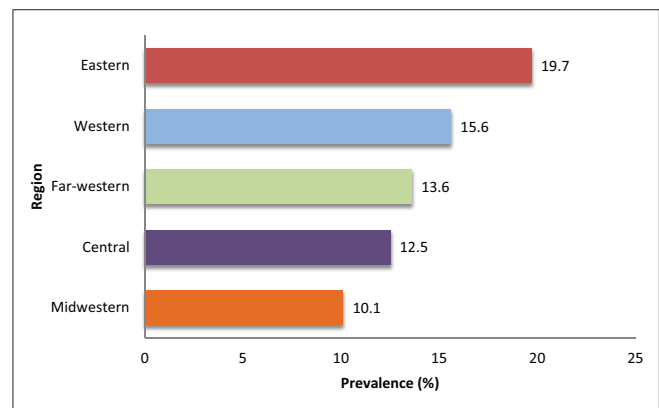


Figure 3: Prevalence of tobacco chewing, by region, Nepal, 2006^[6]

tobacco, 7.6% *pan masala* with *zarda*, 3.3% *khaini* and 4.6% any other SLT products. More boys were using different types of SLT products than girls [Table 1].^[8]

SLT use among adults at the sub-national level

Several sub-national household surveys conducted in Kathmandu, Pokhara, Dharan, Chitwan and Leknath have shown that the prevalence of SLT use among adults aged 15 years and above varied from 9.3% to 43.6% among males and from 0.9% to 34.9% among females [Table 2].

SLT use among youth at the sub-national level

One study in Pokhara and another in Pokhara and Leknath among college students revealed that close to one in ten students chewed tobacco in any form. The median age of initiation of tobacco chewing among them was around 15 years for ever-chewers and about 16 years for current chewers. Tobacco chewing was higher among males than females [Table 3].^[9,10]

Correlates of SLT use

The logistic regression analysis from DHS 2006 data

showed that males were over 17 times more likely to chew tobacco than females [95% CI, $P < 0.001$]. People in the age range of 30-49 years had a higher likelihood of chewing tobacco than those in the other age groups [95% CI, $P < 0.001$]. Individuals without education were over three times more likely to chew tobacco than those who had higher education [95% CI, $P < 0.001$]. People in the poorest wealth quintile were 1.71 times more likely to chew tobacco than their counterparts in the richest quintile [95% CI, $P < 0.05$]. Similarly, a higher likelihood of tobacco chewing was observed among people who were divorced/separated/widowed and residing in the eastern region of Nepal in comparison with those who were currently married and living in other regions.^[11]

In Dharan, among female tobacco chewers the prevalence of tobacco chewing was higher among those who were doing business (30.5%) as compared with labourers (21.8%); who were in the age group of 35-44 years (25.2%) as compared with extremes of age groups; who were either married (21.1%) or separated (22.9%) as compared with unmarried (1.4%) and also among Muslim women (25%) as compared with Hindu women (14.4%). This local survey also reported that the female smokers were twice as likely to chew tobacco than those females who do not smoke [95% CI, $P < 0.0001$].^[12]

Prevalence of specific SLT products

Among the 104 current tobacco chewers who participated in the study in Pokhara and Leknath (2007), 32.7% used *gutka*, 25% *pan masala*,

Table 1: Prevalence of smokeless tobacco products use among students aged 13-15 years, Nepal 2011, by gender^[8]

Specific SLT products	Boys(%)	Girls(%)	Total(%)
SLT use	19.7	12.9	16.2
Betel quid with tobacco	12.8	6.6	9.6
Pan masala with zarda	9.3	6.3	7.6
Khaini	3.3	3.2	3.3
Any other SLT products	4.2	4.7	4.6

SLT=Smokeless tobacco

Table 2: Prevalence of smokeless tobacco use among adults at sub-national level in Nepal, 2001-2010

Year	Age group (years)	Study sites	Sample	Prevalence (%)		
				Male	Female	Total
2003*	25-64	Katmandu	2030	25.0	0.9	-
2007 ^[9]	20+	Pokhara Leknath	1662	9.3	1.9	6.5
2001 ^[10]	15+	Dharan	2340	-	14.1	14.1
2009-10 ^[3]	15+	Katmandu Chitwan Nawalparasi Pokhara	1002	43.6	34.9	-

*Government of Nepal, Ministry of health and population. Noncommunicable diseases risk factor survey 2003

Table 3: Prevalence of smokeless tobacco use among youth at sub-national level in Nepal, 2006-2007

Year	Study sites	Total sample	Ever chewers (%)	Current chewers (%)	Age of initiation (years)
2006-07 ^[9]	5 colleges in different streams in Pokhara	816	Male=30.2	T=8.3	Ever=15.7
			Female=10.9		Current=16.5
			Total=21.3		
2007 ^[10]	Pokhara & Leknath in 13 junior collages among 11 th -12 th grade (median age-17 years)	1596	-	Male=9.3	Ever=15
				Female=1.9	
				Total=6.5	

23.1% *surti*, vs. 11.5% *khaini* and the remaining used combinations of different types of chewable tobacco [Figure 4].^[9]

The Pokhara study among 816 students in 2006-07 revealed that the majority of students used *pan masala* (43.0%), followed by *gutka* (20.7%) and tobacco (8.1%). Only 5.7% were daily tobacco chewers while 5.8% reported chewing four days per week [Figure 4].^[10]

A study among 1002 participants in Kathmandu, Chitwan, Nawalparari and Pokhara by an Asian Betel Quid Consortium of South and East Asia in 2009-10 found that of 664 males, 43.6% and of 338 females, 34.9% were current chewers of betel quid.^[3] Only a small proportion (less than one-third among males and one-fourth among females) were tobacco chewers. The majority of the current tobacco chewers were practicing multiple habits (smoking and drinking) [Figure 5].

Health impact

There is no information about the incidence or pattern of tobacco-related cancers in Nepal. However, a hospital-based study among 957 cancer patients in Pokhara (2003-05) revealed that 48% of all cancers among males and 28% among females were related to tobacco use. Cancer of larynx was 9.8% among males and 2% among females while cancer of the tongue was 6.8% among males and 2.6% among females.^[13]

A hospital-based study in Nepal revealed that high consumption of chewing betel quid is associated with oral carcinoma.^[5] In one multicentric study, participants from Nepal endorsed tolerance and withdrawal to the betel quid dependence, and found that dependency was linked to age, gender, schooling years, drinking, smoking, tobacco-added betel quid use and environmental accessibility of betel quid.^[14]

According to the Asian Betel Quid Consortium study (2009-10) in Kathmandu, Chitwan, Nawalparari and Pokhara among 1002 participants, the prevalence of

oral leukoplakia among betel quid chewers was 4.7 times higher than in non-chewers.^[3] A higher prevalence of oral pre-malignant disorders (OPD) was observed among abusers of betel quid chewing than non-abusers in Nepal.^[15] The betel quid dependent users had a higher pre-neoplastic risk than non-dependent betel quid users.^[14]

Economic Impact of smokeless tobacco use in Nepal

Smokeless tobacco products are imported mainly from India. However, unlicensed local SLT producers have been mushrooming in the country and such establishments are largely in the unorganized sector. A study on the economics of tobacco in Nepal (2003) reported a substantial increase in import of chewing tobacco products (*khaini*, *gutka*, *zarda*) over the years.^[16]

Since most of the impact studies are related to smoking, and information on SLT use and its impact is unavailable, there is a need to carry out studies on the economic and health impact of SLT use in Nepal.

Policy intervention

Tobacco control and regulation act (2011)

The Tobacco Control and Regulation Act (2011) has been enforced since 7 August 2011 in Nepal.^[17] According to the Act, use of any tobacco products are prohibited in all public places such as offices, educational institutions, public vehicles, child care homes, cinemas, pool sides, shopping arcades, etc. The Act prohibits any kind of promotion, advertisement and sponsorship to promote both smokeless and smoking forms of tobacco. The regulation also mandates the use of pictorial graphics and textual warnings covering 75% of the total area of tobacco packets. The sale of any form of tobacco to children under 18 years and pregnant women is prohibited.

Challenges of implementing the Act and regulations

There has been initial improvement in tobacco control with the enactment of legislation. However, there are

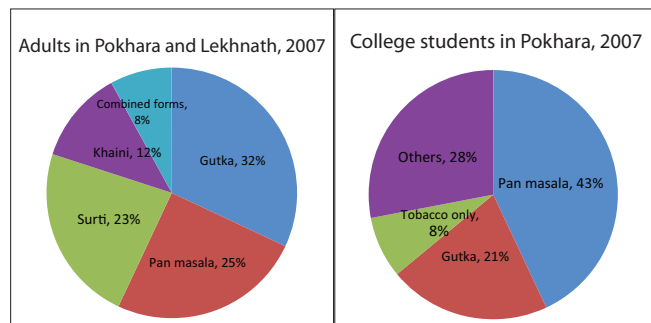


Figure 4: Proportion of SLT products among current tobacco chewers

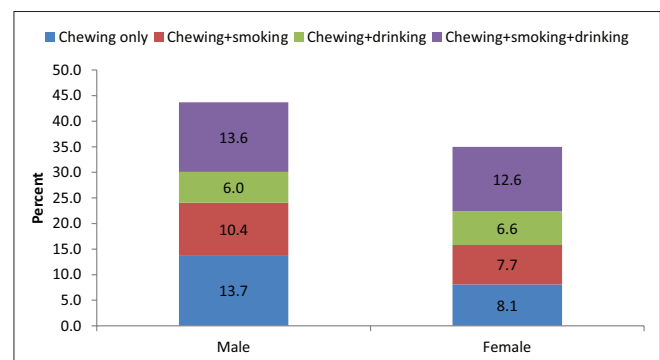


Figure 5: Sub-national prevalence of chewing only and combined users in Nepal by gender^[3]

many challenges to maintain the momentum when it comes to implementation of the Act.^[1] There is a low level of awareness among people regarding the Act and regulations. The monitoring mechanism and roles of responsible institutions have not been clearly defined in the Act, thus limiting multisectoral collaboration and efforts. Conducting awareness programmes and monitoring in rural Nepal is equally difficult because of physical barriers. There is a different level of commitment and capacity in sectors other than health. Implementation of the Act is further thwarted by the tobacco industry challenging the different provisions of the Act and regulations in the Supreme Court, where the verdict is awaited.

Conclusion

The prevalence of smokeless tobacco use is high in Nepal, especially among males and disadvantaged groups. Most SLT users have multiple habits of tobacco chewing, smoking and drinking. Various SLT products are used and are easily available throughout the country. SLT products are imported mainly from India and manufactured in the unorganized sector. However, there is little information regarding the health and economic impact of SLT use in Nepal.

Although the Tobacco Control Act 2011 has been enacted, which provides for SLT control, its enforcement poses a huge challenge. Multisectoral action is at a minimal level. To develop the capacity of sectors other than health is of paramount importance to achieve a high level of success in smokeless tobacco control in Nepal.

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