

Smokeless Tobacco Addiction in the North Eastern Region Specially Nagaland & Homoeopathic Management - A Review Article

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Abstract: *Every civilization known to us about the use of mind-altering substances. The substances can be used for medicinal, recreational, religious and social purposes. Each community develops its own set of parameters regarding the norms and practices in order to control the use and / abuse of these substances. However, in North East India region, there has been major social changes, which have created cultural variation, breakdown and disruptions for norms & parameters. The socio-cultural, economic and historical factors are the leading factors for the emergence of the problem of different addictions like smokeless tobacco addiction, alcoholism, drug addiction in this region. Among these the reason for the increase in smokeless tobacco addiction in this region is multiplex. First the irresponsible life style of the youths of this region, secondly the surrogate advertisement, thirdly the slack law enforcement. The spread of western culture among the tribal population of the North east region specially Nagaland may also be held responsible for this alarming rise of smokeless tobacco (SLT) addiction. There is widespread morbidity & mortality related to SLT use but SLT has not yet received attention as it deserves a public health problem. Homoeopathy system is being widely used as preferred way of treatment for preventive and curative purpose for the patients suffering ill effects of smokeless tobacco addiction & its consequences. This review aims to describe literature available in respect of smokeless tobacco addiction & the approach of Homoeopathy in it by searching various databases electronically. The beneficial effect of Homoeopathic medicines in the bad effects of smokeless tobacco addiction & its consequences are described by various stalwarts in different Homoeopathic literature. Homoeopathic treatment should be given on the basis of individualization.*

Keywords: Smokeless tobacco, Addiction, Global adult tobacco survey, Homoeopathy

1. Introduction and Background

Tobacco consumption is the single most readily preventable cause of death in the world. The negative impacts of tobacco use on the human body are well established. It increases the risks for cancers, particularly the lung, and for heart disease, stroke, chronic obstructive pulmonary disease. Smokeless tobacco is consumed without burning the product and can be used orally or nasally. [1]

Tobacco use in any form is more popular in lower socioeconomic groups. Oral smokeless tobacco products are placed in the mouth, cheek or lip and sucked (dipped) or chewed. Chewing products are kept all day and sometimes even all night in the buccal sulcus or pouch colouring the mouth in red. Tobacco is deadly in any form either be smoking or smokeless; scientific evidences have proved that tobacco leads to disease, disability and death. Tobacco users look like older and die early than people who do not use tobacco. Tobacco use in the society has symbolic aspects that must be explored in terms of the individual's lifestyle, self-image and social relationships. Tobacco use, though perceived as an individual habit, often acquires a ritualistic character involving group behaviour. The rules are a little different for smokeless tobacco, perhaps because it is relatively odourless and less perceptible, less stigmatized for women and easier to conceal. The advantage of pan masala and other similar products as readily edible powder, sold in conveniently sized sachets, has made it especially easy for tobacco use.

Youngsters and women became habituated to consuming pan masala or similar other tobacco products produced in sachets. Among the youngsters, offering pan masala/pan is accepted as implying hospitality. The availability of tobacco products in sachets such as gutkha, shikar etc without restrictions has also made it easier to chew tobacco without attracting social disapproval.

North Eastern Region, NER (Northeast India) is the easternmost region of India. Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura are eight states located in the North East of the country and command special importance in India, not only because of their location but also their cultural and historical uniqueness. The landscape, the range of communities and geographical and ecological diversity make these states quite different from other parts of the country. They are known as seven siblings and referred to as 'seven sisters'. Among this Nagaland, a predominantly tribal state on the eastern border, is mostly hilly and enjoys the reputation of being a home to Nagas, a brave group of people in the region. [2]

Different historical, socio-cultural, economic factors along with life style disorders are the key factors for development of the smokeless tobacco addiction in this region. Apart from them, easy availability of edible tobacco sachets at affordable price, Surrogate advertisements gaining the popularity of smokeless tobacco. This is now become a growing in North Eastern Region sp. Nagaland.



Figure 1



Figure 2

The different marketing strategies of the tobacco industry, weak implication of tobacco control policies, consistent affordability and partial knowledge about the health risks of tobacco are all factors that are leading to the higher use of SLT in the region.

2. Historical and Sociocultural Overview of Smokeless Tobacco (SLT)

Originating in the Americas, tobacco came to India through Portuguese traders in the early 1600s. Tobacco was introduced first among the nobility and soon became popular among the common people. For millennia, betel quid (pan) chewing was a socially accepted practice and a part of culture and religious customs. Soon after tobacco arrived in India, it was added as an ingredient in betel quid, and this combination is still widely used. Tobacco has been an important cash crop since the early 1600s and an important item of trade both domestically and internationally. New SLT products containing areca nut were introduced in the early 1970s (pan masala with tobacco, gutka, mawa, etc.); some of these products are vendor made and others industrially made. With vigorous marketing these products soon became very popular. [3]

Definitions

- Tobacco products – According to the Food and Drug Administration (FDA), the term ‘tobacco product’ means “any product made or derived from tobacco that is intended for human consumption, including any component, part, or accessory of a tobacco product (except for raw materials other than tobacco used in manufacturing a component, part, or accessory of a tobacco product)”. [4]
- Tobacco residue – Tobacco residue is the particulate matter that results from the combustion of any tobacco product. This is also known as third hand smoke. This residue lingers in the air and collects on walls, clothing, etc where people may then come into contact with it and be contaminated. Tobacco residue also includes the liquid resulting from smokeless tobacco use. This liquid is considered a bio hazardous waste product. [4]

- Smokeless tobacco product - Tobacco products that are used by means other than smoking such as chewing, sniffing or placing between the teeth and gum. Examples include chewing tobacco, dipping tobacco, snuff, snus, gutkha and dissolvable tobacco products. [5]

Categorization of Tobacco Consumption:

Tobacco products are generally categorized as [6]

- 1) Smoking tobacco (Combustible) - tobacco that is smoked
- 2) Smokeless Tobacco (Non-combustible) - various forms of chewing tobacco and snuff.

Smoking Tobacco (Combustible) - Tobacco smoking is the act of burning dried or cured leaves of the tobacco plant and inhaling the smoke. Combustion releases biochemically active compounds in tobacco, such as nicotine and Tobacco-specific nitrosamines (TSNAs) and allows them to be absorbed through the lungs. The followings are included in this variety:

- a) Manufactured Cigarettes
- b) Cigars
- c) Pipes and Water Pipes
- d) Bidi
- e) Roll your own (RYW)
- f) Kreteks

Smokeless Tobacco (Non-Combustible)- Smokeless tobacco is usually consumed orally or nasally, without burning or combustion. There are two main types of smokeless tobacco: chewing and snuff tobacco.

- a) **Chewing Tobacco (Oral)** - Oral smokeless tobacco products are placed in the mouth, cheek, or inner lip and sucked (dipped) or chewed. Tobacco pastes or powders are similarly used, placed on the gums or teeth. Sometimes referred to as “spit tobacco” because users spit out the built-up tobacco juices and saliva. There are many varieties of smokeless tobacco including plug, loose-leaf, chimo, toombak, gutkha, and twist. Pan masala or betel quid consists of tobacco, areca nuts (Areca catechu), slaked lime (calcium hydroxide), sweeteners, and flavouring agents wrapped in a betel leaf (Piper betel). There are endless varieties of pan masala, including zarda, mishri etc.
- b) **Moist Snuff** - Moist snuff is a small amount of ground tobacco held in the mouth between the cheek and gum. Manufacturers making the pre-packaging moist snuff into small paper or cloth packets to make the product more convenient. Other moist snuff products are known as khaini, snus, nass, or naswa.
- c) **Dry Snuff**- Dry snuff is powdered tobacco that is inhaled through the nose and absorbed through the nasal mucosa or taken orally.

Combustible Tobacco (Smoked)

Manufactured Cigarettes



Figure 3



Figure 4

whether inhaled, sniffed, sucked, or chewed; whether some of the harmful ingredients are reduced; or whether it is mixed with other ingredients. [6]

Global Adult Tobacco Survey (GATS)

It is a global standard for systematically monitoring adult tobacco use (smoking and smokeless) and tracking key tobacco control indicators. GATS is a house hold survey of 1st round was conducted June 2009 and January 2010 and 2nd round was conducted Aug 2016 to Feb 2017. A multistage sample design was used for both rounds of GATS. [8]

Smokeless Tobacco



Figure 5



Figure 6

a) GATS 2 [8]

In Nagaland a total of 792 males and 803 females were interviewed during Sep - Oct 2016.

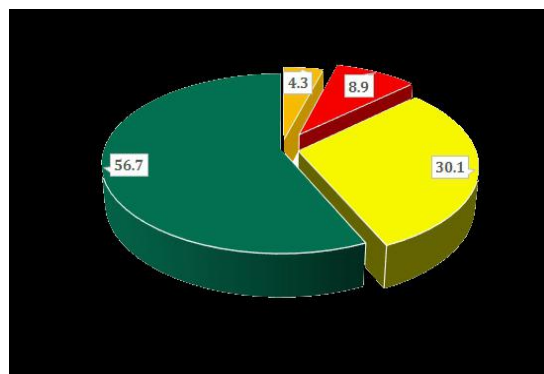


Figure 11

Percentage distribution of adults by tobacco use, Nagaland 2016- 17 :4.3% - Only smokers, 8.9% - use both type of tobacco, 30.1% - only SLT, 56.7% - Non users

Oral Use



Figure 7



Figure 8

Nasal use (SNUFF)



Figure 9



Figure 10

Association Between Smokeless Tobacco Use and Cigarette Smoking

The use of smokeless tobacco or cigarettes are both associated with nicotine deliver. Some observations suggest that certain smokeless tobacco products may serve as an effective method to quit smoking. Sales of these products are increasing at a faster rate than cigarettes. The use of smokeless tobacco is being promoted as safer than cigarette smoking and as a method to quit smoking. There is no evidence that smokeless tobacco is an effective method of smoking cessation.[7] There is no safe way to use tobacco—

GATS 2 Highlights of Nagaland 2016 – 17 [8]

- 1) 25% of men, 0.5% of women and 13.2% of all adults currently smoke tobacco.
- 2) 46.0% of men, 31.5% of women and 39% of all adults currently use smokeless tobacco.
- 3) 54.1% of men, 31.7% of women and 43.3% of all adults either smoke tobacco and/ or use smokeless tobacco.
- 4) From GATS 1 to GATS 2, there has been a significant decrease in the prevalence of smoking by 18.3 percentage points and smokeless tobacco use by 6.3 percentage points. The prevalence of any tobacco use has decreased significantly from 56.8% in GATS 1 to 43.3% in GATS 2.
- 5) Pan masala with tobacco and betel quid with tobacco are the most commonly used tobacco products. 21.1% adults use pan masala with tobacco and 17.5% use betel quid with tobacco.
- 6) The mean age at initiation of tobacco use has decreased from 18.5 years in GATS 1 to 17.2 years in GATS 2.
- 7) 49.0% of smokers were advised by a health care provider to quit smoking and 42.2% of smokeless tobacco users were advised by a health care provider to quit use of smokeless tobacco.
- 8) 27.8% of smokeless tobacco users thought of quitting smokeless tobacco use because of warning label.

Determinants of Smokeless Tobacco Use

As per Global Adult Tobacco Survey (GATS) reports, tobacco use was reduced by six per cent points from 2009-2010 to 2016-2017. The tobacco use was reduced from 34.6 to 28.6 per cent and that of smokeless tobacco (SLT) from 25.9 to 21.4 per cent in India from 2009-2010 to 2016-2017. About 28.6 per cent of adults aged 15 and above use any kind of tobacco that means every 5th adult uses smokeless tobacco (SLT) and 75 per cent of these adults resides in rural areas. The average expenditure incurred by these SLT consumers was ₹12.8, and it was almost doubled since the 2009-2010 GATS. [9]

b) Age, Gender Variation

The use of SLT is widespread in both males and females in India, the common forms consumed by men are khaini and gutkha. Whereas females use betel quid with tobacco followed by oral application of tobacco and khaini. In India, almost 50 per cent users use SLT followed by smoking and dual use of tobacco. [9]

Women and Smokeless Tobacco: Special Considerations

Smoking by women in India is still socially unacceptable but SLT use is common. Easy availability and low cost of SLT are key factors promoting SLT use by women. The prevalence of tobacco consumption in all forms increases linearly with age in women. SLT, as well as tobacco dual use, is highest in the age group of 25-44 yr. [9]

Socio-Economic Status

The prevalence of smoking and SLT usage was found to be higher in medium wealth quintiles groups in all Regions of SEAR. The SLT consumption is higher in North and North-East region of India. SLT use in India across the socio-economic status was as follows: poorest 30.9, poor 22.9, medium 36.4, rich 16.6 and richest 10.0 per cent. [9]

Non Smoke Tobacco Contains

- Nicotine- a highly addictive substance. It is the main ingredient in smokeless tobacco
- Nitrosamines
- Cadmium
- Formaldehyde
- Lime
- Menthol
- Lead
- Arsenic

Effects of Exposure To Nicotine

More than 28 chemicals have been extracted from SLT which are carcinogens. [10] In case of SLT, nicotine is directly absorbed into the body through the mucous membranes in the mouth or nose. Furthermore, the levels of nicotine in blood are similar in case of SLT users as well as smokers, and it remains in the bloodstream for longer duration. With repeated exposure to nicotine, tolerance and dependence develop which are likely mediated physiologically by regulation of the nicotinic acetylcholine receptor. Abstinence leads to symptoms of lethargy, irritability, restlessness, inability to concentrate, and dysphoria.

Adverse Health Effects of Smokeless Tobacco Use

a) Short-Term Health Effects

- Bad breath
- Strained teeth



Figure 12

- Ulcer



Figure 13

- Cavities
- Gingivitis
- Unhealthy eating habits
- High Blood pressure
- Mouth sores
- Dizziness and nausea
- Ruin taste and smell
- Addiction - Nicotine dependence

c) Long-Term Health Effects

- Potentially malignant lesions, characterized by white/red patches on cheeks/gums/tongue or inability to open the mouth. With the practice of chewing and dipping tobacco and its irritating juices are left in contact with gums, cheeks and/or lips for prolonged periods of time. This can result in a pre-cancerous condition called leukoplakia.
- Heart disease & stroke
- Tooth and bone loss

SLT related to following CANCER

- Lung
- Oral
- Oesophagus
- Stomach
- Breast
- Adrenal gland
- Bladder
- Sinonasal
- Liver
- Pancreas
- Cervix
- Kidney
- Larynx
- Head & Neck



Figure 14: Lung cancer



Figure 15: Oral cancer



Figure 16: Stomach cancer

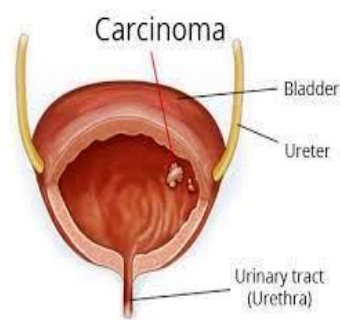


Figure 17: Bladder Cancer

d) Tobacco related other health hazards diseases

- Peripheral vascular diseases
- Respiratory ailments - Chronic obstructive pulmonary disease (COPD)
- Brain shrinkage & reduce memory
- Alzheimer's disease
- Cataract
- Tobacco use by pregnant women leads to IUGR, Spontaneous abortion, still birth, & LBW babies

e) Danger signs

If one use smokeless tobacco, or have in the past, one should be on the lookout for some of these early signs of oral cancer: A lump or white patch, a prolonged sore throat, a sore that does not heal, difficulty in chewing, feeling of something in the throat, restricted movement of the tongue or jaws.

Step in Tobacco Control

Following initiatives steps should be taken at National, State and District levels through National Tobacco Control Programme to combat the ill effect of smokeless tobacco addiction:

- Health education and counselling
- Changing cultural norms associated with smokeless tobacco
- Strict implementation of anti-tobacco laws in the community and work places
- Intensive mass media campaigns to inform people about the harmful health impact of smokeless tobacco use
- Providing cessation support are important measures for preventing initiation and continuation of tobacco use.
- Public awareness on health impact of SLT use
- Intervention through personal and community
- Interventions for cancer prevention programs in the community, village, town

- WHO has developed MPOWER, a package of selected demand reduction measures contained in the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) that includes: [11]
 mpower – **M**onitor tobacco use & prevention policies
Protect people from tobacco use
Offer help to quit tobacco use
Warn about the dangers of tobacco
Enforces bans on tobacco advertising, promotion & sponsorship
Raise taxes on tobacco

Programme Recommendations

Targeted Interventions [3]

- Targeting interventions toward SLT use among women, youth, School children, teachers, blue collar workers and rural populations
- Counselling against SLT use should be incorporated in women's routine prenatal and antenatal health care.

Public Awareness Campaigns [3]

Campaigns should work to raise public awareness of the economic, social, and environmental impacts of SLT use, in addition to its health consequences.

Role of Multiple Stake Holders

Government Organization

- 1) Formulations of policies & laws for tobacco control
- 2) Implementation of policies & programmes
- 3) Raising awareness about the law among the masses
- 4) Monitoring Implementation of Tobacco control laws

Non govt Organization

- 1) Awareness raising
- 2) Reporting violations

- 3) Collaborate & partner with the govt for enforcement and implementation of laws & programs
- 4) Media level: Awareness raising, sensitization to the general population
- 5) Community level :Comply with the law, refrain from consuming tobacco product, make efforts for quitting tobacco use

Tobacco Control Law

To protect people from the dangerous health effects to tobacco, the govt. of India enacted a national tobacco control act named Cigarette and Other Tobacco Product act 2003(COTPA) [12]

COTPA Provisions of the Act: [12]

- a) Prohibition on smoking in a public place
- b) Prohibition on advertisements of cigarettes & other tobacco products
- c) Prohibition on sell of cigarettes or other tobacco products to a person below the age of 18 yrs & in an area within a radius of 100 yards of any educational institutional
- d) Prohibition on the sale of cigarettes & other tobacco products without specified health warnings.

Management for Smokeless Tobacco Addiction

General Management

Measures to be taken for quitting SLT [12]

- Determination
- Setting a quit date & stick to it
- Discard any tobacco products
- Telling family about quitting, ask them to help by encouraging you
- Indentify the situation that make you involved & avoid them like seeing a tobacco shop/people using tobacco

Homoeopathic Intervention

The system of homoeopathic medicine has a promising role to offer for the Management of smokeless Tobacco addiction. It should be emphasized that "Homoeopathy treats patient who is diseased and not the disease, which the patient has" The basic approach in homoeopathy is to evaluate the signs and symptoms of the patient in its whole extent.

The Homoeopathic medicines are selected considering presenting complaints, constitution, past & family history, treatment history, accessory circumstances, generalities (physical & mental). After considering the above factors simillimum is selected and administered in different potencies according to the case. There is no single specific remedy for the cases of smokeless Tobacco addiction. The exact treatment is determined only on in-depth evaluation of individual case.

Furthermore, patient's history of past diseases, history of family diseases must be considered to know the miasmatic background of the patient. In a situation, where anybody damage has progressed too far, homoeopathy prevents further progress of disease and freezes deterioration of the

condition in future. If administered in early stage it prevents complications also.

Some Homeopathic remedies that are commonly used in the treatment or management of smokeless Tobacco addiction are given below with their indications. [13] [14]

Arsenic album

- Suited to lean , thin , debilitated, waxy look of the skin
- Arsenic should be thought of in ailments from bad effects of tobacco chewing
- Very fastidious. Wants every thing neat, clean and in order
- Chilly patient. there is internal chilliness, so the patient craves heat except in head
- Mentally restless but physically to weak to move. Can not rest in any place. Changes places continually
- Anxious, fear of death
- Burning pain relief by heat except in head
- Great prostration is persistent present. sinking of strength out of proportion to a degree of illness
- Symptoms generally worse from 1-2 pm, 12 -2 am
- Great thirst for cold water, drinks often but little at a time, eat seldom but much
- Irritable heart in smokers and tobacco chewers

Nux vom

- One of the best remedies with which to commence treatment of cases that have been drugged by mixtures but only symptoms correspond
- Adapted to thin, irritable, careful, zealous person. Dispose to be quarrelsome, spiteful, malicious, ardent character, nervous, prone to indigestion
- For all consequences & result arising from so called modern life
- Ailments from High living, so called modern life, coffee, tobacco, alcohol, highly spicy seasoned food , sedentary habits, patent medicines
- All consequent upon the modern so called civilized life & high living
- Zealous fiery temperament
- Frequent & ineffectual desire for stool & urine

Ipecac

- The principal feature is persistent nausea and vomiting, which form the chief guiding symptoms
- It is suited in all diseases with constant and continual nausea
- Suited to stout person, chilly patient, haemorrhagic diathesis. Bright red haemorrhage from all orifices of the body
- Most of acute complaints commence with nausea & vomiting. Nausea constant, continuous & persistent with or without vomiting. Nausea not relieved by vomiting
- Nausea with profuse saliva, Vomiting of white glairy, glair mucus in large quantities, with out relief, the primary effects of tobacco
- Thirstlessness. clean tongue with much saliva

Ignatia

- Suited to nervous temperament, very sensitive, easily excited, quick in perception, & rapid in execution
- For annoying hiccup from tobacco chewing
- Mentally the emotional element is uppermost and co-ordination of function is interfered with. It is one of the chief remedies for hysteria
- It is remedy of great contradiction
- Long involuntary signing
- Hypersensitiveness to all external impressions like pain, touch, odour, noise
- Broods in solitude over imaginary troubles. Moody. Desire to be alone
- Ill effects from bad news, vexation, with reserved displeasure, suppressed mental suffering, shame, mortification, anger or disappointed love. Consolation agg. all troubles
- Person mentally & physically exhausted by long concentrated grief
- All symptoms are caused and aggravated by tobacco. There is utter inability to tolerate Tobacco in any form. Cannot bear tobacco

Phosphorus

- Suited for tall, slender person with narrow chest, good & beautiful to look, delicate eye lash
- Though a chilly patient, its head & stomach crave cold, cold food, cold drinks, cold application
- Tubercular diathesis- Susceptible to cold, great liability to catch cold, enlarged neck gland, family history may have tuberculosis
- Wounds bleed very much, even if small, Haemorrhagic diathesis - small wound bleed profusely. Profuse, watery, bright red blood which is non coagulable.
- Craving cold things - cold food & drink, juicy refresh thing, ice, ice cream
- Over sensitiveness
- Ailments from tobacco, strong odour, thunder storm

Tabacum

- The nausea, giddiness, death like pallor, vomiting, icy coldness, and sweat, intermittent pulse are most characteristics
 - Child wants abdomen uncovered relieves nausea & vomiting
 - Vertigo on opening eyes, sick headache with deathly nausea
 - Incessant nausea, worse smell of tobacco smoke
- Some other commonly used medicines are sepia, Lycopodium, Geslemium, Clematis, plantago etc.

3. Conclusion

In North eastern region specially Nagaland there is a high burden of smokeless tobacco use in terms of its availability in different forms and magnitude. High prevalence of tobacco use is found in poor, uneducated persons. The socio-economic factors are important to be stressed on as the people with low socio-economic groups, also lack the resources required to combat the ill effects or morbidities associated with the smokeless tobacco consumption. India bears the highest burden of oral cancer globally, due to high

prevalence of smokeless tobacco use. For the management we should have a clear approach to take all these cases. Management of the cases is the prime job. Beside this we have good source of Homoeopathic medicines those are repeated used with good results. Homoeopathic Materia Medica and Repertory can help us for final selection. But Totality of symptoms must be considered for each and every cases.

4. Financial Support and Sponsorship

Nil

5. Conflicts of Interest

None declared.

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