

Factors contributing to use of Smokeless Tobacco in state of Uttar Pradesh, India

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FACTORS CONTRIBUTING TO USE OF SMOKELESS TOBACCO IN STATE OF UTTAR PRADESH, INDIA

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by

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Declaration:

Where other people's work has been used (either from a printed source, internet or any other source) this has been carefully acknowledged and referenced in accordance with departmental requirements.

The thesis Factors contributing to use of Smokeless Tobacco in state of Uttar Pradesh, India is my own work.

Signature:



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Table of Contents

Acknowledgements	
Glossary	4
Preface	5
Chapter One : Introduction and Background Information	7
Introduction	9
Background Information on India and Uttar Pradesh	9
WHO Framework Convention on Tobacco Control	13
Laws against Smokeless Tobacco in India	15
Tax Structure of Smokeless Tobacco in India	16
Chapter 2. Problem statement, Objectives and Framework	17
2.1. Problem Analysis	17
2.2. Problem Statement	20
2.3. Methodology	21
2.5. Methods	22
Chapter 3. Contributing factors to Smokeless Tobacco Use in India	27
3.2. Vector	35
Chapter Four : Discussion and Conclusion	36
Chapter 5 : Recommendations	41
References	45

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Glossary

1 Dependence- Substance dependence also known as drug dependence is an adaptive state that develops from repeated drug administration, and which results in withdrawal upon cessation of drug use

2 Multisectorial- Concerning or involving more than one sector of an industry, economy, etc.

3 Exposure- The amount of a factor to which a group or individual was exposed; in contrast to the dosage, the amount that enters or interacts with the organism.

4 Carcinogen- any substance or agent that tends to produce a cancer.

5 leukoplakia-an abnormal condition in which thickened white patches of epithelium occur on the mucous membranes (as of the mouth or vulva)

6 submucinous fibrosis-

Oral submucous fibrosis (OSMF or OSF) is a chronic, complex, premalignant (1% transformation risk) lesion of the oral cavity, characterized by juxta-epithelial inflammatory reaction and progressive fibrosis of the submucosal tissues (the lamina propria and deeper connective tissues). As the disease progresses, the jaws become rigid to the point that the person is unable to open the mouth.

7 Drug addiction- is defined as compulsive, out-of-control drug use, despite negative consequences.

8 Cognitive Dissonance-

psychological conflict resulting from incongruous beliefs and attitudes held simultaneously

9 surrogate advertisement- Surrogate advertising is a form of advertising which is used to promote banned products, like cigarettes and alcohol, in the disguise of another product.

10 Quitline- Quitline is a telephone helpline offering treatment for addiction

and behavior change/issues. Presently most quitlines treat tobacco or alcohol addiction. Quitlines are treatment centres that offer advanced treatment and should not be confused with call centres.

11 abstinence-

A period of being quit, i.e. stopping the use of cigarettes or other tobacco products. May be defined in various ways

12 withdrawal- Drug withdrawal is the group of symptoms that occur upon the abrupt discontinuation or decrease in intake of medications or recreational drugs.

Preface

Smokeless tobacco use and ill effects have a very high impact on oral hygiene. I came across the topic of smokeless tobacco during my graduate degree in dental surgery. I became aware of the widespread use of SLT in India while attending clinics where I came across large number of smokeless tobacco users. During these interactions, I tried to explore the main factors that influenced them to use tobacco and also their knowledge regarding it.

In past years I have been working with a non government organization called SOCH to spread awareness regarding smokeless tobacco and its impact. My work has been closely related to counselling, observing behaviours and assessment of factors influencing tobacco use in the population.

I believe that if we understand the factors influencing smokeless tobacco use, interventions targeting these factors can be designed. By this work, I aim to indulge more deeply into exploring the various factors that impact tobacco use and hope my thesis can inform the current intervention programs and policies related to smokeless tobacco.

This thesis entails a detailed literature review regarding the different factors that contribute to use of smokeless tobacco in Uttar Pradesh. The thesis uses an epidemiological framework to analyse the different factors that could contribute to use of SLT in India. The purpose of this study is to inform the current tobacco control policies and help in formulating more effective SLT control laws.

Chapter 1

1.1. Introduction

Tobacco products which do not need to be burned and can be consumed without combustion or prolysis are defined as smokeless tobacco (SLT) products [2]. The Portuguese introduced tobacco in India almost 400 years ago during the Mughal era. It quickly became a socio-cultural part in different communities of India [3]. India is currently the second highest consumer of tobacco in the world and is part of South East Asian Region (SEAR).

The use of SLT can lead to cancer and levy high health care costs. It has a severe impact on health like oral cancer, pancreatic cancer, oral mucosal lesions, periodontal diseases, tooth loss and nicotine dependence [4]. It can also increase risk of cardiovascular diseases [5] and also has addictive properties [6]. The serious health impact of SLT makes consumption of SLT an area of concern.

There are large varieties of SLT products in India. These include *gutka* (packaged chew tobacco with slaked lime, powdered tobacco flavourings and other additives),, *betel quid or paan* (betel leaf prepared with areca nut, *mishri* (roasted powdered tobacco used on teeth and gums) chewed loose tobacco lime paste and other flavourings) with loose tobacco, mixed with other ingredients including betel quid and lime (*mawa*), *zarda* and *khaini* and tobacco in tubed paste form [7]

1.2. Background Information on India and Uttar Pradesh

1.2.1. India

India is a lower middle income country. It has a population of 1.3 billion with a growth rate of 1.6 per annum [8]. It is the second most populated country in the world. It contributes to 17.31% population of the world [9].

The culture of India differs from one state to another with some similarities. The Indian culture is a mix of several cultures and has been greatly influenced by the history which is several millenniums old.

There are almost 26 different languages spoken in India [8]. There is inclination towards religion and spirituality. Gender disparity also exists in

the culture of India. For example men are considered to be the authoritative figure and women play the role of homemakers[10].

Population

In 2011 it was reported that males constituted 628.8 billion of the total population while females constituted 591.4 million of the population of India. Youth are defined as those aged 15 to 29 in the national youth policy. This age-group constitutes 27.5% of India's population. The 2011 Census reported 563 million young people in India[9].

The average life expectancy is 67 years at birth in males and 70 years in females [11]. There are a total of 28 states in India, off which Uttar Pradesh is the highest populated state (199 million)[12].

Living Conditions

The density of population is 382 person/sq.km. The female to male ratio is 904 / 1000 males. The census 2011 in India reported that almost 885 million off the total population lives in rural areas. An estimated 106 million population living in rural area is deprived of proper houses and depend mainly on manual labour. A large portion i.e, 36 % of the rural area population is illiterate, which is a very high number.

Religion

The major religions in India are Hinduism, Christianity, Buddhism, Islam, Sikhism and Jainism[8]. Hinduism is the most dominant religion in India accounting for almost 79.80 % of Indians being Hindus.

The second most common religion is Islam which accounts for over 14.23 % of the total population[13]. 2.30 % and 1.72 % odd the total population are Christians and Sikhs respectively.

Literacy rate

In 2011 Census, the literacy rate among males was reported to be 82.14% and 65.46 % in females[13]. A total of 447 million off the 1.2 billion people in India are still illiterate [13].

Health Administration System

India has a government-funded health-care system. States are obliged to implement national policies but still decide their own priorities, so that national policies are implemented by consultation and mutual consent, often with federal government funding.

India does not have an official government policy or guidelines on tobacco dependence treatment, but does have a tobacco control division in the Ministry of Health & Family Welfare, and a National Programme on Tobacco Control which includes treatment, and a government official responsible for treatment[14].



[15]

1.2.2. Uttar Pradesh

Uttar Pradesh is the most populated state of India. Lucknow is the capital city which is also the largest city in the state of Uttar Pradesh. The languages spoken in the Uttar Pradesh state includes Hindi and Urdu. The total number of districts in Uttar Pradesh state are 71 [16].

Population

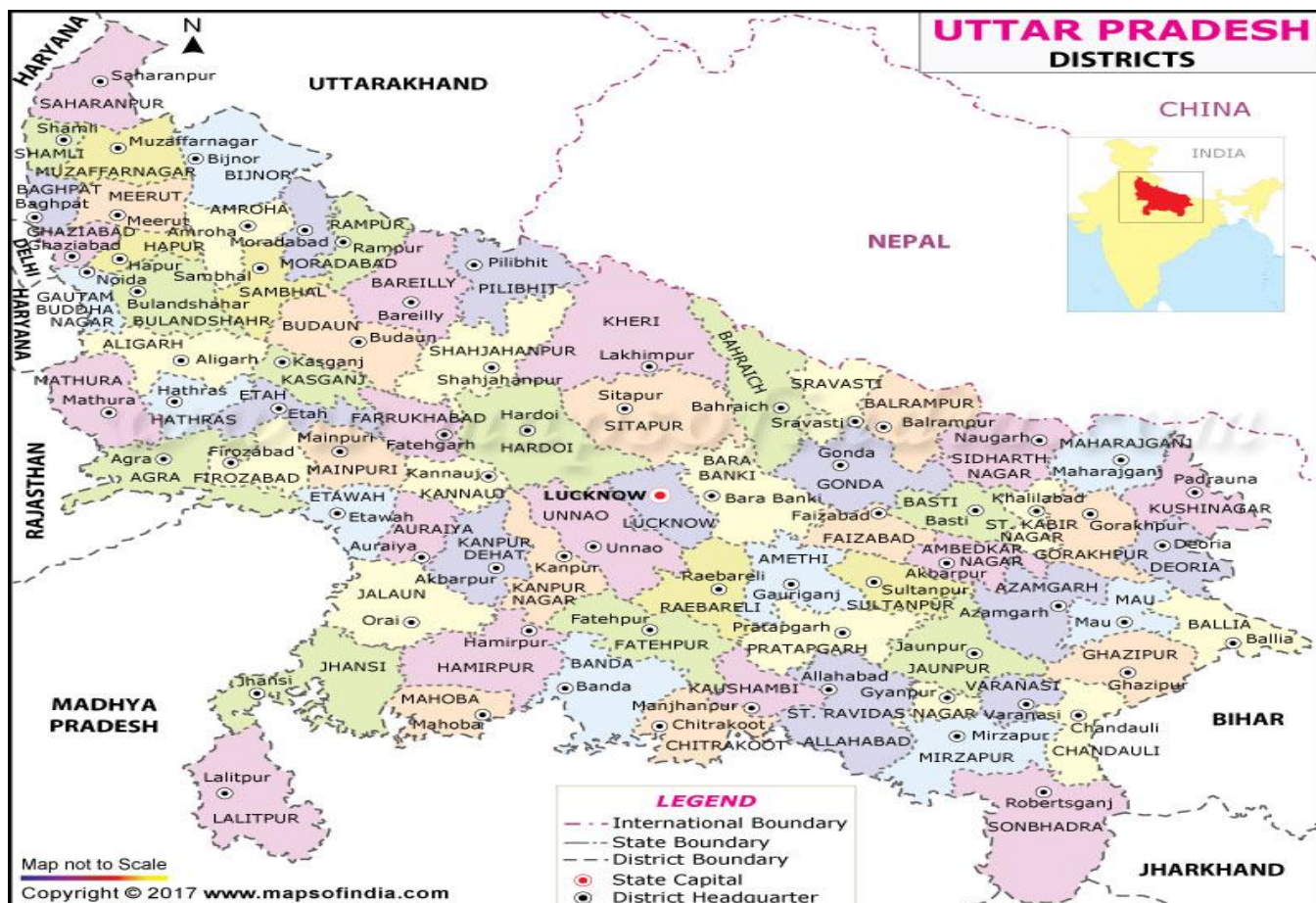
The total population is 199 million of Uttar Pradesh. The total number of males and females are 104 million and 95 million respectively [16]. The population density is reported to be 829/ sq.km. which is much higher than the country's average density. The majority of the population lives in rural areas which is approximately 77.3% of the total population of the state[16].

Religion

The two major religion in Uttar Pradesh are Hinduism and Islam. 79.73 % of the population follow Hinduism i.e., 159 million and Muslims contribute 19% of the total population of Uttar Pradesh which is 38 million [16]

Literacy rate

The literacy rate in Uttar Pradesh was reported to be 77.28% in males while female literacy is at 57.18% in 2011 [16]. This means that a total of 26 million males and 41 million females are uneducated in Uttar Pradesh.



[17]

1.3. WHO Framework Convention on Tobacco Control

WHO Framework Convention on Tobacco Control (FCTC) is a legal global tobacco control instrument which provides direction for tobacco control policy for all countries who have signed the agreement[18]. It was established in response to continuous increase of tobacco consumption on a global level [18]. It has been signed by 168 countries including India [18]. The WHO FCTC aims to protect the future and current generation from devastating effects of tobacco[19].

The Article 4 of WHO FCTC highlights the need to raise public awareness with respect to tobacco and also asks the countries to make a political commitment to establish coordinated responses within their country[19]. It also asks for international cooperation between different countries[19].

The Article 5 of WHO FCTC requires all countries to establish and implement multisectoral tobacco control strategies to reduce consumption of tobacco

and tobacco exposure[19]. It recommends the concerned countries to raise financial resources for implementation of this convention[19].

Articles 6 & 7 are related to price and non price related measures to reduce use of tobacco respectively[19]. The Article 6 encourages levying high taxes on tobacco products which is considered as an effective measure to reduce tobacco use[19]. Article 7 requires effective implementation of non – price measures related to reduction in use of tobacco consumption. This can be done by enforcement of article 8-13 which include reduction in tobacco exposure to public, increasing education, raising public awareness and ban on tobacco advertisement in all forms.

The Article 15 – 17 is about measures to reduce supply of tobacco products. This has been suggested through preventing illegal trade, prohibiting selling of tobacco products to children below 18 years of age and providing viable alternate occupation options to tobacco workers[19].

The Article 18 addresses the harm caused by tobacco use on health of humans and the environment. Under Article 19, the countries who have signed the agreement should consider making new laws and updating existing laws in relation to tobacco[19].

The Article 20 requests to promote research in relation to tobacco and methods to reduce its consumption. The Article 21 requires all parties to submit timely reports on implementation of the Convention to the governing body. The Article 22 calls for international cooperation between all the countries[19].

WHO FCTC introduced MPOWER to ensure implementation of the FCTC. It includes six measures which have been proven effective in controlling tobacco. These measures include a) Monitor tobacco use and prevention policies, b)Protect people from tobacco smoke, c) Offer help to quit tobacco use, d) Warn about the dangers of tobacco, e) Enforce bans on tobacco advertising, promotion and sponsorship, and f) Raise taxes on tobacco.

In 2017, WHO reported the progress of implementation of FCTC through MPOWER[20]. By using the MPOWER, it has been reported that almost 4.7 billion people are protected by at least one of the best practice measures. In respect to SLT, 86% of SLT users are from SEAR region but this report says that this could be an underestimation[20]. There is need to monitor smokeless tobacco products in more detail[20].

1.4. Laws against Smokeless Tobacco in India

There are a number of laws and policies against the use of tobacco in India. SLT focussed laws are yet to be formulated in India. The Cigarettes and other Tobacco Products ACT (COTPA) was formulated at national level which included laws and policies to control tobacco use in 2003 [21]. This Act is meant to be followed by all states and union territories of India.

Under COTPA, following rules were formulated:

1. Prohibition of advertisement of cigarettes and other tobacco products across the country. Under this rule applies to everyone engaged in production or selling of tobacco products [21]. Any promotion or advertisement of tobacco products on walls, hoardings or distribution of leaflets is strictly prohibited. Any individual involved in this will be prosecuted by the law [21].
2. Prohibits sale of cigarette or other tobacco products to a person below the age of eighteen years. Selling of tobacco products within 100 yards of a school institution is also prohibited [21].
3. Selling, importing, distributing and buying of tobacco products without warning label and specified brand was prohibited under this Act [21].
4. The product shall have specified warning in clear and prominent method [21].
5. The warning and details of the content of product shall be in at least two languages including English and India language. The Indian language depends on the area it is being sold to [21].
6. If an officer of police of rank not below than sub inspector or any government officer finds anyone or any company violating the Act can enter and search any building at reasonable time. They can also seize and confiscate any tobacco item if found to be violating the Act [21]. The owner of the package is given opportunity to explain to the law court as to why he/she was distributing, owning or promoting a product which didn't meet the rules[21]. The owner has to pay fine and products can be returned with condition that they will be updated according to rules before being sold.

Other laws that exist against tobacco use are the following :

1. In 1954, the Prevention of Food Adulteration Act (PFA) stated that no food products shall contain nicotine or tobacco [22]. The PFA was

revised in the year 1990 and the statutory warning on SLT products was made mandatory [22].

2. In 1992, the use of tobacco in all dental products was banned. under the Drugs and Cosmetics Act 1940 (Amendment
3. The different states of India including Maharashtra, Goa and Himachal Pradesh have laws prohibiting spitting in any public place, building, public road or public street to maintain sanitation. This is only law directly targeting SLT products.
4. Goa is the only state which has completely banned consumption of SLT products under the Goa Public Health (Amendment) Act, 2005 [3].
5. In addition to the aforementioned policies, use of plastics plastic materials in sachets for storing, packing, or selling gutka, tobacco, and pan masala were banned completely in 2011.
6. Smoking is prohibited in public areas in India under the WHO-Framework Convention on Tobacco Control (WHO-FCTC) but no such law exists for use of SLT. The application and effectiveness of these laws will be later discussed in more detail.

1.5. Tax Structure of Smokeless Tobacco in India

Central excise duty is levied on tobacco products along with specific excise duties according to its weight, length, volume, thickness of each product[23]. For SLT products like *Gutkha*, taxes are levied according to the machine's capacity of making the packets. This was started in 2008, where the excise duty was based according to the number of machines operating in the factory producing *Gutkha*[3].

In addition to base excise duty levied on the SLT product *pan masala*, an additional excise duty called Health NESS is also levied on it. The overall excise duty has increased from 34% in 2004-05 to 60% in 2013-14 which is almost the double[3].

Chapter 2

2.1. Problem Analysis

2.1.1. Use of SLT: A Public Health Concern?

Smokeless Tobacco is used across different regions of the world. The World Health Organization has reported that there are approximately 250 million SLT consumers worldwide. It is important to note that off the 250 million users; 90% of them belong to South East Asian region (SEAR). It has been reported that 38% of men and 27.7 % of women consume SLT in the SEAR in 2012 [24].

The use of SLT in SEA regions continues to grow year after year. In 2009, it was reported that the use of SLT had increased from 28% in men and 12% in women to 33% in men and 18% in women in the period of 2009-10 [22]. There are a total of 163.7 million consumers who use SLT only which double the consumers who are exclusively smokers (42.3 million)[22].

SLT can cause cancer of head, neck, throat and oesophagus regions [25]. It can lead to number of oral diseases like oral leukoplakia, oral submucous fibrosis, smoker's palate which have potential to become cancerous later [25]. Smokeless tobacco induces cancer in regions where it is held in direct contact, such as the cheek or gum[26]. SLT use leads to oral cancers and the incidence of oral cancer is very high in India [22].SLT is also a known risk factor for cardiovascular disease[5].

The addictive properties in SLT products have been found to be similar to cigarette which has been found to have highest addictive property. Vainio and Weiderpass [27] state that the nicotine present in SLT has controlling influence on the use and subjective dependence on SLT seems to be no less than cigarettes.

The large number of users of SLT and its wide ranging impact on health make it a serious public health concern.

2.1.2. Use of SLT in India

India is the only country where the consumers of SLT are three times the consumers of cigarettes [28]. It has been reported that almost a quarter of

a million deaths are caused due to SLT globally [29]. India accounts for 74.3% of these global deaths which is an alarmingly high number [30]. The use of SLT continues to increase by 2-3% per annum in India and it has been estimated that almost 13% of total deaths in India would be caused by SLT[5].

Some forms of tobacco used in India contain high levels of nitrosamines, heavy metals etc [31]. These tobacco specific nitrosamines are the most prevalent strong carcinogens in smokeless tobacco products and are widely believed to play a significant role in causing oral cancer among SLT user [32].

The health burden due caused due to oral cancer very high in India. It is the third most common cancer in India [33]. An association between chewing tobacco (SLT product) and oral cancer has been well established [34]. It has been reported that in India, oral cancer accounts for almost 30-40% of total cancers as opposed to just 2-4% in western countries [34].

The widespread use of SLT in SEAR which includes India needs a thorough assessment of the various factors contributing to the use of SLT. The taxes on SLT remain to be low and support to consumers seeking to quit SLT is not commonly available[35].

It has been established that the use of SLT is widespread in India and it is harmful for the population. Tobacco control activities should take in account local cultural, social and demographic factors for successful implementation [36]. By reviewing the possible factors that contribute to SLT use, the results can inform the current laws and help in formulating effective policies.

The current laws and policies need a more in depth review to find if there are any regionally crafted laws and if individual's perception of SLT is taken into consideration while formulating them. There are various contributing factors to SLT use but it requires a more detailed review to explore them.

2.1.3. Use of SLT in Uttar Pradesh

Uttar Pradesh is reported to be the most populous state of these three with a population of approximately 200 million[12]. The use of SLT use is particularly high in three states of India which are : Uttar Pradesh, Bihar and Maharashtra [7].

In Uttar Pradesh, approximately 45% of men and 8.2% of women in urban areas were reported to be consumers of tobacco in any form as opposed to 51% men and 9.2% women in rural areas[37]. This showed a slight increase in tobacco use in the rural areas of Uttar Pradesh. In terms of SLT, 17% of the population of Uttar Pradesh are consumers of SLT presently. Also, the use of smokeless tobacco has been found to increase with age in both genders in the state of Uttar Pradesh.

The prevalence of SLT in Uttar Pradesh is highest in states of Uttar Pradesh followed by Bihar and Rajasthan. The use of *paan masala* has been found to be the most common SLT product being used leading to oral cancer in Uttar Pradesh[33].

In spite of the wide range of use of SLT in Uttar Pradesh, there are no existing policies which specifically target the people of Uttar Pradesh. It is important to find out why this specific region has larger population consuming SLT compared to other states.

2.1.4. Laws and Policies against SLT in India

The laws and policies in India regarding SLT have been found to be inadequate and ineffective [38, 39]. Khan et.al, (2014) identifies various barriers that inhibit effective control of smokeless tobacco. The authors believe that lack of awareness campaigns, lower taxes, and ineffective coordination among government departments play pivotal roles. The taxes levied on smokeless tobacco are much less compared to cigarettes. WHO FCTC considers tax to be one of the major factors affecting the use of SLT and low taxes on SLT are a matter of concern.

The Cigarettes and Other Tobacco Products Bill 2001, disallows selling of tobacco products to minors and also details of the content have to be specified on the product. However, Siddiqi, et.al., (2015) points out that many smokeless tobacco products are sold without warnings and details of the manufacturers. It is important to note that even though WHO has reported India to be one of the few countries to increase warning labels to 85%; the extent of enforcement of this law still needs to be assessed. Many of the SLT products are found to be counterfeit.

As mentioned earlier, India has been able to implement only two measures out of the six measures of MPOWER effectively. Also, the effective implementation of these two measures (smoking cessation services and

warning labels) needs to be further evaluated. Thus, there is dire need of effective laws and more effective implementation of the laws. In spite of the widespread use of SLT products across India, SLT specific laws and policies remain to be absent. The need for SLT focused laws is essential owing to the widespread prevalence of SLT use. Also, Uttar Pradesh does not have any laws specific to its people in spite of being the state with highest consumption of SLT.

1.1. Socio-economic status

The socio-economic status of population greatly influences health [40]. This includes level of education, employment status and income level [41]. It has been found that the use of tobacco is much more common among the less educated and less privileged sections of most societies [42]. This can often be attributed to less knowledge and awareness among the uneducated people [25].

Among the people belonging to low socio-economic status, expenditure on tobacco use more than often replaces expenditure on other essential items and services for the family [25]. As a result, these families may suffer serious morbidity and mortality due to tobacco use which degrades their social economic status further [25].

The tobacco use is relatively lower among males and females in the unorganized sector, such as the self-employed, compared to the people in the organized sector, i.e., government and non-government employees [25].

The poor people have been found to start using tobacco earlier in their life [25]. Poverty in rural areas of Uttar Pradesh is higher than the urban areas. It has been reported that 79 % of the total population of Uttar Pradesh stays in rural areas.

The implementation of the control laws has been found to be slow in areas with low social-economic status [41]. The social economic status of people of Uttar Pradesh is an important factor which can influence the use of SLT among the people of Uttar Pradesh.

2.2. Problem Statement

The widespread use of SLT in Uttar Pradesh with no specific laws for the state along with the poor socioeconomic status clearly shows the poor state

of Uttar Pradesh. The use of SLT poses a serious health concern and it becomes essential to decrease the health burden caused by SLT related disease.

The state of Uttar Pradesh being the most densely populated state has a large population living in rural areas and also illiterate. The growth rate 2001-2011 was 20% and the projected population of Uttar Pradesh by 2018 is 221 million. The growing population is a matter of concern and is a factor which needs to be taken into consideration while formulation tobacco control policies.

A comprehensive literature review on the various contributing factors to SLT use in Uttar Pradesh can address the existing gaps in literature and inform the tobacco control policies.

The main objective of this study is:

What are the different factors that contribute to the use of SLT in Uttar Pradesh?

Research Objectives:

1. To explore the perception and knowledge of the population of Uttar Pradesh about use of SLT.
2. To understand the current laws and policies regarding SLT in Uttar Pradesh.
3. To explore the role of advertisement and product packaging in influencing use of SLT
4. To identify evidence informed strategies to address the high use of SLT in Uttar Pradesh

2.3. Methodology

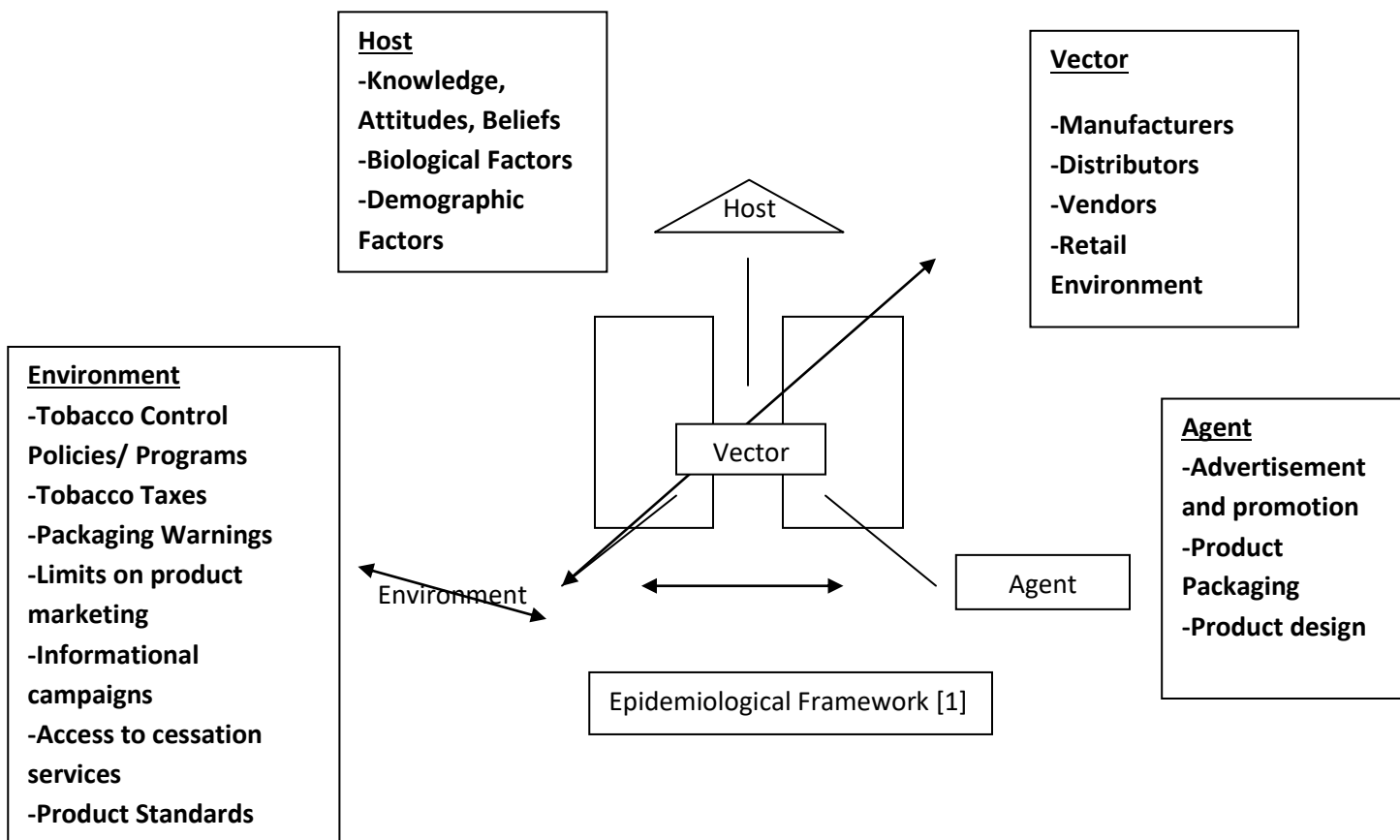
An appropriate framework which can guide the thesis to achieve the aimed objectives would be a conceptual model which can guide in reaching the aim of the study.

2.4.1. Conceptual Framework

The aim of this study is to explore different factors which contribute to SLT use in state of Uttar Pradesh which can help in formulating or updating the

existing SLT laws and policies. The epidemiological framework has been used widely to formulate tobacco control policies and interventions [1].

This epidemiological framework consists of 4 major components which contribute to the use of tobacco [1]. The 4 components are agent, host, vector, and environment. Agent is defined as the factor which is the cause of the disease [1]. Agent can include product packaging, warning and promotion. The host are the consumers and environment includes social, cultural, historical, economic, political, legal, and media influences. The vector is the distributor of the disease. They can be the tobacco companies. However, the focus of this study is to explore the role of different factors which contribute to the use of SLT. The following model demonstrates the inter-relation between the three factors: host, vector, agent and environment. The host is the user of SLT who is influenced or affected by the other two factors that is the SLT product (agent) and the environment currently living in which includes laws, policies, taxes related to SLT.



By using this model, we will explore the inter relationship of factors which contribute to SLT use and also how they independently contribute to use of SLT.

2.5. Methods

2.5.1. Literature Review

The method of reviewing existing literature in relation to smokeless tobacco specifically in Uttar Pradesh and in India in general was undertaken. I have used three search engines "Google Scholar", "ProQuest" and "PubMed". The access to these search engines was provided by the Royal Tropical Institute library.

The key words in my search were ["Smokeless Tobacco India"] ["Smokeless Tobacco Uttar Pradesh"] ["Prevalence, 'Smokeless Tobacco'"] ["'Determinants', 'Smokeless Tobacco', 'India'"] ["'Tobacco', 'Uttar Pradesh'"] ["'Tobacco', 'India'"] ["'Tobacco Cessation', 'India'"] ["Smokeless Tobacco Cessation"] ["Tobacco Intervention Programs"]

The statistics were obtained from statistical government websites of India and World Health organization website was extensively use to review the existent tobacco control policies and intervention.

Below is a more detailed table of search strategy used:

Chapter	Broad Key Words Used	Additional Key Words Used	Prioritised Literature
Background	"India" AND " Smokeless Tobacco" OR "Uttar Pradesh"	"religion" "population" "statistics" "tobacco" "WHO" "culture"	Government documents And Peer reviewed journals
Problem Analysis	"India" AND " Smokeless Tobacco" OR "Uttar Pradesh"	"social determinants" "religion" "harm" "cessation"	Government document And Peer reviewed journals

Contributing Factors to SLT use	"India" AND " Smokeless Tobacco" OR "Uttar Pradesh"	"youth" "adults" "gender" "females" "males" "culture" "caste" "advertisements" "labels" "tobacco" "marketing"	Government document And Peer reviewed journals
Interventions and Law	"India" AND " Smokeless Tobacco" OR "Uttar Pradesh"	"interventions" "evidence" "uttar Pradesh" "cessation" "nicotine" "counselling" "technology"	Government document And Peer reviewed journals

Table 2.1.

Chapter 2

2.1. Host

By using the conceptual framework we will explore the existing knowledge, attitudes, beliefs, biological factors and demographics regarding SLT among the population of Uttar Pradesh.

2.1.1. Knowledge, Attitudes and Beliefs of SLT users

The belief of a SLT user is one of the major factors that can influence SLT use. Belief of a product can influence behaviour of a consumer towards a product. The use of SLT in India stems from traditional belief and misconception regarding medicinal properties of SLT.

The belief that SLT is beneficial for the gums is quite prevalent across the country [31]. Some believe that it can help in relieving toothache, stomach ache and headaches [43]. Singh [44] reported that 5% of the consumers in India used SLT as a dentifrice (brushing).

A large number of people believe that SLT is less harmful compared to cigarette. This can encourage them to switch to SLT instead of quitting tobacco [45]. A large number of tobacco users are unaware of its long term consequences like oral cancers etc[46].

It has been found that a large population in India who are smokers tend to switch to SLT instead of quitting tobacco completely. In a nationwide survey, switching to smokeless tobacco was the most common approach used by smokers who were willing to quit.

Belief: This switch could be attributed to the COTP Act 2003 which banned smoking in public places in India whereas there is no such ban for smokeless tobacco. Another reason could be the low level of taboo associated with smokeless tobacco in India, particularly among women[47].

The use of SLT as a method of cessation is a matter of concern and has been explored in literature as not a good approach. Both SLT and cigarettes are harmful to humans and have addictive properties. Thus, the belief that SLT are less harmful is strong predictor contributing to use of SLT[47].

Education: Higher level of education can also be attributed to the switch from smoking to SLT. As the more educated ones are aware of public ban of

smoking and harmful effect of second smoke may motivate them to switch to SLT[47]. However, the use of SLT is still high in the uneducated sections of the society.

Belief among Women regarding SLT use.

There is false belief among women that SLT products have medicinal properties. They believe that it can improve their oral health and cure abdominal problems. Women have reported that they use SLT to release stress which they may have due to high poverty, low education, marital conflict, high labor pain and domestic violence [48]. They use SLT as a way to escape from their issues and find peace in it.

Women believe that chewing tobacco can give them energy to carry out work on daily basis and as well lower labor pain. The belief that it can lower labor pain can be predictor among pregnant women who use SLT [7]. Also, their belief that it is less harmful can play a role in consumption of SLT among pregnant women. They also believe that it can help in suppressing hunger. Therefore, these beliefs encourage them to take up the habit [49].

Belief among adolescents and youth regarding SLT use

The belief that a product is harmful plays a key role in influencing health behaviour among youth and adolescents. They have an impact on tobacco use behaviour, including initiation, experimentation, and cessation [50].

The concept of relative harm has been found to exist among youth where they believe one product is less, equally, or more harmful than another product[50]. For example, It has been found that the use of SLT products is higher compared to smoking cigarettes among adolescents [51]. This could be attributed to the belief among adolescents regarding SLT products like *gutkha*, *khaini*, *mawa*, and *mishri* being less harmful than cigarettes[51].

The parents are who consumers of SLT; their children and other family members are more likely to start consuming SLT [52, 53]. Role of parents has been found to be a the major predictor for adolescents using SLT[54]. When parents consume SLT products, the child believes it as an acceptable behaviour and thereby gets influenced into taking up the habit of consuming SLT and other tobacco products[54].

A study conducted in Muzaffarnagar (city of Uttar Pradesh), explored the knowledge among college students regarding SLT. The authors stated that the knowledge regarding SLT use among these college students was considerably low with females consuming SLT at an alarmingly high level. The reason for the high use was attributed to mainly peer pressure[55].

Adults belonging to age category 15-25 years of age have been found to be the most susceptible age for initiation of tobacco use. A study conducted in Uttar Pradesh explored relation between socioeconomic status and use of SLT[56]. It was found that individuals with low socioeconomic status and poor literacy levels used SLT more than the other groups. The poor literacy level can account for less awareness regarding SLT products. Another study states that when the parents are consumers of SLT, their children and other family members are more likely to start consuming SLT [52, 53].

2.1.2. Knowledge and Attitude

Knowledge and awareness of SLT products plays a key role in initiating use of SLT. Mutti, Reid [57] have stated that the knowledge regarding health risks of SLT continues to be low among different communities in SEAR's. Prevalence of people who consume all types of tobacco is high among those who have no knowledge regarding ill effects of tobacco [25].

The knowledge and beliefs of an individual towards a product majorly impact on the behaviour change. Rahman, Mahmood [43] suggest that if an individual perceived usage of SLT as harmful, they would give it up. The high use of SLT can therefore also be related to the social acceptability of SLT [58].

There is a dire need for public awareness programs regarding harmful effects of SLT. The general acceptance of SLT along with the misconceptions can be attributed to be one of the major factors impacting usage of SLT.

2.2. Role of Culture and Religious beliefs

Religion is an integral part of India. The two main religions in Uttar Pradesh is Hinduism and Islam. Hinduism and Islam both are against self harm and believe in keeping their bodies pure. An association between religious beliefs and consumption of SLT has been found but their relation is not very much explored in the current literature. A study conducted in India suggested a strong relation between willingness to quit and religion[24]. Religious beliefs

can contribute to motivating individuals to quit SLT if they perceive it to be harmful to their body [59].

Kumar, Dwivedi [60] stated that use of SLT in Uttar Pradesh could be due to the social acceptance of SLT versus smoking tobacco. SLT products can be used in private settings without harming any other individual making its use even more acceptable to the society. The authors further state that a culture of tobacco use exists in working places like construction sites and even households[60].

The culture of using tobacco is well integrated in India. In the capital city of Uttar Pradesh, Lucknow, use of SLT products and *areca nut* (used with tobacco) is culturally popular and accepted. The consumption of cigarettes among women is considered to be a taboo in the Indian culture [61]. SLT use among women is more culturally accepted as compared to smoking cigarettes [48]. This can drive the women towards usage of SLT [57].

Economy, Politics and Caste Scenario

The recent reforms in economy of Uttar Pradesh in specific and India in general has led to reduction of government employment. Government employment is considered to have job security and is an important source of income in rural areas.

This reduction in government jobs has been affecting the economic status of people of Uttar Pradesh. There has been failure of generation of more private sector jobs. The decrease in government jobs has also paved way for politicising and corruption in recruitment of these posts. The neglect of employment creation can be associated with the existence of caste system and inequalities which are still existent in Uttar Pradesh[62].

There are mainly three divisions in caste in Uttar Pradesh. The first division are known as upper castes (principally Brahmins and Thakurs) contributing almost 20% of the population of Uttar Pradesh. They are highly dominant and commonly found to attain salaried employment and landownership in many parts of Uttar Pradesh [62].

The second category includes the intermediate caste which is 2% of the total population known as *yadavs*. They are found to be locally dominant in spite of the low numbers. They have been found to control landownership, non-

agricultural sources of wealth and influence within local state institutions mainly in the eastern parts of Uttar Pradesh[62].

The remainder of the population mainly comprises of Muslims, poorer castes, Most Backward Castes and Dalits. Rural households among Muslims, Dalits, and Most Backward Castes possess little or no agricultural land and work in exploitative, poorly paid, and insecure conditions[62].

2.3. Biological Factors

Smokeless tobacco delivers similar amounts of nicotine as does cigarette smoking, and does not expose the individual to combustion products, but may deliver tobacco carcinogens, such as tobacco-specific nitrosamines. These carcinogens can increase the risk of cancers in regions like lung and mouth[63].

The SLT users also develop nicotine dependence / addictiveness similar to cigarette smokers. The beliefs do play a major role in influencing SLT use. However, Cognitive Dissonance theory suggests that there is possibility that consumers addicted to tobacco may rationalize their behaviour through false beliefs. They can do this by perceiving their own product as less harmful compared to others which in this case is the SLT product they are consuming [57].

2.4. Demographics

2.4.1. Age and Gender

Uttar Pradesh ranks first in terms of adolescent and youth population in the country, accounting for 19.3% of total adolescents of the country and 17.5% of India's youth[16]. This is approximately 48.9 million adolescents and 40.8 youth present in Uttar Pradesh during the year 2011[16].

The use of SLT is found to be high in school children and adolescents in Uttar Pradesh [64]. Also, SLT product is the first tobacco product they use and not cigarettes[65]. The age of initiation of using SLT products is found to be as early as 11 years[66].

Males are comparatively at higher risk of using smokeless tobacco in Uttar Pradesh especially in rural areas[67]. The higher risk has been attributed to

less awareness regarding ill effects of smokeless tobacco and also addictive properties of SLT[67].

2.4.2. Education

Uneducated males and females in India are at a higher risk of using tobacco. This can often be attributed to less knowledge and awareness among the uneducated people regarding SLT.

2.4.3. Living Conditions

A large population of Uttar Pradesh lives in rural areas in poor housing conditions. It has been found that the consumption of SLT is found to be high in those living in poor housing conditions [25].

Chapter 3

4. Agent

4.1. Role of Advertisement and Promotion

The advertisement of tobacco products has been banned in India since 2003. In spite of the ban, tobacco companies offer discounts, coupons, free samples to encourage SLT use. It has also been found that a number of shopkeepers strategically place tobacco strips in their shops like at entrances, most visible areas which would thereby encourage the consumers to buy. Some shopkeepers have even promoted use of SLT by adding silver coins to *gutka* bags [7]. In addition to this Adults have been found to use SLT products even if they don't have access to advertisements [44].

Surrogate advertisement is a known phenomenon which occurs in relation to SLT advertisement. As mentioned the advertisements of tobacco products is banned[68]. Paan masala are said to have be plain and do not contain tobacco. Paan masala products are advertised without any interruption across all channels. The suggestive plain nature of paan masala's is misleading as paan masala have different varieties off which one is tobacco containing. This type of advertisement works with the masses as paan masala is very much part of the culture and not perceived harmful[68]. Thus, through surrogate advertisement of plain paan masala; tobacco containing paan masala's are also promoted as they carry the same brand name as paan masala.

Kostova and Dave [28] have stated that advertisements are more likely to impact female consumers than male. The study done in Muzaffarnagar did conclude that female students were found to be consuming SLT at higher numbers than male students[55]. However, just two studies cannot conclude on effect of SLT advertisement on women but it needs to be further explored.

Marketing and advertisement of SLT products in Uttar Pradesh has been done on a large scale in spite of the government policies. DS, Rajesh [69] further state that the pictorial warnings are not up to the standards and surrogate advertisement is extensive done in this state. Under the COTPA rule, the pictorial were supposed to have advertisement in two languages. However, it was found out in Uttar Pradesh, most of the labels didn't have

warnings in regional language[69]. The surrogate advertisement along with the poor pictorial warning labels is directly harming the health of the people.

In Uttar Pradesh, it has been found that paan masala containing tobacco are largely used by population under the age of 40 years[68]. In the urban areas of Uttar Pradesh, plain paan masala was found to be the most commonly used product. It is a common misconception among the people that plain paan masala always contain tobacco and the tobacco companies are able to mislead the population due to these misconceptions[68].

The current evidence shows that exposure to pro-tobacco content on television and cinema may promote tobacco use among men and women in India. This suggests clear directions for actions to curb pro-tobacco messages in these media could serve to reduce the use of tobacco and subsequent tobacco-related illnesses in India.

4.2. Tobacco Control Policies/ Programs

The state of Uttar Pradesh is obliged to implement national policies. The states can formulate their own policies according to the need of the population. However, there are currently no policies formulated by the state of Uttar Pradesh to combat consumption of SLT products.

4.3. Tobacco Taxes

SLT India has revenue of Rs, 10,000 crores every year [22]. In spite of the high revenue, the health impact is much higher than the money produced from it. Also, the prices of smokeless tobacco remain to be cheap in South East Asia regions and are widely assessable to people of all socio- economic backgrounds.

There have been several studies done in India which have suggested that increased SLT prices could lead to decrease usage of SLT [28, 70]. It has also been suggested that prices between cigarettes and SLT's should not have a very wide difference as this can encourage substitution behaviour [44]. There is also existence of illegal markets of SLT in India. In these markets imported products are mixed with local products and sold under local packaging and also on cheaper prices [53].

In the past few years there has been a rise of price in SLT products across all states of India. However, the income growth is more than the price rise

and use of SLT still continues at large scales [44]. Also, men are more likely to respond to the hike in prices than women [55].

4.4. Packaging Warnings

WHO recommends increasing the size of the pictorial warnings can influence behaviour of SLT consumers. The graphical representation have strong impact on SLT users [71].

In April 2016, the Government of India implemented a new regulation mandating large pictorial health warnings that graphically depict the hazards of tobacco use. With the increase in the size of the pack warnings to 85% of both front and back panels on all tobacco products (from just 40% on the front panel previously), India now has the third largest pack warning labels of any country[20].

All smoked (cigarettes, bidis, cigars, hookah, etc.) and smokeless tobacco products (chewing tobacco, khaini, zarda, snuff, or any chewing material with tobacco as one of its ingredients) must display large pictorial warnings [20].

The results of the latest Global Adult Tobacco Survey proved that the graphic warning labels depicting throat cancer (labels for smoked tobacco products) and oral cancer (labels for smokeless tobacco products) proved to be strong tools in discouraging youth from initiating tobacco and have motivated 275 million current users to quit in India since 2016[20].

4.5. Access to cessation services and Information Campaigns

Cessation support and medication can increase the likelihood that a smoker will quit successfully. As per MPOWER, the cessation programs should firstly include tobacco cessation services integrated into primary and routine health care services. Secondly, introduction of quit lines to offer help to those seeking to quit tobacco and offer low cost or free cost cessation medicines.

India has been highly successful in two measure areas in accordance to MPOWER: warning people about ill effects of tobacco and offering tobacco cessation services. India introduced cost cutting cessation services and national quit line[20]. The access to cessation services was increased by using mobile technology which offered personalized advice to tobacco quit

methods[20]. It was reported that among the 12000 registered members, 6% of SLT users managed to quit using this method. This has led to expansion of these services across the country[20].

The GATS survey conducted in India in 2009–10 revealed that 47% of current smokers and 46% of current users of smokeless tobacco planned to quit tobacco use eventually, with more than half of these planning or considering doing so within the next 12 months. Considering the high interest in quitting among tobacco users, the Government of India launched a countrywide tobacco cessation programme in January 2016 and national toll-free quitline in May 2016. Almost 40% of tobacco users who called the quitline and registered for a cessation programme remained abstinent after 3 to 5 weeks, with 9% experiencing nicotine withdrawal symptoms for which they were referred to cessation clinics.

India also launched a bilingual mCessation programme in 2016 in which more than 2 million tobacco users have enrolled. This program used mobile phones as a medium for offering cessation services. A Ministry of Health and Family Welfare evaluation at the end of the programme's first year, covering a sample of more than 12 000 registered users, demonstrated an average quit rate of about 7% among both smokers and smokeless tobacco users 6 months after enrolment. Based on its success, the Indian government has decided to expand this service by introducing Interactive Voice Response (IVR) technology to increase user access, and to make the service available in five additional languages

In 2009, the very first campaign targeting SLT was launched by the Government of India. This was a media mass campaign which ran for approximately 6 weeks [72]. The campaign was shown on national, state and regional media platforms. The campaign targeted specifically people aged between 16 and 50 years in both urban and rural areas. The objectives of the campaign was to increase awareness regarding harmful effects of SLT and increase knowledge about the health consequences of SLT use[72]. This program was successful in reaching people with low socio economic status suggesting significance of television and other media platforms in creating awareness regarding SLT. The success of this campaign paves way for more such campaigns but also require sufficient funds to run them.

3.2. Vector

Manufacturers, Distributors, Vendors and Retail Environment

The manufacturers in India have been employing vigorous marketing strategies. In spite of the media ban, the manufacturers and distributors use influential personalities to attract individuals towards using SLT[24]. The manufacturers, distributors and vendors tend to target young individuals. The use of SLT is on the rise in India particularly in Uttar Pradesh, such marketing strategies can greatly increase burden of SLT users[24].

The manufacturers have also resorted to deceptive advertisement by promoting SLT products as mouth fresheners[73]. It has been found that the packaging of products does not follow the laws and the contents of the products are not clearly written on the packets[73]. This lack of transparency in terms of content, weight, quality control and warning is a serious issue which needs to be dealt with urgently.

There have been reports of black markets selling cheaper quality of SLT among the poor people. However, little or no research has been done to evaluate their existence and their contribution to SLT usage.

Chapter 4

4.1. Discussion

The purpose of this study was to explore factors contributing to use of SLT in Uttar Pradesh. The contributing factors can then help in evaluating the existing laws and policies and how to update them accordingly.

The review using the epidemiological framework shows there are multiple factors that can act as contributing factors for SLT use. These factors can be inter-related to each other. The findings of this study show a clear relationship between beliefs, knowledge and awareness of SLT products with the use of SLT products.

The role of religion has not been completely explored due to lack of present data but an association between quitting and religion is present. There is potential of using religion in planning laws and policies using SLT.

The existence of surrogate advertisement, lower taxes and ineffective implementation of warning labels are also significant contributing factors in use of SLT in Uttar Pradesh.

Socio-economic factors like poverty, employment and caste system are also contributing factors to use of SLT. The people belonging to lower castes in Uttar Pradesh have been found to be living in poverty and are unemployed. However, the extent of role of casts still needs to be explored further.

4.1.1. Role of Knowledge and Beliefs in SLT use in Uttar Pradesh

Uttar Pradesh, a densely populated state with large number of population living in rural areas is the highest consumer of SLT in India. The knowledge regarding SLT products are predictors in assessing use of SLT. The current research shows that the knowledge regarding health effects of SLT remains to be low.

The belief of people of Uttar Pradesh regarding SLT effects significantly contribute to the use of SLT. The belief of relative harm where one perceives use of SLT less harmful in comparison to cigarettes has been found to be common among adolescents of Uttar Pradesh. This belief needs to be targeted while designing intervention policies.

The belief that SLT products contain medicinal properties is again indication of poor knowledge regarding SLT among the females. The prevalence of SLT use among males is higher than that of females. But, the gap between the female male users is much less compared to smoking. This attributes to general acceptability of SLT products. The tobacco control policies need to design intervention programs that conform to the cultural practices of the people in Uttar Pradesh.

4.1.2. Role of advertisements and product packaging

The laws in India prohibit advertisement of SLT products in all forms. The tobacco companies have managed to advertise SLT products in spite of these policies. Surrogate advertisement is common in Uttar Pradesh and a large number of people consume *paan masala* under the impression that they do not contain tobacco. The packaging of the *paan masala's* having no tobacco is similar to tobacco containing ones which thereby misleads the consumer.

Warning the consumers about the harmful effect of SLT is one of the six components of MPOWER. The use of graphic images demonstrating the harm of tobacco use can be especially effective in convincing users to quit. India has already brought implemented use of pictorial warnings which cover 85% of the package. The effective implementation is an important part of success of this policy. Due to the recent implementation of this policy, evaluation of its extent of implementation is an area of research which needs to be explored over the coming years.

It has been found that advertisement using news media especially television can effectively deliver the message regarding harmful effects of SLT. The mass campaign done in 2009 targeting SLT was found to be effective and more programs need to be initiated to curb use of SLT.

5.2. Evidence based intervention programs and policies

The current laws and COTPA in India have been mentioned before. By using the findings in Uttar Pradesh, the current laws can be updated and new policies can be brought into place. As the WHO FCTC framework provides evidence based recommendations, its recommendations can also be assessed and tailored according to the needs of the population of Uttar Pradesh

Interventions targeting Youth (15-25 years of age)

Selling of tobacco products to individuals below 18 years is prohibited by the COTPA [21]. The WHO FCTC also recommends restricting the age to 18 years and above [20].

The findings in the present literature review show a large number of youth using SLT in spite of these laws. According to the findings, the high use is attributed to peer pressure, lack of knowledge regarding SLT, easy accessibility of SLT products, lower prices, advertisements and parental influence.

The advertisements have been found to significantly impact youth in urban areas [74]. Counter advertisements to raise awareness regarding harmful effect of tobacco can greatly help in reducing use of tobacco products in Uttar Pradesh [75].

The use of mass media has been found to be very effective in reducing use of tobacco products among youth [75]. The youth tend to get early exposure to information and communication technologies which include print media, television, internet and mobiles. The youth tend to adopt early to these technologies [76].

The mass media platform and mobile technology can be used in spreading awareness regarding harmful effects of SLT products which can help in lowering tobacco use[75].

A large proportion of Indians stay in rural areas including youth. The coverage of mass media platforms like television is not 100% and the challenge of reaching everyone through it is very much there[13]. However, the youth being the future of the country and contributing to two third of the world's population; it becomes necessary to raise funds to improve information and technology services in rural areas of India including Uttar Pradesh.

WHO FCTC has recommended raising taxes of tobacco products which is also one of the key measures of MPOWER [20]. The taxes levied on SLT are much lower than smoking which plays a significant factor in influencing youth especially from low social economic status to buy SLT products[77]. A large section of youth in Uttar Pradesh belongs to low socio-economic

status[12]. Thus, increasing taxes can help in combating the high use of SLT among youth in Uttar Pradesh.

The role of parents and adults in influencing youth is found to be significant in encouraging use of SLT among youth[77]. This acceptability of SLT products by parents needs to be intervened. The use of mass media can also be used to increase awareness among parents against use of SLT[77].

Interventions targeting Women

It has been found that women use SLT products with main contributing factors being false beliefs of SLT products having medicinal properties. Women in India believe that SLT products can help in lowering labour pain and many pregnant women use SLT while being pregnant.

Behavioural interventions given by dentists and doctors have been found to be effective in lowering tobacco use among pregnant women [77]. The non existence of any taboo attached to SLT works in favour of women not hiding their SLT usage [77]. The women can be asked about SLT use when they come for their normal appointments and can be counselled regarding its cessation.

Interventions targeting all SLT users

a) Quitlines

Quitlines have been found to be very effective in helping tobacco users cease their habit. The evidence present shows that four to six sessions and follow up sessions must be part of all Quitlines [75]. As mentioned earlier, India has successfully launched tobacco Quitline under the MPOWER measures; expansion of Quitlines can help in reducing SLT use [20].

b) Role of religion

Religion has been found to have a potential in encouraging people to quit tobacco [19]. The current research does show that early exposure to religious activities can help in reducing use of SLT [78]. The state of Uttar Pradesh strongly affiliates itself with religions like Hinduism and Islam.

c) Self Help Intervention Program

Self help intervention programs which are low cost delivered by mail and telephone support have been found to be successful to some extent [79]. Large population of Uttar Pradesh lives in poverty [12] and such program can benefit those who understand the ill effects of SLT usage.

d) Creating Tobacco free culture

Culture of using SLT extensively exists in Uttar Pradesh. The normalization of SLT usage makes the intervention and laws more difficult to apply. Koh [80] mentions that interventions to change culture should be targeted at different locations differently. For example, the schools and colleges should have tobacco interventions tailored to the location. In schools, teachers can play an important role in increasing awareness regarding SLT and encourage cessation of SLT products.

Chapter 5

Recommendations

The current policies and laws suggested by COTPA should be followed by the state of Uttar Pradesh. The COTPA has taken recommendations from WHO FCTC which can help in curbing SLT use.

The lack of research in evaluating the enforcement of COTPA laws and policies in Uttar Pradesh and the growing use of SLT require formulation of laws targeting Uttar Pradesh specifically.

By using the WHO FCTC and COTPA along with the findings of the factors contributing to SLT use, evidence based interventions and policies can be designed to target the population of Uttar Pradesh.

Due to the complexity and inter-relationship between different factors affecting SLT use, it become essential to have a multi sectoral approach to combat use of SLT.

The recommendations are divided into three categories

- a) Recommendations for State Government
- b) Recommendations for Local Districts
- c) Recommendation for National Government

1. Recommendations for State Government

- i. Increasing taxes on SLT products in Uttar Pradesh.
- ii. Establishment of surveillance system which can evaluate implementation of laws.
- iii. Enforcement of advertisement bans through mass media
- iv. Banning of advertisements through paper posters, retailers advertisements and surrogate advertisement as well.
- v. Information campaigns for women, men and youth separately.
 - a. Interventions targeting false beliefs and knowledge among women should be initiated.

- b. Using mass media especially mobile phones to spread awareness among youth regarding harmful effects of tobacco.
- c. Adult male interventions should target relative harm knowledge that exists widely among them.

1. Recommendations for Local Districts

- i. Mass media programs advertising harmful effects of SLT in regional languages across all rural and urban areas.
- ii. Since religion is a potential in quitting tobacco, the local religious leaders can conduct advocacy programs to promote harmful effects of SLT.
- iii. SLT targeted intervention programs in schools and colleges on six monthly bases.
- iv. The COTPA prohibits selling of tobacco products within 100 yards of school institution. The effectiveness of this prohibition also needs to be evaluated. This evaluation is easy to implement is started by individual districts and then reporting results to the state government.
- v. Community based intervention programs should be initiated. As the culture plays a large role in influencing use of tobacco; involving parents, children and youth can help in combating and de-normalizing SLT use.

2. Recommendations for the National Government

- i. The current research on Uttar Pradesh in spite of the high burden of SLT use remains low. The national government should provide funds for conducting extensive research Research targeting following areas should be pursued to further inform the SLT policies :
 - Exploring role of parents in influencing SLT use in adolescents of Uttar Pradesh.
 - Evaluation of effectiveness of laws of COTPA in the state of Uttar Pradesh.
 - Investigating marketing trends of SLT in Uttar Pradesh

- Investigating product packaging and implementation of package warnings on the SLT products.

2.6. Limitations

I would like to highlight some limitations of this desk study. This study was based on findings of the current literature available. The literature available in relation to Uttar Pradesh is quite limited with many research gaps present.

There was lack of information present regarding implementation of the COTPA and the existing retail culture of SLT. A very few number of studies have been conducted only in Uttar Pradesh. Due to this, studies from states with similar demographics and rate of use were used to draw findings.

The research in SLT in spite of its vast usage remains to be limited with gaps. The limitation in this study would also be my limited experience in research and as a novice researcher, there could be lack in depth of analysis.

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2.7. Conclusion

The purpose of this was to explore contributing factors to SLT use. The main contributors for SLT usage in Uttar Pradesh were found to be lack of knowledge regarding SLT, false beliefs and the social acceptance of use of SLT. The potential role of religion in quitting was an important finding considering Uttar Pradesh to be strongly affiliated with religion.

This review is also the first review assessing contributing factors of SLT use in Uttar Pradesh. This review can help in guiding future researches. The study also helped in highlighting research gaps in SLT. The existence of high usage of SLT in Uttar Pradesh and large impact on the population calls for more research targeting this location. It also highlights the ineffective implementation of monitoring and evaluation programs which are strongly suggested by WHO FCTC.

This study thereby paves way for new research areas like measuring knowledge and belief regarding SLT in Uttar Pradesh, evaluating potential role of religion in use of SLT, evaluating the implementation of warning

labels in Uttar Pradesh, evaluating implementation and measuring effectiveness of Quitelines in regions of Uttar Pradesh and possible additional factors which contribute to SLT use.

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