CODEN [USA]: IAJPBB ISSN : 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

SJIF Impact Factor: 7.187

https://zenodo.org/records/13340832

https://www.iajps.com/volumes/volume11-august-2024/15-issue-08-august-24/

Available online at: http://www.iajps.com *Review Article*

TOBACCO ADDICTION IN INDIA

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Abstract:

Tobacco control is an arena which requires the active participation of many players, in a collaborative mode. From several administrative departments involved at the governmental level, diverse civil society groups needed at the community level and varied technical expertise required from multiple professional groups, to a host of bilateral and international partners to engage, the design and delivery of the national programme for tobacco control requires extensive networking among the stakeholders and carefully calibrated coordination mechan-isms. Specific recommendations for individual stakeholders should be profiled.

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Please cite this article in press *Chaitanya Madan More* ***et al., Tobacco Addiction In India., Indo Am. J. P. Sci, 2024; 11 (08).***

1.INTRODUCTION:

This is not a report about just any crop and just any country. It is a report about tobacco, which is the foremost cause of preventable death in the world today, and India, which is the second largest country in the world, with a billion plus population. This report is also an examination of the methods and tools available to reduce, prevent and control tobacco use. The total number of premature deaths caused by tobacco during the twentieth century has been estimated at about 100 million and, if current trends of tobacco use continue during the twenty-first century, the death toll is projected to go up to one billion. The World Health Organization (WHO), which provides these estimates, also predicts that India will have the fastest rate of rise in deaths attributable to tobacco in the first two decades of the twenty first century. Many of these deaths will occur in the productive years of adult life, as a consequence of an addiction acquired in youth. The compelling need to save many of these lives from falling prey to tobacco use addiction and the urgent imperatives of avoiding the huge health, economic, social and environmental burdens that would be imposed by tobacco on a nation that aspires for accelerated development, form the raison d'etre of this report. Tobacco use causes a wide range of major diseases which impact nearly every organ of the body.[1] These include several types of cancers, heart diseases and lung diseases. Public health researchers have been substantiating these findings and discovering more and more damaging evidence about the disease consequences of tobacco use for over half a century. For a long time, the tobacco industry propounded and perpetuated the myth that the evidence on the relationship between smoking and ill health was controversial. In recent years, however, many of the tobacco companies have given up that position. If the evidence is clear that tobacco use is harmful and if the tools to prevent and control its use are available, why is it that tobacco control is challenging? The answer is very complex. There are numerous forces influencing a persons decision to use tobacco, or if that person is a tobacco user, the forces that drive continued use. The most important factor for tobacco use is the totality of industry activity, including advertising and promotion, organizational activity, support for ancillary activity and political action, which maintains the marketability and profitability of the product. Nonetheless, there is cause for optimism based on considerable public support for efforts to prevent and control tobacco use. According to estimates made by the WHO, currently about 5 million people die prematurely every year in the world due to the use of tobacco, mostly cigarette smoking. These deaths are currently divided somewhat evenly between developed and developing countries. More important is the fact that this epidemic of disease and death caused by tobacco is increasing very rapidly. By 2030, it is estimated that the number of premature deaths attributable to tobacco would double to 10 million deaths every year, with about 7 million of the deaths taking place in developing countries. Among people alive today in the world, about 500 million would die prematurely due to tobacco use; most of these are children and young adults of today.[2]

India tobacco problem is more complex than probably that of any other country in the world, with a large consequential burden of tobacco related disease and death.[3] The prevalence of tobacco use among men has been reported to be high (generally exceeding 50%) from almost all parts of India (more in rural than in urban areas). Women from most parts of India report smokeless tobacco use and the prevalence varies between 15% and 60%.[4] Among 13-15-year-old school-going children, the current use of any tobacco product varies from 3.3% in Goa to 62.8% in Nagaland.[5] In the late 1980s, the number of tobacco-attributable deaths in India was estimated as 630,000 per year.[6] On conservative estimates, the tobacco-attributable deaths currently range between 800,000 and 900,000 per year. The cost of the tobacco attributable burden of just three groups of diseases , cancer, heart disease and lung disease was estimated as Rs 277.611 billion (US$ 6.5 billion) in 1999.[7] This increased to Rs 308.33 billion (US$ 7.2 billion) in the year 2002-2003.

Tobacco addiction is a major public health issue that affects millions of people worldwide. It is one of the leading causes of preventable deaths and is responsible for various health problems such as lung cancer, heart disease, and stroke. Despite numerous public health campaigns and regulations, tobacco addiction remains a persistent problem. In recent years, various alternatives to traditional tobacco products have emerged, including e-cigarettes, vaping, and heated tobacco products. While these products are marketed as safer alternatives to smoking, their long-term health effects are not yet fully understood.[8]To gain a better understanding of the side effects of tobacco addiction and its alternatives, numerous studies and surveys have been conducted. These studies aim to identify the health risks associated with tobacco addiction and its alternatives, as well as the effectiveness of various strategies to help people quit smoking. This survey will explore some of the key findings from these studies, including the most common side effects of tobacco addiction.[9]

2. Review Literature

1.K. Shrinath Reddy et. al. 2004

Social Awareness and Regulatory Bodies -

This report owes its origins to the recent global surge in action against tobacco. As awareness of the dangers posed by tobacco spread, nations across the world resolved to forge a campaign strategy and frame a battle plan to overcome the tobacco threat. India's anti-tobacco law emerged in April 2003, close to the closure of the intergovernmental negotiations on the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) in March 2003. Soon thereafter, the Ministry of Health and Family Welfare, Government of India (MOHFW), decided to commission a detailed review of the status of tobacco control in India. This was intended to collate the Indian experience and craft a plan for future action based on a critical appraisal of global evidence and India's specific needs.

The series of scientific reports published by the Surgeon General of the United States of America have served, over the years, as the best sources of evidence-based information on the adverse health effects of tobacco use and a resource for the best practices for tobacco use, prevention and control. The collaboration of the US Centers for Disease Control and Prevention (CDC) was, therefore, welcomed by MOHFW for the purpose of providing technical support to the development of this report.

2.PRAKASH C. GUPTA et. al. 2004

Tobacco addiction , symptoms , Treatment , Alternatives , Tobacco practice and pattern.-This report provides a major source in our national efforts to prevent and control tobacco use. It is also intended to inform and assist many sections of our society who are committed to protecting Indias national interests by preserving and promoting the health of our people. Since several of such readers will not be health professionals, an attempt has been made to keep the language as free from technical jargon as possible. Most of the readers will know that tobacco is harmful but not how harmful. We hope this report will inform them. Many of our readers will want to control tobacco but not know how best to do it. We hope this report will aid them. Above all, we hope this report will provide policy-makers the necessary impetus to initiate and implement a coordinated comprehensive national strategy for tobacco control.

3. AIM AND OBJECTIVE

AIM OF STUDY:

The aim of the study on a survey of the side effects of tobacco addiction and its alternatives is to gather information on the potential health risks associated with tobacco addiction, as well as the potential benefits and drawbacks of alternatives to tobacco, such as nicotine replacement therapy or e-cigarettes.

OBJECTIVE:-

The objective of a survey on the side effects of tobacco addiction and its alternatives would be to gather data and insights on the following:

1. The prevalence of tobacco addiction and alternative forms of tobacco consumption among the general population.
2. The perceived side effects of tobacco addiction and its alternatives, including both physical and psychological effects.
3. The reasons why people start using tobacco and its alternatives, as well as the factors that influence continued use or cessation.
4. The effectiveness of various methods for quitting tobacco use or switching to alternatives, such as nicotine replacement therapy or counseling.
5. The attitudes and beliefs surrounding tobacco and its alternatives, including perceptions of social norms, personal responsibility, and public health implications.

By collecting this information, the survey could provide valuable insights into the impact of tobacco addiction and its alternatives on individuals and society as a whole. This could inform public health initiatives, policy decisions, and educational campaigns aimed at reducing tobacco use and promoting healthier alternatives.

4. Plan Of work

Preparing List of Questions

↓

Data Collection by questioning to random 40 peoples

↓

Compilation of data

↓

To analyse the collected data

↓

Arranging the data in Graphical representation

↓

To make a conclusion from result

5. Plant Profile:

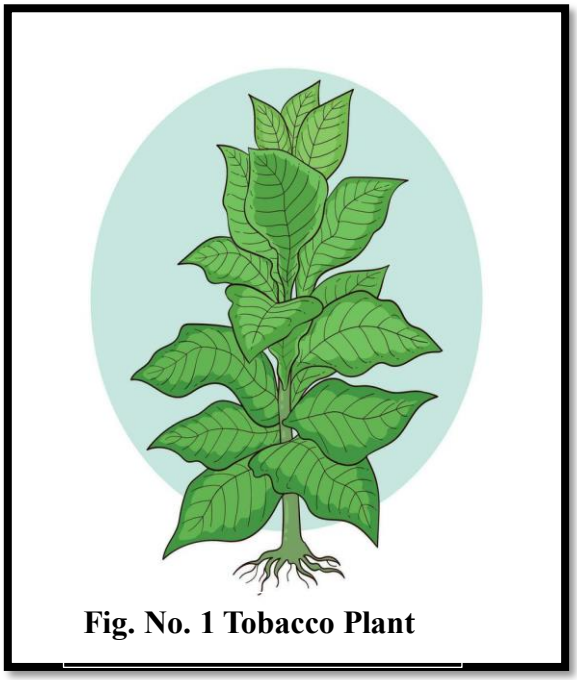


Fig. No. 1 Tobacco Plant

FAMILY: Solanaceae (Nightshade Family)
GENUS: Nicotina Tabacum (1 Year Plant) 67 Species are mainly found in America
Type of Tobacco:-
The type of tobacco vary according to tobacco classes in various countries and element such as manipulation of nitrogen fertilization plant density time and hight of topping harvesting and curing are added to favourability influence the usability of the curved leave for specific products.
Verginia:-(40% of world production)
• High sugar low oil
• Ligher color of leaves being species in flower and darker coloured having more
deeper and complex teste
• Used in cigarette blends
Burley:- (11%)
• High oil and low sugar
• Nutty type flower
• Cured burley leaf is to very low sugar to nitrogen ration (high nicotine)
• Main producers:- USA, Itely, Koria , Brazil , Mexico , India
Maryland:-Small total world population neutral type with mild flowersOriental:- (16% Production)
• Oriental tobacco is mild with very characteristics aroma
• Resin wax and gum excluded by glandular hairs (trichomes) supply the aroma[10]

6.History
The history of global tobacco trade is integrally linked with the history of India. It was to discover a sea route to this fabled land, reputed for its spices, silk and gems, that Christopher Columbus set sail in 1492. His wayward journey took him instead to America. This discovery of the New World was accompanied by the

discovery of tobacco by Portuguese sailors. This plant, treasured by the American Indians for its presumed medicinal and obvious stimulant properties, was eagerly embraced by the Portuguese who then moved it to the Old World of Europe. Even though their quest for easy access to Indian spices was delayed by some years, the Europeans did not fail to recognize the commercial value of this new botanical acquisition. When the Portuguese eventually did land on India-s shores, they brought in tobacco. They introduced it initially in the royal courts where it soon found favour. It became a valuable commodity of barter trade, being used by the Portuguese for purchasing Indian textiles. The taste for tobacco, first acquired by the Indian royals, soon spread to the commoners and, in the seventeenth century, tobacco began to take firm roots in India. Thus, tobacco travelled to the -real- Indians from their curiously named American cousins, through the medium of European mariners and merchants who sailed the seas and spanned the continents in search of new markets and colonies. It was with the establishment of British colonial rule, however, that the commercial dimensions of India-s tobacco production and consumption grew to be greatly magnified. Initially, the British traders imported American tobacco into India to finance the purchase of Indian commodities. When the American colonies declared independence in 1776, the British East India Company began growing tobacco in India as a cash crop. Attempts were made, under the colonial rule, both to increase the land under tobacco cultivation and to enhance the quality of the leaves produced. The British East India Company and its successor, the British Raj, used tobacco as an important cash crop, both for domestic consumption and foreign trade. The manufacturing industry was, however, not established till much later, as the British believed in exporting the leaf to Britain and re-importing cigarettes to India, with considerable value addition in the process. As domestic consumption of cigarettes rose, the Imperial Tobacco Company commenced production within India, retaining control and repatriating the profits. In the late nineteenth century, the beedi industry began to grow in India.[11] The oldest beedi manufacturing firm was established around 1887 and by 1930 the beedi industry had spread across the country. The price differential from cigarettes favoured the use of beedis by the working classes and this domestic product soon supplanted cigarettes as the major form of tobacco consumption. The tax policies adopted by the Indian Government after Independence also favoured the beedi in comparison to cigarettes. This further fostered a growth in beedi consumption. While tobacco chewing was practised for many centuries, commercial production and marketing have been markedly upscaled recently, with the introduction of the gutka. The rate of growth of consumption of gutka has overtaken that of smoking forms of tobacco. As a result, oral tobacco consumption has opened a new and broader front in the battle between commercial tobacco and public health in India. The economics of tobacco, which introduced it into India and entrenched it during the colonial rule, also provided a compelling reason for continued state patronage to the tobacco trade, even in free India. The ready revenues that bolster the annual budgets, the ability to export to a tobacco-hungry world market and the employment opportunities offered to millions provided the rationale for encouraging tobacco, both as a crop and as an industry. While economics may have been the principal force propelling the seemingly inexorable advance of tobacco in India, there are also a multitude of social and cultural factors which need to be recognized, so that the variations in its use across social, religious and ethnic subgroups can be comprehended. Such factors have operated since the time tobacco entered India, though the nature of the sociocultural determinants that influence individual and community responses to tobacco may have varied over time, region, religious denomination and social class. It is this tapestry of international linkages, powerful economic factors and distinctive cultural influences which make the history of tobacco in India a fascinating study. This chapter attempts to profile some of these in a brief narrative. Interested readers are advised to seek more detailed information from the referenced publications, even as they are exhorted to join a collective effort to permanently confine tobacco in India to the pages of history.[12]

7. Tobacco Use in India: Practices and Patterns

Tobacco smoking

Tobacco smoking has been in vogue for hundreds of years. With the spread of tobacco to Europe and other parts of the world from the sixteenth century, tobacco smoking soon gained popularity in India.[13] Tobacco can be smoked in a wide variety of ways.

Beedis Beedis are the most popular smoking form of tobacco in India. Thirty-four per cent of the tobacco produced in India is used for making beedis. Beedis are puffed more frequently than cigarettes to prevent them from going out. Beedis are made by rolling a dried, rectangular piece of tendu leaf with 0.15-0.25 g of sundried, flaked tobacco.[14]

Cigarettes Cigarette smoking is the second most popular smoking form of tobacco used in India after beedis. In India, cigarette use seems to be confined to the use of manufactured cigarettes; there are no reports on the use of roll-your-own cigarettes. The prevalence

Fig No. 2 East India company Painting.

Fig. 2.1 An East India Company painting of a bibi (woman) sitting on a western chair, contentedly smoking a *hookah*[24]

varies greatly among different geographic areas and subgroups such as rural-urban.

Cigars Cigars are made of air-cured, fermented tobacco, usually in factories, and are generally expensive. Cigar smoking is predominantly an urban practice.

Cheroots A cheroot is a roll made from tobacco leaves.

Chuttas Chuttas are coarsely prepared cheroots. They are usually the products of cottage and small-scale industries, or are made at home. Nearly 9% of the tobacco produced in India is used for making chuttas. It is estimated that about 3000 million pieces of chutta are made annually in India. Chutta smoking is widespread in the coastal areas of Andhra Pradesh, Tamil Nadu and Orissa. Reverse chutta smoking The term -reverse smoking- is used to describe smoking while keeping the glowing end of the tobacco product inside the mouth. Reverse chutta smoking is practised extensively by women in the rural areas of Visakhapatnam and the Srikakulam district of Andhra Pradesh. In the Srikakulam district, 46% of the 10,169 individuals surveyed smoked reverse and this practice was more common among women (62%) than men (38%).[15]

Dhumti Unlike beedis and chuttas, dhumtis are not available from vendors but are prepared by the smokers themselves. Dhumti is a kind of a conical cigar made by rolling tobacco leaf in the leaf of another plant. In a random sample of about 5400 villagers in Goa, 4% were dhumti smokers.[16]

Reverse dhumti smoking Dhumtis may be occasionally smoked with the lighted end inside the mouth. The overall prevalence of this form of smoking is 0.5% in Goa.[17]

Pipe Pipe smoking is one of the oldest forms of tobacco use. The different kinds of pipes used for smoking range from the small-stemmed European types made of wood to long-stemmed pipes made from metal or other materia

Hooklis Hooklis are clay pipes commonly used in western India. Once the pipe is lit, it is smoked intermittently. On an average, 15 g of tobacco is smoked daily. Hookli smoking was practised by 11% of the 5227 men studied in the Bhavnagar district of Gujarat.[18]

Chillum Chillum smoking is an exclusively male practice; it is limited to the northern states of India, predominantly in rural areas. The chillum is a straight, conical pipe made of clay, 10-14 cm long, held vertically. In a survey of 35,000 individuals in the Mainpuri district of Uttar Pradesh, 28% of the villagers were found to be chillum smokers. Chillum smoking requires a deep pulmonary effort. Often, one chillum is shared by a group. They are made locally, are inexpensive and easily available. Chillum probably predates the introduction of tobacco to India and was used for smoking opium and other narcotics.[19]

Hookah The hookah is an Indian water pipe in which the tobacco smoke passes through water before inhalation. In a random sample of 4859 men and 5481 women from the Darbhanga district of Bihar, 2% and 28%, respectively, reported smoking the hookah. 5 The reason given for this female predominance is that it is inconvenient for men to carry a hookah, whereas women remain at home most of the time. There has been a considerable fall in the reported consumption of hookah tobacco. Hookah smoking thus appears to be on the decline in India.[20]

Non-tobacco smoking products

Non-tobacco smoking products are also available. An herbal cigarette (brand name Nirdosh) has been available for a long time. Recently a herbal beedi (brand name Vardaan) has been launched. Ostensibly, these products are marketed as aids to smoking cessation. No scientific evaluations have been carried out and little is known about their efficacy.

Smokeless forms of tobacco

The term -smokeless tobacco- is used to describe tobacco that is consumed without heating or burning at the time of use. Smokeless tobacco can be used orally or nasally. For nasal use, a small quantity of very fine tobacco powder mixed with aromatic substances called dry snuff is inhaled. This form of smokeless

tobacco use, although still practised, is not very common in India. No scientific report is available in the literature and therefore nasal inhalation of snuff will not be further dealt with in this chapter. The oral use of smokeless tobacco is widely prevalent in India; the different methods of consumption include chewing, sucking and applying tobacco preparations to the teeth and gums. Smokeless tobacco products are often made at home but are also manufactured. Recently, a variety of smokeless tobacco products have been produced industrially on a large scale, commercially marketed and are available in small plastic and aluminium foil packets.[21]

Paan (betel quid) with tobacco

Paan chewing, or betel quid chewing, is often erroneously referred to as -betel nut chewing-. Paan consists of four main ingredients betel leaf (Piper betle), areca nut (Areca catechu), slaked lime [Ca(OH2)] and catechu (Acacia catechu). Betel leaves contain volatile oils such as eugenol and terpenes, nitrates and small quantities of sugar, starch, tannin and several other substances.[22]Condiments and sweetening agents may be added as per regional practices and individual preferences. Some time after its introduction, tobacco became an important constituent of paan, and currently most habitual paan chewers include tobacco.

Paan masala

Paan masala is a commercial preparation containing areca nut, slaked lime, catechu and condiments, with or without powdered tobacco. Paan masala contains almost all the ingredients that go into the making of a paan, but are dehydrated so that the final product is not perishable. It comes in attractive sachets and tins, which can be stored and carried conveniently. Paan masala is very popular in urban areas and is fast becoming popular in rural areas. Although the actual prevalence of this practice is not known, its popularity can be gauged by the production figures: according to commercial estimates, the Indian market for paan masala is now worth several hundred million US dollars.

Tobacco, areca nut and slaked lime preparations Combinations of tobacco, areca nut and slaked lime are chewed in several regions of north India, where they are known by different names.

Mainpuri tobacco

In the Mainpuri district of Uttar Pradesh and nearby areas, this preparation is very popular. It contains mainly tobacco with slaked lime, finely cut areca nut, camphor and cloves. In a study of 35,000 individuals in Mainpuri, 7% of the villagers used this product.[23]

Mawa

This preparation contains thin shavings of areca nut with the addition of some tobacco and slaked lime. Its use is becoming popular in Gujarat, especially among the youth. Mawa use is also prevalent in other regions of the country. The prevalence of mawa chewing has increased tremendously in recent years. Its magnitude can be assessed from the fact that the Bhavnagar city administration appealed to the people not to litter the streets with the cellophane wrappers of mawa, as they clogged the city drains!

Tobacco and slaked lime (khaini)

Use of a mixture of sun-dried tobacco and slaked lime, known in some areas as khaini, is widespread in Maharashtra and several states of north India. A regular khaini user may carry a double-ended metal container, one side of which is filled with tobacco and the other with slightly moistened slaked lime. A small quantity of tobacco is taken in the palm and a little slaked lime is added. The ingredients are then mixed vigorously with the thumb and placed in the mouth. In Maharashtra and Gujarat, khaini is placed in the premolar region of the mandibular groove, whereas in Bihar and Uttar Pradesh, it is generally held in the lower labial groove. In the Singhbhum district of Bihar, this product is often kept on the dorsum of the tongue. In a study of over 100,000 villagers in Pune, Maharashtra, 28% used tobacco-slaked lime; the practice was more common among men (52%) than women (10%). In the Singhbhum and Darbhanga districts of Bihar, 27% and 44% of the 4800 and 4856 men, respectively, used khaini and of the 5248 and 5481 women, 10% and 7%, respectively, used khaini.[24]

Chewing tobacco

Small pieces of raw or commercially available finely cut tobacco are used for this purpose. Chewing of tobacco alone, however, does not appear to be very common in India. Among the 10,000 dental outpatients in Lucknow, Uttar Pradesh, and 57,000 industrial workers in Ahmedabad, Gujarat, 2.1% and 2.6% chewed tobacco alone, respectively.[25]

Snus Swedish snuff called snus is available in teabag like pouches. The pouch can be kept in the buccal or labial groove and sucked. It is marketed in India by the Swedish Match Company under the brand name Click.

Tobacco products for application

Several smokeless tobacco preparations such as mishri, gudhaku, bajjar and creamy snuff, are intended primarily for cleaning the teeth. Such use, however, soon becomes an addiction. In India, there is a widespread misconception that tobacco is good for the teeth. Many companies take advantage of this misconception by packaging and positioning their products as dental care products without explicitly stating so. The reason is that by law, oral care products cannot contain tobacco. The law is not strictly

enforced and some oral care products may still contain tobacco.

Mishri

Mishri is a roasted, powdered preparation made by baking tobacco on a hot metal plate until it is uniformly black. Women, who use it to clean their teeth initially, soon apply mishri several times a day. This practice is common in Maharashtra. In a survey of 100,000 individuals in a rural area, 22% were mishri users; the prevalence was 39% among women and 0.8% among men.8 Mishri use is also prevalent in Goa.

Gul

Gul is a pyrolysed tobacco product. It is marketed under different brand names in small tin cans and used as a dentifrice in the eastern part of India. In the Global Youth Tobacco Survey (GYTS), gul use was reported by 6% in Bihar, 3% each in Arunachal Pradesh and Nagaland, 2% each in Assam, UP and Uttaranchal. In similar surveys of school personnel in several northeastern states of India, female school personnel reported significantly higher gul use than males; Assam (13.5% vs 0.1%), Meghalaya (25% vs 1.9%), Nagaland (6.2% vs 1.4%) and Sikkim (46.5% vs 3.9%).[26]

Bajjar

Bajjar is dry snuff (also known as tapkeer) applied commonly by women in Gujarat on the teeth and gums. In a survey of 4844 women in Bhavnagar district, 14% reported using bajjar.[27]

Lal dantmanjan

Lal dantmanjan is a dentifrice; a red-coloured tooth powder. Traditionally, it contained tobacco but after the passage of a law banning the use of tobacco in dental care products, the listing of tobacco as an ingredient was stopped. A laboratory test of five samples of red tooth powder that did not declare tobacco as an ingredient found a tobacco content of 9.3-248 mg per gram of tooth powder. [28]

Gudhaku

Gudhaku is a paste made of tobacco and molasses. It is available commercially and is carried in a metal container but can be made by the users themselves. It is commonly used in Bihar, Orissa, Uttar Pradesh and Uttaranchal. Gudhaku is applied to the teeth and gums, predominantly by women. In the GYTS, the prevalence in these states ranged from 4% to 16%.10,11 In a survey in the Singhbhum district of Bihar, 1% of men and 16% of women used gudhaku.[29]

Creamy snuff Commercial preparations of tobacco paste are marketed in toothpaste-like tubes. They are advertised as possessing anti-bacterial activity and being good for the gums and teeth. These products are thus used like regular toothpaste but users soon become addicted. This practice seems popular with children in Goa.[30]

Tobacco water Tobacco water (known as tuibur in Mizoram and hidakphu in Manipur) is manufactured by passing tobacco smoke through water. Its use was reported by 872 persons (7.2%) among the 12,185 adults surveyed in the Aizawl district of Mizoram and 139 persons (6.5%) among the 2137 adults surveyed in the Churchandpur district of Manipur; use was similar among males and females. The frequency of tobacco water use varied from 1 to 30 times/day; in Aizawl and Churchandpur districts, 36.7% and 92.1% reported being frequent tobacco water users (more than five times a day), respectively.[31]

Nicotine chewing gum

Nicotine chewing gum containing 2% nicotine (brand name good-kha) has been launched as a help for tobacco cessation. For chewers, it is available in gutka flavour and for smokers, in mint flavour.

Areca nut preparations

Some areca nut preparations are chewed without the inclusion of tobacco, but this practice may be present concurrently with the use of smokeless tobacco or tobacco smoking. Alkaloids present in areca nut are known to give rise to carcinogenic nitrosamines and areca nut has recently been evaluated as a human carcinogen by the World Health Organization (WHO).15 The use of areca nut by itself appears to be mildly addictive but when used with tobacco, the effect multiplies manifold. Chewing of areca nut products is very common in India; therefore, a brief resume of these products is included here.

Supari Areca nut is known as supari in several parts of north India. Some commercial supari preparations are made by cutting dried areca nuts into bits and roasting them in fat to which flavouring, sweetening agents and condiments are added. Supari is marketed in attractive aluminium foil packs, in tins and in simple paper packets. Offering supari to guests, especially after meals, is a prevalent and well-accepted social custom.

Meetha mawa Meetha (sweet) mawa consists of thin shavings of areca nut, grated coconut, dried fruits and other sweetening agents. It is used commonly in Gujarat and similar preparations with different names are used widely in other regions. Paan without tobacco Occasional paan chewers generally prefer paan without tobacco.

Chewing paan without tobacco, known as tambula in Sanskrit, is an ancient practice in India. Areca nut is an indispensable ingredient of paan. In addition, a wide range of chewing products including a chewing gum that may not contain either areca nut or tobacco but contains strong betel quid flavours is available in the market.

8. SYMPTOMS OF TOBACCO AND NICOTINE ADDICTION:-

A tobacco addiction is harder to hide than other addictions. This is largely because tobacco is legal, easily obtained, and can be consumed in public. Some people can smoke socially or occasionally, but others become addicted. An addiction may be present if the person:

1. Cannot stop smoking or chewing, despite attempts to quit.
2.Has withdrawal symptoms when they try to quit (shaky hands, sweating, irritability, or rapid hear rate).
3.Must smoke or chew after every meal or after long periods of time without using, such as after a movie or work meeting
4.Needs tobacco products to feel "normal" or turns to them during times of stress.
5.Gives up activities or won't attend events where smoking or tobacco use is not allowed6. continues to smoke despite health problems.

8.1. RISK FACTOR OF TOBACCO AND NICOTINE ADDICTION:-

Tobacco use is one of the leading causes of preventable deaths worldwide, causing various health problems, including lung cancer, heart disease, stroke, and respiratory illnesses. The risk factors of tobacco use include:

- **Nicotine addiction:** Nicotine is the addictive substance in tobacco products. Once addicted, users find it challenging to quit smoking.
- **Genetics:** Some people may be genetically more susceptible to nicotine addiction and the harmful effects of tobacco use.
- **Environmental factors:** Living in a home where people smoke or growing up in an environment where smoking is prevalent may increase the likelihood of starting smoking.
- **Psychological factors:** People with depression, anxiety, or other mental health conditions may use tobacco as a way to cope with stress or negative emotions.
- **Peer pressure:** Adolescents and young adults may feel pressure to smoke to fit in with their peers.
- **Advertising and marketing:** Tobacco companies often target young people with advertising and marketing campaigns that glamorize smoking.
- **Health beliefs and attitudes:** People who believe that smoking is not harmful or who have a positive attitude toward smoking may be more likely to start smoking and continue to smoke.
- **Socioeconomic status:** People with lower socioeconomic status are more likely to smoke and have less access to resources to help them quit.
- **Access and availability:** Easy access to tobacco products, such as being able to purchase them at a corner store, can make it easier for people to start and continue smoking.

It's important to remember that tobacco use is a complex issue with many contributing factors, and quitting smoking can be challenging. However, there are many resources available to help people quit smoking, including nicotine replacement therapy, medications, counseling, and support groups

9. Health Consequences of Tobacco Use

The health consequences of smoking habits, especially of the globally most common form, cigarette smoking, have been studied extensively in many parts of the world. The US Surgeon General-s Report, 2004 reports that smoking harms almost every organ of the body, causing many diseases and reducing the health of the smokers in general. There is sufficient evidence to infer a causal relationship between smoking and vascular diseases such as coronary heart disease, stroke and subclinical atherosclerosis, respiratory diseases such as chronic obstructive pulmonary disease and pneumonia, adverse reproductive effects and cancer at ten sites (Table 4.1).1 Globally, tobacco is responsible for the death of 1 in 10 adults (about 5 million deaths each year) with 2.41 (1.80-3.15) million deaths in developing countries and 2.43 (2.13-2.78) million in developed countries. Among these, 3.84 million deaths were in men. The leading causes of death from smoking were found to be cardiovascular diseases (1.69 million deaths), chronic obstructive pulmonary disease (0.97 million deaths) and lung cancer (0.85 million deaths).3 Fifty per cent of unnecessary deaths due to tobacco occur in middle age (35-69 years), robbing around 22 years of normal life expectancy.4 In developed countries, smoking is estimated to cause over 90% of lung cancer in men and about 70% of lung cancer among women. In these countries, 56%□80% of deaths due to chronic respiratory disease and 22% of cardiovascular deaths are attributable to tobacco. The attributable mortality is greater in males (13.3%) than in females (3.8%). Globally, the attributable fractions for mortality due to tobacco smoking were about 12% for vascular disease, 66% for cancer of the trachea, bronchus and lung cancers combined, and 38% for chronic respiratory disease.5 Globally, the disease consequences of tobacco use (smoking) have been more extensively and better documented than perhaps for any comparable risk factor. This is partly due to the fact that for decades, until recently, the tobacco industry kept on challenging the validity of the findings and refused to accept results that were long accepted by all health scientists. In part, it is also due to the fact that the spectrum of the diseases caused by tobacco use is

very large Even now, as additional research findings become available, more and more diseases are getting linked to tobacco. Tobacco use causes serious diseases because, in addition to nicotine, tobacco contains several toxic and carcinogenic chemicals. The most important group is perhaps the tobacco-specific nitrosamines. Nitrosamines may be found and permitted in items meant for human consumption but in extremely small quantities. Compared to these, nitrosamines found in tobacco products are in abundance and highly carcinogenic. Tobacco smoke contains another class of highly carcinogenic chemicals called polycyclic aromatic hydrocarbons. In addition, smokers ingest a highly toxic gas, carbon monoxide. This gas combines with haemoglobin in the blood and reduces its oxygen-carrying capacity. Earlier, it was thought that the amount of -tar- (condensate formed by tobacco smoke) in a tobacco product was a reasonable measure of its toxicity. However, it is now realized that there are also several toxic chemicals in the gaseous, vapour and particulate phases..[32]

Tobacco and Cancer

LUNG

A case-control study on lung cancer conducted in Chandigarh showed that ever-smoking men (i.e. those who ever smoked regularly) had a 5- fold higher risk (odds ratio [OR] = 5.0) and ever-smoking women had a two-and-a-half-fold higher risk (OR = 2.47) of developing lung cancer compared to non-smokers.Smoking beedis, hookahs and cigarettes was associated with similarly elevated risks. In a population-based case-control study in Bhopal, beedi and cigarette smokers had a 12-fold higher risk for lung cancer than non-smokers. A dose- response relationship was observed, indicating that the more often or the longer smokers used tobacco, the greater was their risk.[33]

Oral Cavity and tounge

The relationship between oral cancer and tobacco use, especially chewing of paan (betel quid) with tobacco, has been reported since the early twentieth century and more recently through a variety of epidemiological and clinical studies. All of the case-control studies conducted on tobacco and oral cancer in India show that the risk of oral cancer increases with the use of tobacco in various forms, compared to non-use of tobacco. Smoking increased the risk of oral cancer relative to non-smokers, and chewing (of tobacco or paan with tobacco) tended to have a higher risk for oral cancer than smoking. The risk of oral cancer for chewers of tobacco (in any form), compared to non-users was high to very high in different studies, with the risk for women being higher than the risk for men. For example, in a study in the three centres of Bangalore, Chennai and Thiruvananthapuram, women had a 46 times higher risk if they chewed paan-tobacco than those women who had never chewed it (RR = 45.9). The men in the study had a 6-fold greater risk of oral cancer if they were paan-tobacco users than if they were never users (risk adjusted for smoking).The women who chewed paan-tobacco in a study in Bangalore had a 25-fold higher risk of oral cancer relative to non-users, while men who chewed paan-tobacco had a 3.6-fold RR compared to non-chewers. Men who smoked had a 3.5-fold significantly greater risk than nonusers of tobacco.There are numerous other case-control studies, all of which show high RRs for smokeless tobacco use (tobacco chewing and snuff). These studies also show a trend of increasing risk with increasing frequency of chewing per day, duration of the habit and with associated habits such as alcohol drinking.Case-control studies have also shown a significant relationship between smoking and oral cancer in India.

It is clear that the scientific evidence of the role of tobacco use in the causation of oral cancer is overwhelming, with tobacco chewing being of particular concern.[34]

OESOPHAGAS

A case-control study in Delhi reported a 2.6- fold greater risk for developing oesophageal cancer in chewers of tobacco with betel quid, relative to non-chewers, and a nearly 2-fold greater risk for beedi smokers (RR = 1.95) in a multivariate model.33 In a case-control study in Bangalore, tobacco chewing gave users a nearly 3-fold higher risk (OR = 2.9) than non-chewers (adjusted for smoking), and beedi smoking a 4-fold greater risk than non-smokers (adjusted for chewing). The risk of cancer in the lower third of the oesophagus for paan-tobacco chewers was 6.6- fold greater than for non-chewers. Beedi smoking in males was a significant risk factor for cancer of all the three segments of the oesophagus, but conferred a 7-fold greater risk for the upper third (OR = 7.1) compared to that of non-smokers. Other studies in Chennai and Thiruvananthapuram have also shown that paan-tobacco chewing and smoking are significant risk factors for cancer of the oesophagus. Dose-response relationships for daily frequency as well as duration of the habit were also found.A case-control study on oesophageal cancer in Assam found that men chewing dried tobacco (chadha) had a nearly 5-fold greater risk of oral cancer compared to non-users. It also found dose-response relationships similar to that in the other studies. Among chewers of more than 20 years- duration, men had more than a 10- fold higher risk (OR = 10.6) and women a 7-fold higher risk (OR = 7.2) relative to non-chewers.[35]In summary, evidence based on a variety of case-control studies

show that both tobacco chewing and smoking increase the risk of developing oesophageal cancer several fold.

Laryanx

In a population-based case-control study conducted in Mumbai, beedi smoking emerged as a significant risk factor for laryngeal cancer, with around 2 times greater risk as compared to non-smokers (RR for beedi smoking: 2.3).A study in Thiruvananthapuram found that, among smokers of over 20 years- duration, beedi smokers had a 7-fold higher risk than non-smokers, and cigarette smokers had a 5-fold higher risk (OR = 7.12 for beedi; OR = 5.18 for cigarette).[36]In summary, two case-control studies found that smoking was a significant risk factor for cancer of the larynx.

Oropharynx

A population-based case-control study in Bhopal found a greater than 7-fold higher risk of oropharyngeal cancer for smoking (OR = 7.3; adjusted for chewing tobacco).26 In a case- control study in Mumbai, beedi smokers had a greater than 5-fold higher risk (OR = 5.6) of cancer of the oropharynx relative to nonsmokers.38 In a case-control study in Nagpur, tobacco chewers had a nearly 8-fold higher risk (OR = 7.98) and tobacco smokers had an over 2-fold higher risk (OR = 2.25) for oropharyngeal cancer compared to non-users in a multivariate model. Dose-response relationships were also observed for increasing frequency, duration and retention time of tobacco in the mouth.[37]

STOMACH

In a hospital-based case-control study on lifestyle risk factors and stomach cancer in Chennai, smokers had a greater than 2-fold increased risk of stomach cancer (OR = 2.7) compared to non-smokers. Significant dose- response relationships were observed with age at which smoking was initiated and with lifetime exposure to smoking. Chewers were not found to have a significant risk of stomach cancer in this study.[38]

Cancer of the cervix

A case-control study on the association of paan-tobacco chewing and dietary habits with cervical carcinoma was carried out in Chennai, in which 205 women with invasive cervical cancer were age-matched with 213 women controls. A dose-dependent direct association of paan-tobacco chewing with invasive cervical cancer was observed.A study on 1962 women screened at a rural cancer detection unit in West Bengal found that 54% of the women with the habit of paan- tobacco chewing had cervical dysplasia (a precursor of cervical cancer), while only 4.1% of non-chewers had such dysplasia (OR = 28.5).[39]

OTHER CITEs

Gallbladder: In a case-control study conducted in Delhi on cancer of the gallbladder among patients with gall stones, smokers had an 11-fold increased risk of developing gallbladder cancer in comparison to non-smokers.Urinary bladder: In a case-control study conducted in Mumbai, tobacco smoking was found to be a risk factor for cancer of the urinary bladder. Penis: A case-control study in Chennai found that men who used snuff had a 4-fold greater risk of penile cancer than non-users; those who chewed tobacco had a 4-fold higher risk in comparison to non-chewers; and men who smoked had a 1.7 times higher risk than non-somking men.[40]

Tobacco and Vascular Diseases

Tobacco and CVD (Indian evidence) The relationship between tobacco and CVD has not been extensively studied in the Indian context. The evidence comes mostly from crosssectional surveys and case-control studies. Data from cohort studies are still awaited. Crosssectional studies have several methodological limitations in assessing causation: survival bias, inability

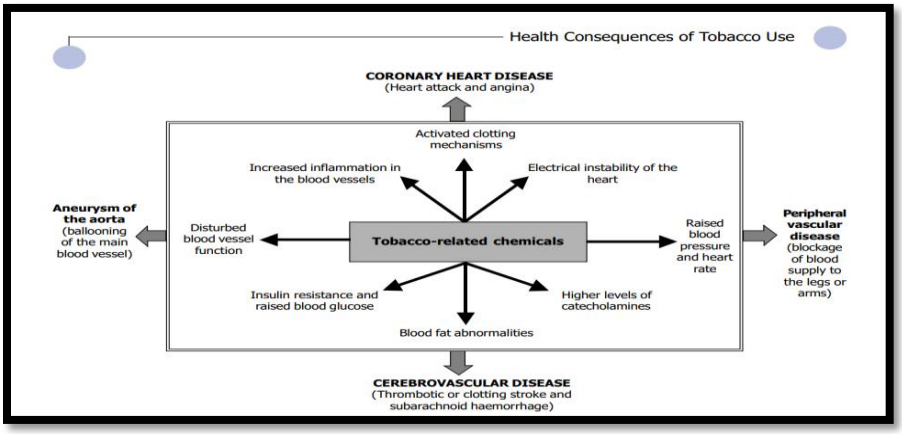


Fig. No. 3 Health consequences of tobacco use

to adjust for multiple confounders and misclassification bias arising from relatively non-specific diagnostic instruments used for the diagnosis of CHD in surveys. In a case-control study conducted in Bangalore, it was found that the most important predictor of acute MI was current smoking of cigarettes or beedis. The odds of acute MI was 3.6 in current smokers overall and, in individuals who currently smoked 10 or more cigarettes per day, it was 6.7 compared to never-smokers. It was also found that compared to individuals without risk factors, those with multiple risk factors had a markedly increased risk. For example, smokers with an elevated blood glucose were 10.7 times more likely to have acute MI.75 In another unpublished case- control study conducted in hospitals in New Delhi and Bangalore, it was seen that, compared to never-smokers, current cigarette smokers who smoked 22 cigarettes per day had an 18-fold increased risk of CHD. Independent association was also found between beedi smoking and CHD risk, with those consuming 25 beedis per day having a 10-fold increased risk.

Tobacco and Lung Disease

There are a large number of clinical and epidemiological reports from India on the prevalence of COPD. The disease was first highlighted in the 1960s from analyses of hospital records of

Table 4.3 Deaths due to respiratory diseases in India and the world in 1990 and 2020[81]

	Deaths			
	1990 Estimated numbers (%)		2020 Projected numbers (%)	
	World	India	World	India
Respiratory diseases (total)	2,935,000 (5.8)	267,000 (2.8)	6,366,000 (9.3)	744,000 (6.5)
COPD	2,211,000 (4.4)	140,000 (1.5)	4,726,000 (6.9)	429,000 (3.8)
Asthma	137,000 (0.3)	20,000 (0.2)	326,000 (0.5)	55,000 (0.5)
Other respiratory diseases	587,000 (1.2)	106,000 (1.1)	1,313,000 (1.9)	261,000 (2.3)

COPD: chronic obstructive pulmonary disease
Figures in parentheses indicate respiratory deaths as percentages of total deaths

Fig. No. 4 Deaths due to respiratory diseases in India and World

patients attending outpatient chest clinics. Chronic bronchitis comprised 2.5% of the total admissions of several hospitals in north India.COPD accounted for 31% of the clinic attendance in 1952-1954 in Punjab.A prevalence rate of 4.1% in males was reported in a large prospective study from Tamil Nadu. Epidemiological studies in the 1990s reported prevalence data from cross-sectional community surveys. The overall prevalence of COPD was found to be 5% in male and 2.8% in female subjects in a cross-sectional survey done in Haryana.In a population survey done among 9090 students, with an age range of 9-20 years, 2.6% of boys were found to have asthma.

Smoking and Pulmonary Tuberculosis

Mumbai, Maharashtra study

Prospective study of 100,000 adults (age 35+ years) in an urban area: Mortality from TB A baseline survey of 99,598 individuals aged 35 years and above in Mumbai (population: 3.4 million) was conducted between 1991 and 1994. The study showed that the relative risk for all cause mortality for ever-smokers compared to never-smokers was 1.6 in men and 1.3 in women. Comparing ever-smokers to never-smokers, the age-adjusted relative risk of death due to TB was 2.6, but this decreased to 2.1 on standardizing for education . A higher relative risk was seen for beedi smokers compared to cigarette smokers.[41]

Tobacco Use and Reproductive Health Outcomes

Indian evidence of tobacco-related association

The effects of beedi, cigarette and other forms of smoking prevalent among Indian women on reproductive outcomes are less researched in comparison to cigarette smoking in western pregnant women, which has been extensively researched. Maternal exposure to second-hand smoke decreases the birth weight of the infant and increases the

proportion of premature deliveries. The average reduction in infant birth weight due to mothers being exposed to second-hand smoke in comparison to non-exposed mothers was 63 g in a study from Vellore, Tamil Nadu144 and 138 g in a study from Chandigarh.Any birth weight differences that could arise between the women exposed to second-hand smoke and the unexposed group due to differences in maternal age, height, parity, social class, months at birth, anaemia and sex of the infant were taken into account in these studies for calculating this smoking-attributable decrease in birth weight. The babies of exposed women were also more likely to be delivered early in both these studies Women who use smokeless tobacco (ST) during pregnancy are more likely to have a low birthweight baby.

The percentage of tobacco-user mothers was higher than non-user mothers in every category of birth weight below 2500 g. Eighty per cent of women ST users in this study used mishri, a burnt tobacco tooth powder.In another study, the average birth weight was reduced by about 100-200 g in tobacco chewers, in all classes of maternal weight, social class and gestational age.In another study, the average birth weight was decreased by 395 g in tobacco chewers. When mothers used ST less than five times a day, the risk of having a low birth weight baby was 50% higher, whereas in mothers who used ST five or more times daily, the risk was over 100% higher than in non-users. The average decrease in birth weight increased with increasing ST use. A statistically significant reduction in birth length of 0.518 cm in tobacco chewers has been reported. Babies born to ST-user mothers were more often growth retarded. It is well known that premature delivery (delivery before the ninth month) is associated with increased risk for foetal, neonatal and perinatal mortality. Preterm deliveries are more common in ST-user mothers; a greater proportion of chewing mothers, in each social class, were delivered at 36 weeks or earlier, and markedly fewer at 39 weeks or later in comparison to non-user mothers. A 40% increased risk was observed for delivery before the ninth month, after taking into account the differences in age, education, socioeconomic status, anaemia, body weight, and antenatal care of women tobacco users and non-users. The percentage of preterm deliveries increased with increasing use of ST. Such very early preterm births in settings where the neonatal care infrastructure is less developed can imply higher death rates during delivery or in the first month of life.146 A research study showed that women who chewed tobacco were 200% more likely to deliver a dead foetus (stillbirth).148 Death of the foetus during pregnancy, delivery or within 7 days of delivery was greater by 57% in tobacco user mothers in another study.[42]

Green Tobacco Sickness Among Tobacco Harvesters

India is the third country to have reported GTS among tobacco harvesters.202 Cross-sectional studies were carried out to assess the prevalence of GTS among tobacco harvesters in four villages of Gujarat, where tobacco is cultivated mainly for making beedis, chewing tobacco and snuff, as well as in a research farm of the Central Tobacco Research Institute (CTRI) at Andhra Pradesh, where mainly cigarette tobacco is grown.203-205 In the two areas of Gujarat, 66%- 70% of the tobacco workers studied (n=975) were men, while in Rajahmundry (Andhra Pradesh) 69% of the tobacco workers studied (n=289) were women . Among men, 68%-75% of tobacco workers (exposed

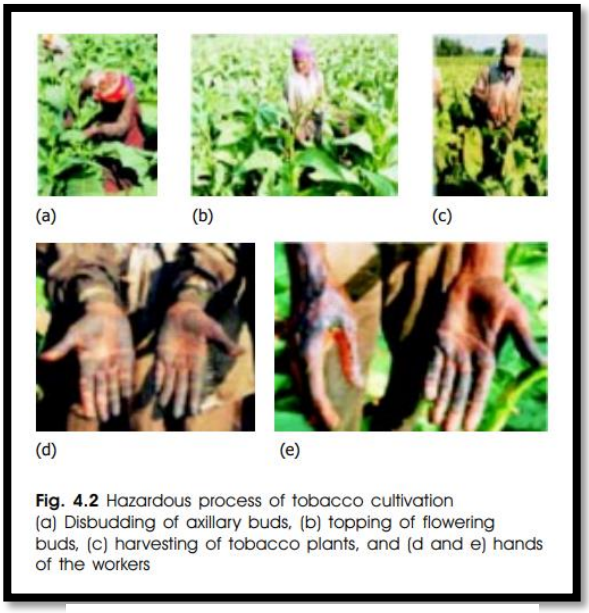


Fig. 4.2 Hazardous process of tobacco cultivation (a) Disbudding of axillary buds, (b) topping of flowering buds, (c) harvesting of tobacco plants, and (d and e) hands of the workers

Fig. No. 5 Infected hands of workers

workers) smoked in the three study areas, while in the control areas, 57%-75% of agricultural labourers were smokers. In Gujarat, only a minority of exposed women workers were smokers: 6.8% of the women working in the beedi tobacco fields of Sanand and 0.4% of the women working in chewing and snuff tobacco fields of Anand. In the control areas of Gujarat, 0%-0.4% of women agricultural workers smoked. In Andhra Pradesh, the percentage of smoking in women workers was higher (36% in the exposed women and 10.6% in the control women). With regard to the habit of taking snuff, about 31% of women beedi tobacco workers in Sanand, and 51% of women labourers in the control area had this habit. In

Anand, most women workers were occasional snuff users. Headache, giddiness, nausea and vomiting were the four most common symptoms observed in all tobacco workers. The overall prevalence of GTS was higher (86.2%) among beedi tobacco cultivators compared to cigarette tobacco cultivators (60.6%).[43]

9.1.TREATMENT FOR TOBACCO AND ITS ALTERNATIVE STRATEGIES:

There are many treatments available for tobacco addiction. However, this addiction can be very difficult to manage. Many users find that even after nicotine cravings have passed, the ritual of smoking can lead to a relapse.

There are several different treatment options for those battling a tobacco addiction:

The patch: The patch is known as a nicotine replacement therapy (NRT). It's a small, bandage-like sticker that you apply to your arm or back. The patch delivers low levels of nicotine to the body. This helps gradually wean the body off it.

Nicotine gum: Another form of NRT, nicotine gum can help people who need the oral fixation of smoking or chewing. This is common, as people who are quitting smoking may have the urge to put something into their mouths. The gum also delivers small doses of nicotine to help the you manage cravings.

Spray or inhaler: Nicotine sprays and inhalers can help by giving low doses of nicotine without tobacco use. These are sold over the counter and are widely available. The spray is inhaled, sending nicotine into the lungs.

Medications: Some doctors recommend the use of medication to help with tobacco addictions. Certain antidepressants or high blood pressure drugs might be able to help manage cravings. One medication that's commonly used is varenicline (Chantix). Some doctors prescribe bupropion (Wellbutrin). This is an antidepressant that's used off-label for smoking cessation because it can decrease your desire to smoke.[44]

Alternatives herbal treatment for tobacco:

There are several herbal treatments that may be helpful in reducing tobacco cravings and aiding in the process of quitting smoking. Here are some examples:

Lobelia: Also known as Indian tobacco, lobelia has been used traditionally to help reduce tobacco cravings. It contains an alkaloid called lobeline, which is similar to nicotine in structure and may help to reduce withdrawal symptoms[45]

St. John's Wort: This herb is commonly used to treat depression, but it may also be helpful in reducing tobacco cravings. St. John's Wort has been shown to increase levels of the neurotransmitter dopamine in the brain, which is important for mood regulation.[46]

Ginseng: Ginseng has been used in traditional Chinese medicine for centuries as a natural remedy for a variety of health issues, including smoking cessation. It may help to reduce stress and anxiety, which can be triggers for smoking.[47]

Passionflower: This herb is commonly used as a natural sleep aid, but it may also be helpful in reducing tobacco cravings. Passionflower contains compounds that can help to reduce anxiety and promote relaxation.[48]

Valerian root: Similar to passionflower, valerian root is often used as a natural sleep aid. However, it may also be helpful in reducing tobacco cravings by promoting relaxation and reducing anxiety. It is important to note that herbal treatments should be used under the guidance of a healthcare professional, as some herbs can interact with medications or may not be safe for certain individuals. Additionally, herbal treatments should not be relied on as the sole method of quitting smoking, but rather as a complementary therapy to other strategies such as counseling and nicotine replacement therapy.[49]

Psychological and behavioral treatments:

Some people who use tobacco have success with methods such as:

• Hypnotherapy
• cognitive-behavioral therapy
• neuro-linguistic programming

These methods help the user change their thoughts about addiction. They work to alter feelings or behaviour your brain associates with tobacco use.[50]

Treatment for a tobacco addition requires a combination of methods. Keep in mind that what works for one person won't necessarily work for another. You should talk to you doctor about what treatments you should try.

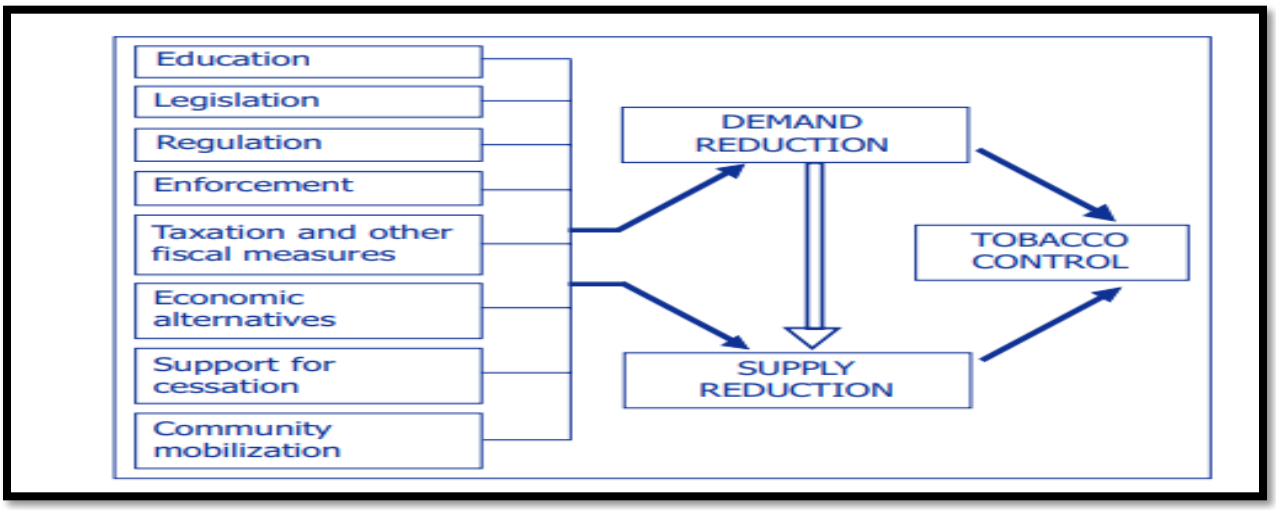


Fig No. 6 Action to reduce demand and supply

10.Tobacco control: What can be set right?

The grim scenario of rising tobacco-related burdens need not be regarded as fait accompli. There is an alternate vission one of effective tobacco control. There are several ways in which the menace of tobacco can be countered and diminished, if there is a political will and collective societal commitment to strengthen tobacco control in India. This chapter indicates how this can be accomplished, through the following steps.[51]

1. Raise taxes on all tobacco products to increase prices and generate revenue for tobacco control The case for this has been extensively argued . The potential for augmenting tax revenue through tobacco tax increases is vast. In 2002, the excise tax revenue from tobacco was around Rs 5600 crore (Rs 56 billion). This was mostly derived from the taxes on cigarettes, which constitute about 14% of the Indian tobacco market. The beedi sector and oral tobacco products sector were virtually untouched. Even if one were to ignore the largescale evasion of excise tax in the cigarette sector, the yield of Rs 5600 crore (Rs 56 billion) from that sector indicates the potential for additional revenue from the other tobacco sectors, if they are brought on par with the cigarette sector in the taxation scheme. Theoretically, the excise tax revenue could be raised to anywhere between Rs 20,000-30,000 crore (Rs 200-300 billion) per year if the entire tobacco sector was taxed at the rate of the cigarette segment.[35] Even if this were considered impractical, it is not difficult to envisage a taxation scheme which imposes a higher level of taxes than at present on beedis and oral tobacco products and, thereby, generates an additional revenue of Rs 6000 crore (Rs 60 billion) per annum. This would also be possible if an earmarked tobacco cess was proposed that covers cigarettes in addition to other tobacco products. Even if a total ban were to be imposed on the manufacture and sale of oral tobacco products (see below), the taxation of smoked tobacco products (cigarettes and beedis) alone could produce an additional revenue of Rs 6000 crore (Rs 60 billion) through a combination of excise tax parity and an earmarked cess.[52]

2. Spend the additional revenue on social sector initiatives benefiting the poor and on strengthening tobacco control programmes Since the poor are the predominant consumers of tobacco in India (especially in non-cigarette forms such as beedis and chewed tobacco), it is sometimes argued that the increased tax burdens on tobacco products would adversely affect the poor. Apart from the fact that increased tobacco taxes would raise tobacco product prices and, thereby, reduce consumption of those harmful products (especially by the poor who are more price-sensitive than the rich), the best way to counter the argument is to spend a large fraction of the tobacco tax revenue on social sector programmes especially intended to benefit the poor. About half of the extra money generated through new mechanisms (earmarked tax/cess and rationalization of the excise tax structure) could be utilized for funding programmes intended to increase the access of the poor to school education and primary health care, especially in rural areas and urban slum settings, where tobacco use is particularly high. Investment in education and alleviation of poverty will address the main social determinants of tobacco use and help vulnerable groups to escape the curse of tobacco addiction. A part of this money could be utilized for providing education and vocational training to the children who are presently engaged in the production of beedis and oral tobacco

products.[37]The remaining half of the extra revenue could be utilized specifically for strengthening tobacco control efforts: education of people through the mass media; specially targeted educational programmes, such as for children and adolescents, women-s groups and workers; establishing and strengthening community based and clinic-based tobacco cessation services; establishing tobacco product testing laboratories for regulatory purposes; providing support to civil society groups for undertaking activities related to tobacco control; encouraging research which will provide policy- and programme-relevant information that can help improve the effectiveness of tobacco control measures; establishing efficient tobacco surveillance mechanisms to monitor the patterns of tobacco use and their consequences; invigorating enforcement mechanisms; integrating tobacco control into other development-oriented programmes and creating national-, state- and district-level coordination mechanisms.[53] A part of this money could also be utilized for undertaking operational research into the identification of appropriate mechanisms to facilitate the shift of tobacco farmers to alternative crops. The creation of such a large fund for tobacco control will also enable the Central Government to provide adequate resources to the State Governments for undertaking effective tobacco control programmes. Without such resources to back up the programmes, the vision of tobacco control will remain confined to Central plans as the States will find it difficult to implement the programmes at the desired level. Infusion of funds into State-level programmes will encourage decentralized design and delivery of activities related to tobacco control, and ensure that the mission to combat tobacco becomes a truly national endeavour.[54]

3. Impose a ban on oral tobacco products such as gutka

While imposition of an immediate ban on the manufacture and sale of all tobacco products may not be regarded as a feasible course of action for the government to undertake due to a variety of economic and political reasons, there is a strong case for imposing such a ban at least on oral tobacco products. These products are relatively new in the market but are rapidly converting many Indians into addicts and victims.[40] This phenomenon is especially pronounced in the case of children and women, who are usually deterred from smoking by social taboos but can chew tobacco without such inhibitions. Children, in particular, can access these low-priced and easy-to-carry pouches without the fear of detection. The ban on smoking in public places does not extend to the use of chewed tobacco products. Some adults may, therefore, add the chewing habit to their smoking habit, to satisfy the constant craving for nicotine. High rates of oral cancer are likely to result at younger ages from such addictions becoming established in children and young adults.[41] Even at present, India has the highest number of oral cancer cases in the world. A ban on oral tobacco products would, therefore, constitute a timely public health measure. The danger of such a ban failing, due to smuggling and black market sale of oral tobacco products, is not high. Very few countries manufacture oral tobacco products and none on the scale that India does. Countries such as Australia have banned the manufacture and importation of oral tobacco products and have effectively prevented their entry through smuggling. In any case, India needs to counter the smuggling of all types of tobacco products and oral tobacco products too would be covered by that umbrella of vigilance against illicit trade. The ethical and legal case for such a ban is also strong. The -harm principle- and -precautionary principle- which are invoked for protection of the environment are equally applicable for the protection of public health.[55] While the whole world is still struggling with the folly of having permitted smoked tobacco products to become established as legal commodities before their harm was adequately recognized, India can at least take steps to eliminate the most recent entrant into the market, on the grounds of manifest and potential threats to health. The provisions of the Prevention of Food Adulteration Act can be effectively invoked to impose such a ban. The Supreme Court of India did not refute the legal basis for such a ban by the Central (Union) Government. While striking down the ban on gutka imposed by some State Governments, it opined that such a ban could be imposed only by the Central Government . It is now for the Central Government to act decisively in this matter.[56]

4. Strengthen enforcement of existing laws and regulations

In 2003, India enacted one of the most comprehensive and powerful anti-tobacco laws in the world. Many of the provisions are in conformity with the Framework Convention on Tobacco Control (FCTC) and some are even stronger than those recommended in the FCTC. The rules related to some of the legal provisions have been notified and others are under preparation. The implementation of these rules, however, needs careful attention. If the rules are not adequately enforced, it would defeat the purpose of the legislation and erode the confidence of the people in the process of tobacco control. The agencies involved in enforcement, at Central and State levels, should be strengthened quantitatively and qualitatively, so as to adequately address the needs of enforcement. This would mean investment in periodic training, establishment of easy

reporting and early response systems to deal with violations, coordination mechanisms for concerted action by different enforcement agencies and monitoring methods for evaluating successes and failures.

Successful enforcement of anti-tobacco laws also requires community mobilization to increase people-s awareness, enlist their support for the laws and involve them in reporting and -watchdog- functions. This mandates a continuing educational effort as well as the formation of local community-level implementation and monitoring bodies which will act in tandem with the official enforcement agencies. The support of civil society groups is essential in this context.[57]

5. Establish coordinating mechanisms at Central and State levels

The mandate of tobacco control involves multisectoral actions, to be undertaken at multiple levels (both within the government and in the broader society). This requires efficient planning, effective coordination and close monitoring. The need for national coordinating mechanisms has been recognized by the FCTC and has been amplified in the Indian context . The agenda of comprehensive tobacco control in India will flounder if such mechanisms are not established for facilitating regular consultations among major stakeholders and concerted action by implementing agencies. The establishment of Central- and State-level inter-ministerial coordination committees and a National Coordinating Body (such as a National Commission for Tobacco Control) would be essential for this purpose. [58]

6. Mobilize the people through mass education and community empowerment

All of the governmental measures for tobacco control will succeed only if there is a growing groundswell of popular support for the cause and increasing levels of community participation in the process of implementation. It is essential, therefore, to increase the knowledge, motivation and skills of the people through mass education, and to create strong community-level coalitions to combat tobacco through government-supported civil society action. The media too, in its varied forms, needs to be effectively enlisted as a partner in this effort. The energy and idealism of the youth also need to be channelled into well-designed anti-tobacco campaigns to make them powerful agents of social change.[59]

7. Promote tobacco cessation through many avenues

If the objective is to reduce tobacco-related burdens by 2020, it is absolutely essential to promote tobacco cessation effectively and extensively, as most of the burdens of death and disease due to tobacco over the next two decades would arise from current consumers of tobacco. Success in tobacco cessation will yield early benefits in terms of reduced cardiovascular death rates, as the risk of a heart attack is substantially reduced (close to normal) by stopping smoking for 3 years. The cancer risk is lowered more slowly, but some gains would be made in this area too. Clinic-based counselling services are useful, but they need to become available at the level of primary health centres, and support for cessation must become part of the routine general medical and health care practice. Community-based cessation facilities, which can be run by trained laypersons (especially civil society groups), should become the main model for cessation. The potential role of indigenous methods such as yoga and Indian systems of medicine should be scientifically evaluated. Research needs to identify cessation techniques which are especially appropriate for oral tobacco users and young persons, since most of the available global cessation research has focused on adult smokers.

8. Restrict the import of tobacco products into India

The rules of the World Trade Organization (WTO) require all member states of WTO to adopt non-discriminatory trade practices. Unfortunately, this is often interpreted to mean that foreign manufactured tobacco products have the right to freely enter and compete in the Indian market. India can, however, effectively restrict the entry of such products by setting stringent regulatory standards for domestic tobacco products, which the foreign tobacco products have to match. Such standards could be set in terms of: the content of toxic chemicals such as tar, nicotine, carbon monoxide, nitrosamines and polycyclic hydrocarbons in the products or their emissions; the nature of packaging and labelling, especially with respect to the size and content of the health warnings and the languages used to convey them; the frequency of regulatory testing and the disclosures required to be made by the industry. Even if some of the foreign manufacturers do comply with these regulations, their uniform application to both foreign and domestic tobacco products will ensure a strong and effective regulatory environment which will, in turn, influence domestic consumption.

9. Progressively reduce the area of land under tobacco cultivation in India

A reduction in the demand for tobacco, through reduced consumption, would lead to reduced production of tobacco, over time. However, the aggressive attempts of the tobacco industry to fully utilize the domestic production of tobacco to produce a greater variety of tobacco products as well as interventions by the government to provide distress subsidies to tobacco farmers may delay such a market

response. It would be in the interest of tobacco control if the supply of tobacco is also reduced, alongside effective measures to reduce the demand.[59-60]

11.SURVEY METHODOLOGY:

Participants: On The Survey Topic i.e. Tobacco control in India ,its impact on human and Society , Exploring Alternative And Strategies For Tobacco get responses from different districts of Maharashtra such as Washim , Hingoli , Nanded, Amravti , Akola etc.

Procedure: I send the google form request to the in the form of mail and WhatsApp order to know the how people consumption of tobacco and nicotine related product I request to fill this form related to your tobacco consumption issue and benefit I sent lots of people but I received about 40 response , I created a Google form questions to those people they are consumption of tobacco and addicted with nicotine through the google form link and I told addicted people this is my survey on the tobacco and nicotine addiction on people how to fill after consumption of tobacco and nicotine related and told them about my research in short and discuss with and some people on direct call and then send Google form link on their WhatsApp with request message. Hello,"I am Chaitanya Madan More B. Pharm final year (viii semester) student studying in Shraddha Institute of Pharmacy, kondala zambre, Washim , Sant Gadge Baba Amaravti University. I have get the project from the my college the name of the project is "Tobacco control in India" so I wanted after the some responses to know about the problems of tobacco addiction and nicotine addiction that's why I created the google form and sent to tobacco addicted people and people are filled the option about there issue occurances in tobacco addiction question asking in Marathi, Hindi and English language and requested to answer in Marathi , Hindi and English , kindly give your valuable time to give response.

QUESTIONNAIRE:

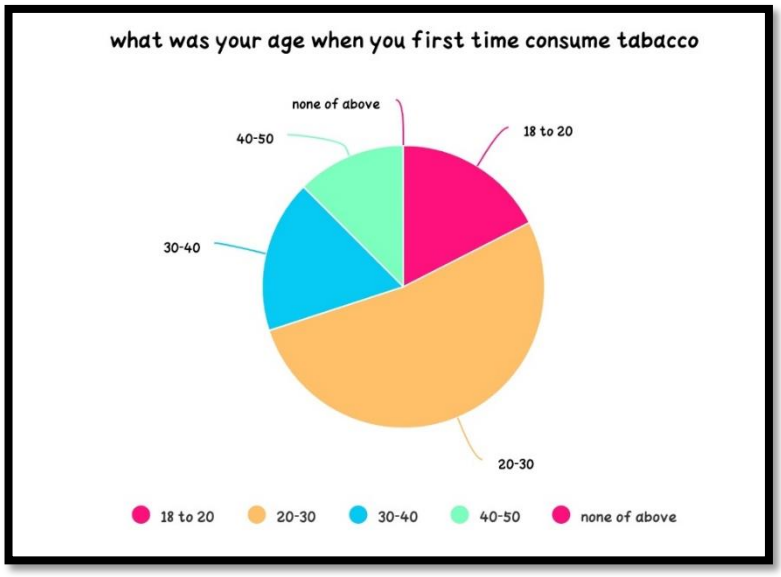
Question 1:

Demographic data:

- Age
- Education
- Name
- E-mail

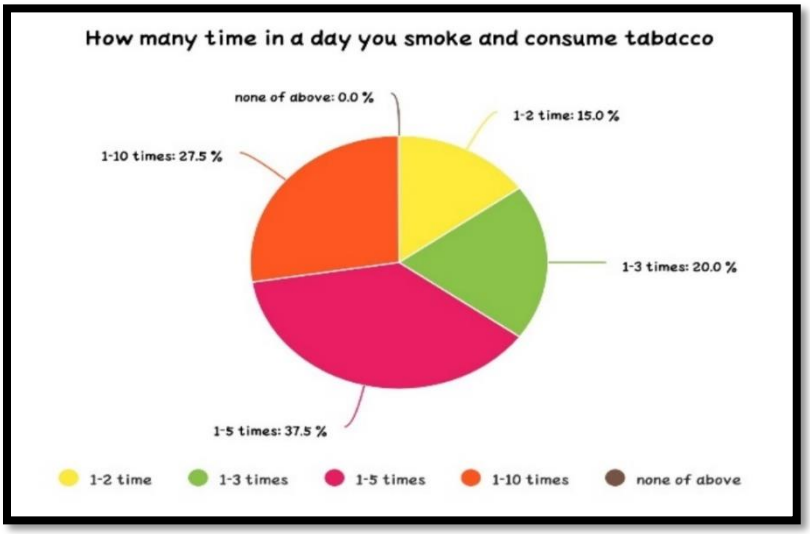
1)What was your age when you first started smoking and Tobacco consumption.

- 18-20 year
- 20-30 year
- 30-40 year
- 40-50 year
- none of above



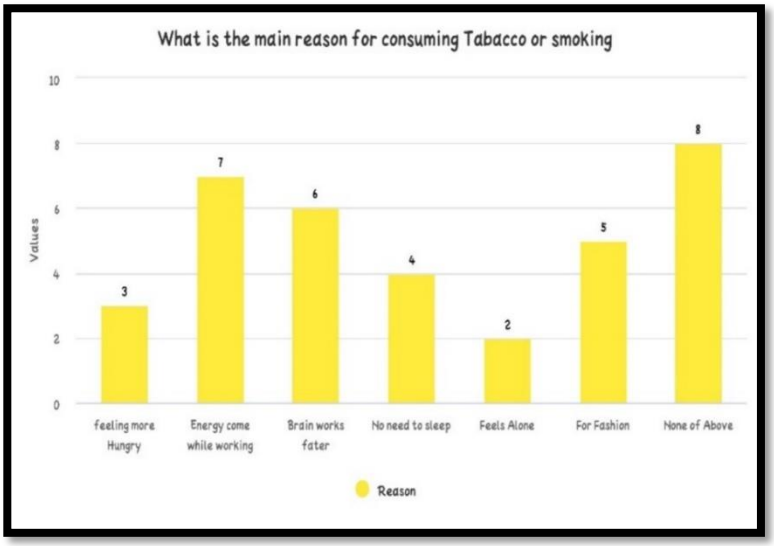
2)How many times a day do you consume tobacco or gutka?

- 1-2 time
- 1-3 time
- 1-5 time
- 1-10 time
- None of above



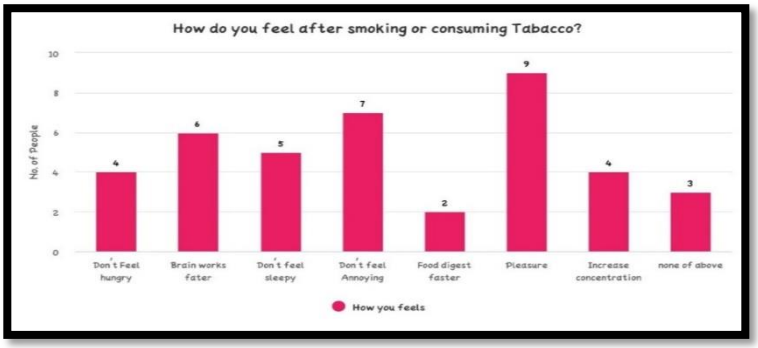
3)What do you think is the main reason for consuming tobacco or gutka?

- Feel more hungry
- Enery comes while working
- Brain works Faster
- NO need to sleep
- Feels alone
- For fashion
- Other:



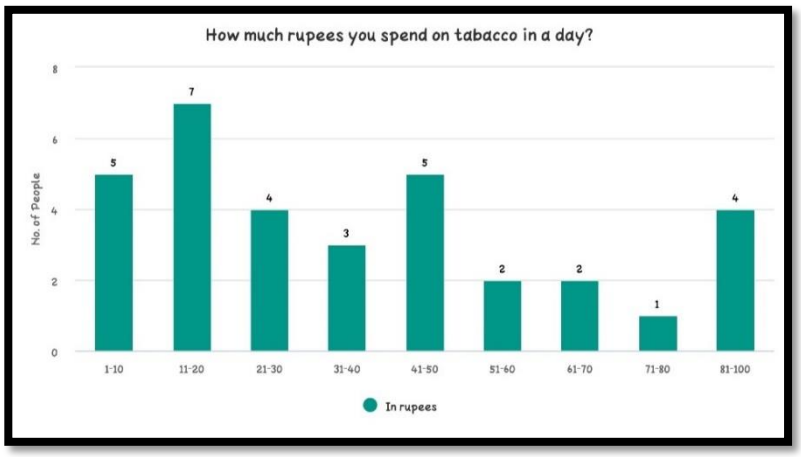
4)How do you feel differently after smoking tobacco?

- Don't feel hungry
- Brain works faster
- Don't feels sleepy
- Don't feel Annoying
- Food Digest faster
- For Pleasure
- Increase concentration
- Other:



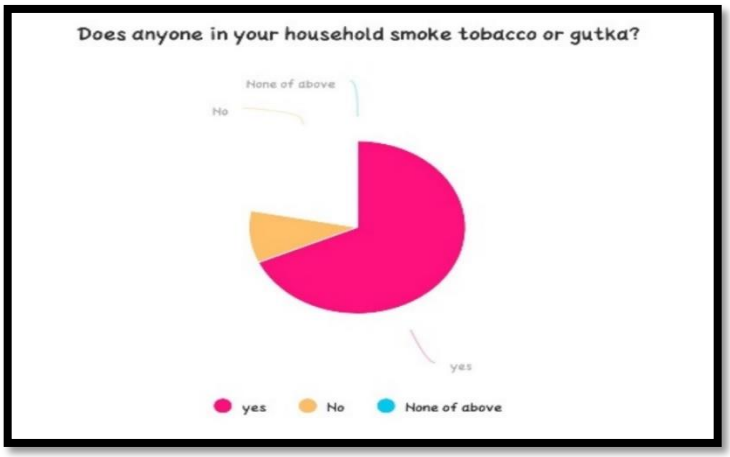
5)How much rupees you spend on tobacco in a day?

- 1-10 rupees
- 11-20 rupees
- 21-30 rupees
- 31-40 rupees
- 41-50 rupees
- 51-60 rupees
- 61-70 rupees
- 71-80 rupees
- 81-100 rupees



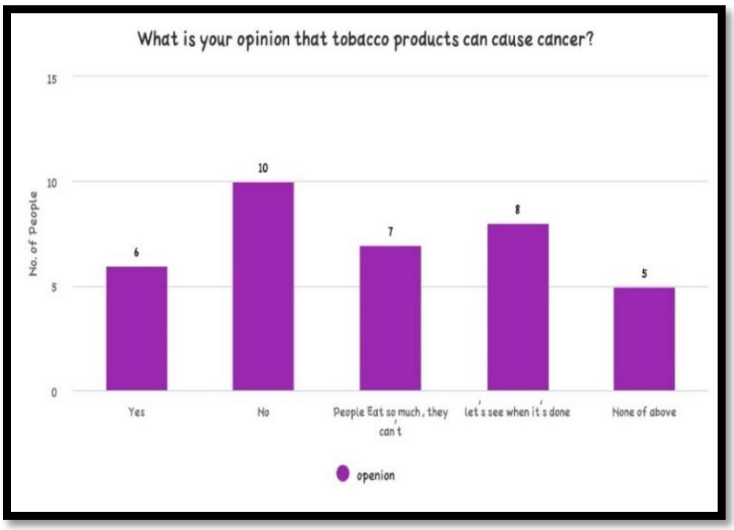
6)Does anyone in your household smoke tobacco or gutka?

- Yes
- No



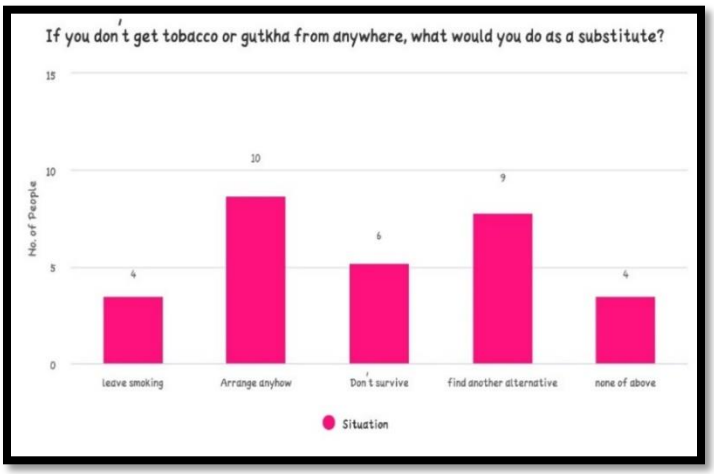
7)What is your opinion that tobacco products can cause cancer?

- Yes
- No
- People eat so much , they can't
- Let's see when it's done
- None of the above



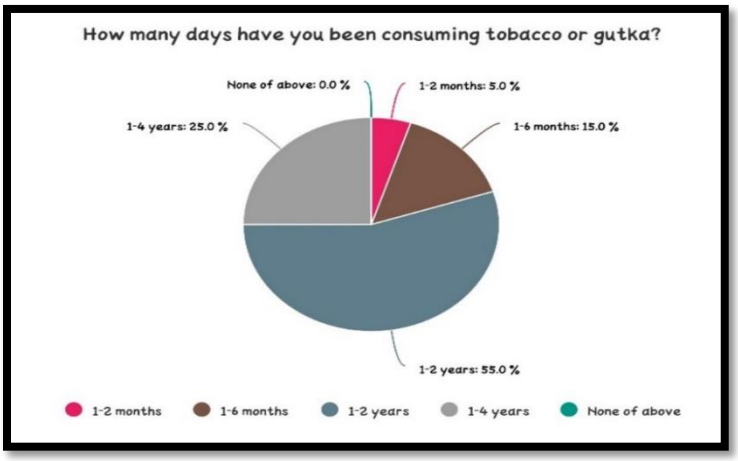
8)If you come across tobacco or gutkha are banned from anywhere, what would you do as a substitute?

- Leave smoking
- Arrange anyhow
- Don't survive
- Find another alternative
- None of above



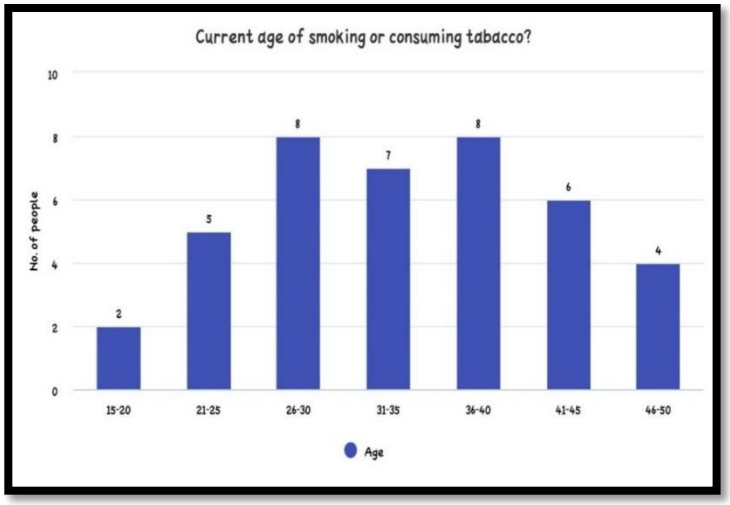
9)How many days have you been using tobacco or gutka?

- 1-2 months
- 1-6 months
- 1-2 years
- 1-4 years
- None of above



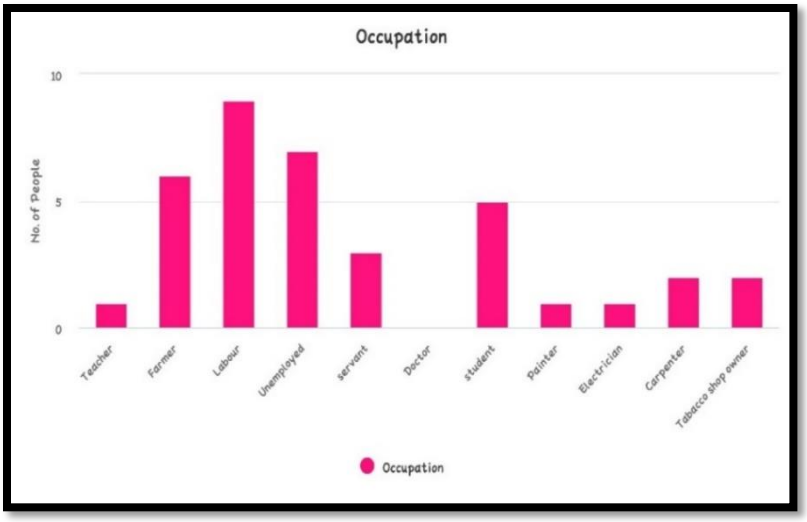
10)what is your Current age of smoking or consuming tobacco ?

- 15-20 yr
- 21-25yr
- 26-30yr
- 31-35yr
- 36-40yr
- 41-45yr
- 46-50yr



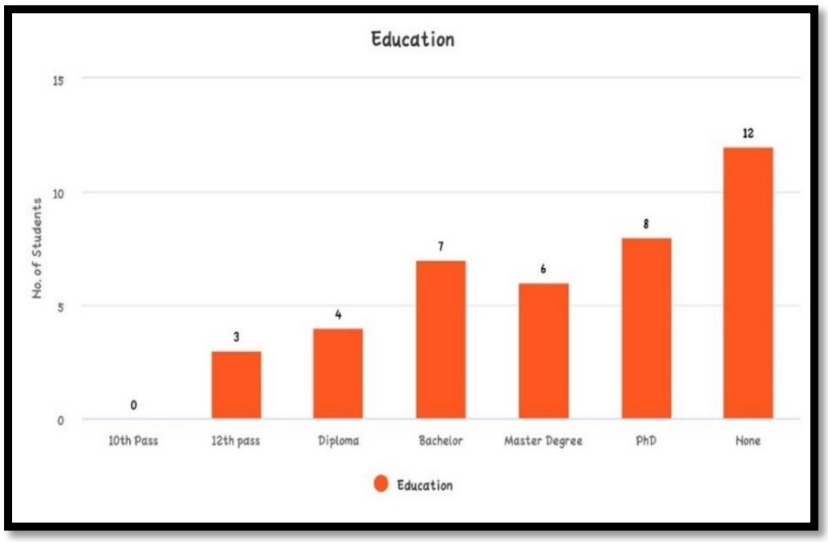
11)Occupation

- Teacher
- Farmer
- Labour
- Unemployed
- Servant
- Doctor
- Student
- Painter
- Electrician
- Carpenter
- Tobacco shop owner



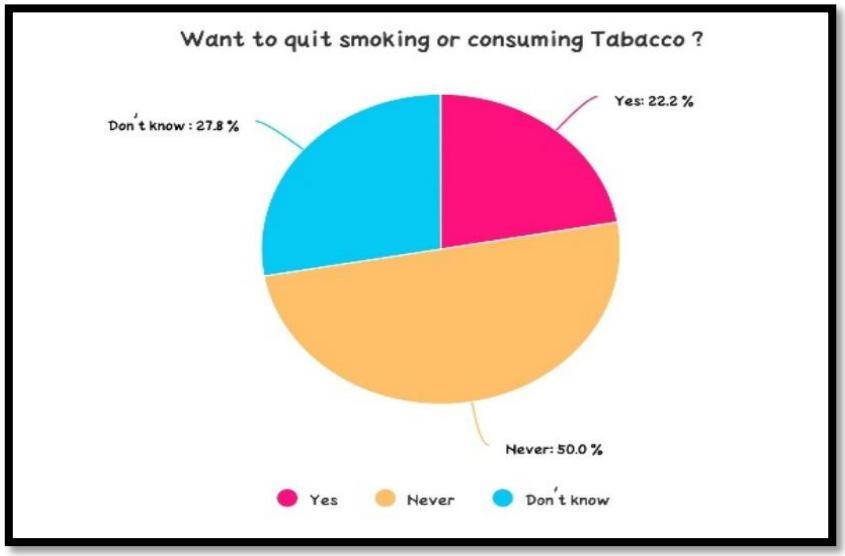
12)Education

- 10th pass
- 12th pass
- Diploma
- Bachelor
- Master degree
- Phd
- none



13)Want to quite smoking or consuming tobacco ?

•Yes
•No
• Don't Know



12.Evaluation

School programmes

Evaluation of school-based education programmes for the prevention of tobacco use should be conducted frequently in both public and private schools.

Local programmes

At least 10% of the budget of each local project should be used for tobacco control. The state programme should ensure the quality of evaluation of local programmes by providing guidance, training and technical assistance to programme evaluators. Experience in California and Massachusetts has shown that these funds can be used both for statewide systems and to increase the technical capacity of local programmes to perform evaluation activities.

Media campaigns

Evaluation of statewide media campaigns should be based on surveillance data, and a media- tracking study should be done for each campaign.

Tobacco industry's activity

The evaluation should also monitor the tobacco industry's marketing practices and its influence on the social, economic and health environment of the community.

Some examples of best practices in surveillance and evaluation activities are as follows:

• National surveillance systems such as the Behavioral Risk Factor Surveillance System enables states in the USA to evaluate programme efforts in relation to ongoing efforts and initiatives in other states. States have enhanced these national systems by adding state-specific questions and modules to capture local data.

• Several states in the USA conduct tobacco-specific surveys to complement the broader surveillance data systems. These include school-based tobacco surveys, surveys of adults, opinion leaders, health care providers, etc.

• Periodic special statewide surveys of adults and young people have been conducted in several states in the USA to evaluate the exposure to tobacco and participation in major programme elements, particularly the media.

Commemoration of they World No Tobacco Day

The Ministry of Health and WHO collaborate with various agencies to commemorate the World No Tobacco Day on a large scale each year for wider dissemination of the theme for that year. The Union Health Ministers as well as several State Ministers and Governors have been involved in the events organized in Delhi and other states of India on this day. Health institutions and NGOs in almost every state of India organize events around the theme of the World No Tobacco Day every year. The array of activities ranges from awareness through rallies, street plays, seminars to advocacy events, such as submission of anti-tobacco signature campaigns to government officials and policy- makers.

Efforts undertaken by State Governments.

The Public Health Department of Maharastra initiated its tobacco control drive in the year 1986 with a campaign against smoking. The Public Health Department adopted a slogan and displayed posters on the impact of passive smoking. The slogan, Your smoking is injurious to our health was effectively used by non- smokers to counter the indifference of smokers.

Efforts made by NGOs in education

Interventions made by NGOs in different states have had different outcomes. Considerable publicity gets generated locally when there is press coverage, and serves as the cheapest medium for generating awareness about tobacco. Some NGOs also use the local cable network for making people aware about the tobacco menace.

Initiatives taken by State Voluntary Health Associations

Many civil society organizations have, on their own or with support from WHO and the Ministry of Health, taken up tobacco education their constituencies. Many State Voluntary Health Associations (SVHAs), which are federal units of the VHAI, have integrated tobacco as part of their ongoing training programmes, are implementing and monitoring Health Ministry- and WHO-supported projects, have conducted surveys, brought out IEC materials, approached legislatures and have taken up tobacco awareness education programmes.

13. RESULT AND DISSCUSION:

Result

The results of such interventions can only be evaluated through systematic observation and analysis. In the absence of widespread experience of such interventions being applied in the Indian context, a forecast of the results would be speculative. However, there is suffi-cient strength in the foundations of international experience to attempt to erect a model of the likely impact of a comprehensive tobacco control programme in India.If all oral tobacco products are banned completely, a sizeable segment of tobacco consumption in India would be removed. Even if half of the oral tobacco consumers switch to smoking cigarettes or beedis to satisfy their craving for nicotine, such a ban is likely to have a major impact on women, children and adolescents. A reduction in the prevalence of tobacco consumption, to the extent of 10%ñ 20%, is therefore likely to result from such a measure.

Fiscal measures, in which tax increases are used to raise the price of tobacco products and lower their consumption, are likely to result in a further reduction in the prevalence of tobacco use. Such measures will serve especially well to rescue the poor from a deadly addiction. The prevalence is, therefore, likely to fall by another 5%. If other demand-reduction measures recommended by the FCTC (and mostly enacted by the Indian law) are effectively implemented, and educational efforts to enhance popular awareness of the ills associated with tobacco penetrate the mass consciousness, there would be an additional impact on tobacco use prevalence, which may be further reduced by 5%ñ10% over the next 5 years. If cessation attempts are encouraged on a wide scale, utilizing methods which are identified to be cost-effective in the Indian context, further reductions in prevalence could occur, ranging between 5% and 10% over the next 5 years.

Based on the recent Task Force review and recent studies, comprehensive tobacco control programs lead to an 8% (4%-12%) short-term relative reduction, increasing to a 12% (6%-18%) long-term relative reduction in smoking prevalence through the greater impact on youth smoking.

Raising cigarette taxes , implementing comprehensive SFALS , banning all tobacco advertising , promotion and sponsorship , and funding comprehensive tobacco control programs , particularly those that include media campaigns are highly effective strategies for reducing prevalence. Cessation treatment policies and prominent graphic health warning are likely to be especially effective in increasing quit success when combined with other policies that increase quit attempts.

DISCUSSION:

There are several reasons why India can hope to achieve an even higher rate of reduction, through a combination of measures discussed in this thesis. Given the low level of tobacco control activities so far and the sparse resources allocated till now for that purpose, a comprehen-sive National Programme for Tobacco Control that is well resourced is likely to have a high impact. If higher taxes and price increases worked well in rich countries, they will work even better in India, where price elasticity is higher. A ban on oral tobacco products too will have an immediate impact. The complete ban on advertising and the countrywide ban on smoking in public places in India go further than the US regulations. It is also likely that the global efforts at tobacco control would be galvanized after the coming into force of the FCTC (around early 2005).The events that would occur subsequently across the world would considerably influence and possibly help the Indian efforts at tobacco control. In such a conducive global environment, the National Programme for Tobacco Control may accomplish even better results than suggested above. India should aim to achieve at least a 30% reduction in the prevalence of tobacco consumption by 2020 and a 25% reduction in tobacco-related mortality by 2050. These targets are not modest, considering the large projected rise in tobacco-attributable mortality that hasThe survey topic of the impact of tobacco use on humans and

society is of great significance due to the widespread health and social implications associated with tobacco consumption. The discussion on this topic encompasses various aspects, including the health effects on individuals, the economic burden on society, and the exploration of alternatives and strategies for tobacco control.

14. SUMMARY AND CONCLUSION:

SUMMARY:

(All over India Analysis)The studies done in India show a 2- to 4-fold TB prevalence/incidence ratio among males based on the age range analysed in the study, and the smoking-associated proportion was 41%-56%. In 2000, the prevalence of all reported cases of TB among males aged 15 years and above in 1998-1999 was 552 per 100,000 population. The burden of TB in India among those aged 15-59 years was 4.0 million . The death of about half of all TB cases among males would have been avoided if the smokers had had non-smoker TB death rates. The death of about half of all TB cases in 2000 about one million would have been avoided if the smokers had had non-smoker TB death rates.

Despite some limitations in a few of the studies discussed here, a strong, consistent association does emerge in them. TB is known to be strongly associated with socioeconomic status and other factors such as alcohol use. Thus, confounding from some unknown risk factors remains a possibility but, given the magnitude of the risk, it is highly unlikely to nullify the observed association with smoking. The studies done in Tamil Nadu estimated that in India, at the death rates of the year 2000, there would be about 700,000 deaths a year due to tobacco smoking, of which about 200,000 would involve pulmonary TB. Half of these tobacco-attributed TB deaths are of men still in their thirties, forties and early fifties.The percentage of smokers among those who died of TB in the Tamil Nadu and Mumbai studies was much higher than the percentage of smokers in the general population. After standardization for age, educational level and tobacco chewing, the results in both the urban and rural areas in Tamil Nadu indicate a mortality ratio (ever-smoker versus never smoker) of about 4. The results of the Mumbai study indicate an age-standardized mortality ratio of about 3. The magnitude of these RRs are too high to be explained by only confounding. In general population surveys and case-control studies, the proportion of adults who reported a current or previous history of TB (self-reported TB) and the proportion with confirmed TB (by laboratory tests) are substantially higher among ever-smokers than among never-smokers. This indicates that smoking acts more to increase the incidence of clinical disease than to increase the probability that clinical disease will lead to death from TB. This is because an increased case fatality rate among smokers would selectively remove smokers from the population of patients with TB, and would therefore tend to reduce rather than increase the proportion of smokers in live patients who are detected to have the disease in a survey or a case-control study. Further evidence of causality is that the heavier the exposure (either to cigarettes or beedis), the greater the prevalence of TB among smokers. Thus, smoking seems to be an important cause of death from TB.

CONCLUSION:

The fact that India is the second-largest producer of tobacco and had previously valued the revenue- and employment-generating potential of tobacco agriculture and manu- facture, it would have been natural to expect that policy-makers would continue to be lukewarm towards national or global efforts to curb tobacco consumption.

The impact of tobacco use on human health and society is undeniable. It poses a significant threat to public health, leading to a range of illnesses and premature deaths. Furthermore, the economic burden on society is substantial, affecting healthcare systems and productivity. Exploring alternatives to traditional tobacco products and implementing effective strategies for tobacco control are crucial in mitigating these negative consequences.

Tobacco control is an arena which requires the active participation of many players, in a collaborative mode. From several administrative departments involved at the governmental level, diverse civil society groups needed at the community level and varied technical expertise required from multiple professional groups, to a host of bilateral and international partners to engage, the design and delivery of the national programme for tobacco control requires extensive networking among the stakeholders and carefully calibrated coordination mechan-isms. Specific recommendations for individual stakeholders should be profiled.

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