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PREVALENCE OF TOBACCO USE IN MEN ABOVE THE AGE OF 18 YEARS IN AN URBAN AREA OF BELGAUM

Submitted by

(REG.NO.BD0112004)

DISSERTATION

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LIST OF ABBREVIATIONS USED

χ^2	-	Chi – square test
DF	-	Degree of freedom
GATS	-	Global Adult Tobacco Survey
GYTS	-	Global Youth Tobacco Survey
OR	-	Odds Ratio
WHO	-	World Health Organization
FCTC	-	Framework Convention on Tobacco Control
NHSDAA	-	National Household Survey of Drug and Alcohol Abuse in India
NFHS	-	National Family Health Survey
FTND	-	Fragerstorm Test for Nicotine Dependence
ICD	-	International Classification of Diseases

ABSTRACT

BACKGROUND AND OBJECTIVES:

The tobacco epidemic kills nearly 6 million people a year. Prevalence of tobacco use has increased over the past decades. If current trends persist, tobacco will kill more than 8 million people worldwide each year by the year 2030, with 80% of these premature deaths in low- and middle-income countries. The prevalence of tobacco use among men has been reported to be high (generally exceeding 50%) from almost all parts of India. According to National Family Health Survey-III, percentage who uses any kind of tobacco in urban area is 49.9%. Tobacco use is one of the main risk factors for a number of chronic diseases, including cancer, lung diseases, and cardiovascular diseases. Hence the present study was undertaken to know the prevalence of tobacco use, factors affecting it, quitting patterns and morbidity among tobacco users.

METHODOLOGY:

A community based cross sectional study, conducted from January to December 2013 among urban adult males aged above 18 years in Urban Health Centre, Ramnagar, Belgaum. Total 725 participants were included in study.

After obtaining the ethical clearance, pilot study was conducted. Written informed consent was obtained from every participant. Data was collected by house to house visit using a predesigned questionnaire, which included socio-demographic variables, prevalence of tobacco use and factors affecting it, knowledge and attitude towards act to control tobacco products, quitting pattern and morbidity pattern. Statistical analysis was done using chi square test and P value less than 0.05 was considered significant.

RESULTS:

In the present study, 24% were in the age group of 18 – 25 years, 5.5% were in 26 -35 years, 32.6% were in 36-45 years, 23% were in 46-55 years, 10.3% were between 56-65 years and 34.6% were in 65 years and above. The prevalence of both smoking and smokeless forms of tobacco together was 55.7%. 25.9% were using only smoking form, 10.3% only smokeless form and 19.4% of the subjects were

using both forms. 44.3% subjects were not using any form of tobacco. 28.8% were users of smokeless forms of tobacco. 21.8% subjects used chewable tobacco, 0.4% in snuff form, 20 2.8% used pan masala and 4.8% were Gutkha users. 73.7% subjects knew about the act to control tobacco products. 93.8% said that they are in favour of the act to control tobacco products. 46.77% initiated use of tobacco in the age of 16 years or older age and 36.91% at the age of 10 to 15 years. 20% of the subjects stopped because of respiratory problems and 7.4% because of decrease in work capacity. When offered by their friends 27.7% said that they might probably use, 22.5% said they will definitely use tobacco. 42.62% had pathology in mouth and throat, 27.17 % respiratory problems, 5.1% cardiovascular problems and 6.07% subjects had abdominal problems.

CONCLUSION AND INTERPRETATION

The present study, reported a higher prevalence of tobacco use among adult men. The knowledge about the act to control tobacco product was not adequate among the study participants. Most of the users initiated the use of tobacco at young age. A good number of current tobacco users wished to quit. Majority of the subjects stopped using tobacco because of respiratory problems and decreased work capacity. Majority of the study participants had pathology in mouth and throat. Pathologies in respiratory system, cardiovascular system and per abdomen were significantly associated with the tobacco use.

KEY WORDS: tobacco use, quitting pattern, morbidity

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INTRODUCTION

The tobacco epidemic kills nearly 6 million people a year. This includes more than 6,00,000 non-smokers who die from exposure to tobacco smoke. Over 80% of tobacco deaths take place in the developing countries. In 2004, about 5 million adults aged 30 years and above died from direct tobacco use (smoking and smokeless) around the world.[1]

If current trends persist, tobacco will kill more than 8 million people worldwide each year by the year 2030, with 80% of these premature deaths in low- and middle-income countries. By the end of this century, tobacco may kill a billion people or more unless urgent action is taken.[2]

The International Classification of Diseases Tenth Revision (ICD-10) has recognized that "tobacco dependence" is a disease.[3]

The prevalence of tobacco use among men has been reported to be high (generally exceeding 50%) from almost all parts of India. According to National Family Health Survey-III, percentage who uses any kind of tobacco in urban area is 49.9%.[4]

Habit initiation in late adolescence may contribute for strengthening the addiction, which eventually could hinder quitting attempts. Tobacco use is a major public health problem. Tobacco is a risk factor for six out of the eight leading causes of deaths in the world.[5]

The six most effective policies that can curb the tobacco epidemic are outlined in WHO MPOWER strategy[2]

Monitoring tobacco use and prevention

Protecting people from tobacco smoke

Offering help to give up tobacco use

Warning people about the hazards of tobacco

Enforcing bans on tobacco advertising, promotion and sponsorship

Raising taxes on tobacco

According to Report on tobacco control in India, nearly 3000 chemical ingredients have been identified in smokeless form of tobacco, while almost 4000 chemicals are present in tobacco smoke, many of them are harmful. These include alkaloids such as nicotine, nor nicotine, cotinine, anatabin, anabasin, aliphatic hydrocarbons present in the waxy leaf coating and hundreds of isoprenoids that give the aroma to tobacco. In addition, a wide range of toxic metals like mercury, lead, cadmium, chromium and other trace elements have been found in Indian tobacco. Tobacco use has not been considered as a good habit by many societies, right from its introductionin16thcentury.[6]

The tobacco plant is thought to have originated on the mainland between North and South America. Its cultivation possibly dates back to about 5000 years; tobacco seeds were discovered during archaeological excavations in Mexico and Peru about 3500 BC.[7]

While cigarettes are the dominant form of tobacco use in much of the world, oral use of smokeless tobacco (chewing or applying to the teeth or gums) and smoking of bidis are the dominant forms of tobacco consumption in India.[4]

The WHO Framework Convention on Tobacco Control (WHO FCTC) recognizes the substantial harm caused by tobacco use and the critical need to prevent it. Tobacco kills approximately 6 million people and causes more than half a trillion dollars of economic damage each year. Tobacco will kill as many as 1 billion people this century if the WHO FCTC is not implemented rapidly.[8]

Tobacco use is among the leading preventable causes of death. Each year, the global tobacco epidemic kills nearly 6 million people, including more than 600,000 who die from exposure to second-hand smoke. It is on track to kill more than 8 million by 2030, by which time approximately 80% of the deaths would occur in low- and middle-income countries. The costs of tobacco use are measured in its enormous toll of disease, suffering and family distress. Economies also suffer from increased health-care costs and decreased productivity.[9]

Indian studies have also recognized tobacco use as a major health hazard in India. Association of smokeless tobacco use with oral cancer was pointed out as early as 1908.[6]

Tobacco use is one of the main risk factors for a number of chronic diseases, including cancer, lung diseases, and cardiovascular diseases. Despite this, it is common throughout the world. A number of countries have legislation restricting tobacco advertising, and regulating who can buy and use tobacco products, and where people can smoke.[10]

Tobacco use is a major preventable cause of premature death and disease worldwide. Nearly one million people die in India every year due to tobacco use. A systematic surveillance mechanism to monitor the tobacco epidemic is a key strategy to tobacco control.[11]

Availability of irrefutable scientific evidence on its health hazards from well-conducted cohort and case-control studies during 1950s supported the pleas for tobacco control.

As per various surveys, the prevalence of tobacco use among men above 15 years of age varied between 46% and 63% in urban areas and between 32% and 74% in rural areas. Among women it varied between 2% and 16% in urban areas and between 20% and 50% in rural areas.

Based on age & sex specific rates for tobacco use in urban and rural areas, as reported in the second national level survey, it is estimated that in 1996, 184 million persons (150 million males and 34 million females) in India used tobacco.[7]

Prevalence of tobacco use has increased over the past decades. Hence the present study was undertaken to know the prevalence of tobacco use, factors affecting it, quitting patterns and morbidity among tobacco users.

OBJECTIVES OF THE STUDY

1. To study the prevalence of tobacco use among men above the age of 18 years in an urban area
2. To study the various factors affecting tobacco use and quitting patterns in relation to age of habit initiation, duration of habit and family background.
3. To study the morbidity among tobacco users.

REVIEW OF LITERATURE

What we commonly describe "tobacco" comprises cigarettes, cigars, loose pipe tobacco, chewing tobacco and snuff. These products are the dried, processed leaves of the tobacco plant *Nicotiana rustica* or *Nicotiana tabacum.* All tobacco contains *nicotine*, an addictive drug. Now a days' tobacco also has thousands of other chemical ingredients added to make the products more user-friendly and addictive.

Within a short period after Christopher Columbus first observed this strange behaviour of smoking among the natives of America in 1492, tobacco use increased worldwide and assumed major social, political, industrial, economic and medical significance. These 500 years of tobacco's discovery have provided plenty chance to the trade forces to dictate its universal accessibility by way of engineering addiction to tobacco among its users. Now it is known that this weird behaviour is driven by the pharmacological effects of nicotine present both in tobacco leaves and tobacco smoke. It is also known that tobacco use damages the body, causes diseases, compromises users' health, shortens lifespan and leads to early death.

Tobacco is a plant product obtained from an important member of *Solanaceae* family of the plant kingdom. Unlike other members of this family, such as tomato and potato, which have nutritional role, tobacco plant carries in its leaves quantities of an alkaloid, nicotine, which gives it power over man's mind. *Nicotiana tobaccum* is the main source of tobacco though most of tobacco in northern India and Afghanistan comes from *Nicotiana rustica*.

After harvesting and curing, tobacco leaves are manufactured into consumable products, which are smokeless and for smoking. Smokeless products are for chewing,

snuffing and local application, while smoking of tobacco is in the form of cigarettes, cigars, *hookah, chillum, cheroot, beedis* etc.

Chemicals in Tobacco

In addition to nicotine, cigarette smoke contains over 4,000 different chemicals. The vast majority of these chemicals are added to the tobacco to add to its addictiveness, improve its flavour and/or to increase burn rate, which increases sales.

Ammonia (one of the 4,000 chemicals placed in cigarettes) is added solely for the purpose of enhancing the effects of nicotine. Ammonia added to commercially made cigarettes can boost the impact of nicotine 100 times.

Following are some of the categories of chemicals found in cigarette:

Cancer Causing Agents Nitrosamines Chrysene Cadmium Benzopyrene Polonium 210 Nickel P.A.H.s Dibenz Acidine B-Napthylamine Urethane N. Nitrosonornicotine Toluidine	**Metals** Aluminium Zinc Magnesium Mercury Gold Silicon Silver Titanium Lead Copper
Acetone- Nail Polish Remover **Acetic Acid-** Vinegar **Ammonia-** Floor/Toilet Cleaner **Arsenic-** Poison **Butane-** Cigarette Lighter Fluid **Cadmium-** Rechargeable Batteries **Carbon Monoxide**-Car Exhaust Fumes **DDT/Dieldrin-** Insecticides **Ethanol-** Alcohol **Formaldehyde**-Dead Body Preserver **Hexamine-** Barbecue Lighter	**Hydrogen Cyanide-** Gas Chamber Poison **Methane-** Swamp Gas **Methanol-** Rocket Fuel **Napthalene**- Mothballs **Nicotine-** Insecticide, Addictive Drug **Nitrobenzene-** Gasoline Additive **Nitrous Oxide Phenols**- Disinfectant **Stearic Acid-** Candle Wax **Toluene-** Industrial Solvent **Vinyl Chloride**- Ingredient of PVC

Tobacco products vary mostly in the way they are used and, consequently, the way they injure users. Cigarettes are the commonest form of tobacco used, but cigars and smokeless tobacco are equally dangerous. All types of tobacco cause cancer; cigars and cigarettes most commonly cause lung cancer, but they can lead to a variety of other cancers, as well. Smokeless tobacco, on the other hand, mostly causes cancer of the mouth, throat, and stomach. All types of tobacco use leads to heart disease.

Tobacco contains nicotine, which is a highly fanatic drug, but the different products have altered amounts. For example, one cigar has as much nicotine as almost three *packs* of cigarettes. A cigar can contain up to 444 mg of nicotine, while a cigarette can contain up to 11 mg of nicotine. A pocket-size packet of smokeless tobacco contains as much nicotine as three packs of cigarettes. The moister the tobacco, higher is the nicotine content.

Tobacco also contains a variety of toxic chemicals. Cigar smoke has the same poisons and chemicals that cause cancer as cigarette smoke and contains higher levels of some of those chemicals. Smokeless tobacco contains formaldehyde, which is embalming fluid, nitrosamine and benzopyrene, which are known carcinogens, and Uranium 235 and Polonium 210, both of which are nuclear products. In all, chewing tobacco (or spit tobacco) contains at least 28 cancer-causing chemicals.

Short-term effects of smoking

- Bad breath.
- Bad taste in mouth.
- Smelly hair and clothes.
- Yellow and brown stains on teeth.

- Lost athletic ability.
- Damage to the respiratory system.
- Risk of other drug use.
- Decreased lung capacity.
- Limited lung growth and function if used in youth.
- Elevated heart rate.
- Chronic cough.
- Increased incidence of bronchitis.
- Increased incidence of asthma and more severe asthma.

Short-term effects of smokeless form of tobacco-

- Bad breath.
- Bad taste in mouth.
- Excess saliva production – drooling.
- Stained teeth.
- Stains on clothes.
- Receding gums (gums pull away from teeth.)
- Sensitive teeth.
- Increased risk of tooth decay.
- Sores, white and red patches and lumps in mouth.

Long-term Effects-

- Mortality
- Heart Disease
- Cancer
- Lung Disease

- Reproductive Damage
- Birth Defects
- Other Damage

Tobacco does cause a wide variety of devastating cancers. However, tobacco kills even more people through heart disease and stroke than it does through cancer! About 181,000 people die each year in the United States from smoking-related heart disease and stroke, and about 158,000 die from smoking-related cancer. The remainder of the smoking-related deaths, 123,000, are from lung diseases other than cancer.

Mechanisms of addiction

Nicotine stimulates the release of the brain's neurotransmitters (messenger chemicals). An increase in neurotransmitters creates a heightened alertness and aids short-term memory. The first rush of nicotine hits the brain within a few seconds. The amount of nicotine in the blood begins falling rapidly as soon as the user stops smoking or chewing. Within 45 minutes of using, the concentration of nicotine in the blood is at about half of its peak. The user begins to feel withdrawal symptoms, like irritability and restlessness. The withdrawal drives the user to smoke or chew again.

Over time, the tobacco user’s brain becomes accustomed to a certain concentration of nicotine in the blood, and tolerance develops. Users’ brains actually trick them into maintaining a set level of nicotine. Studies have shown that smokers who switch to lower nicotine cigarettes subconsciously smoke more cigarettes, inhale more deeply, hold the smoke longer, or cover the minute holes in the filter. All of these strategies increase the amount of nicotine the smoker absorbs.

The tobacco industry insisted in public for decades that nicotine was not addictive, but was "flavouring" agent. However, internal industry documents reveal the truth. Tobacco Company Brown & Williamson's general warning wrote in 1963, "…nicotine is addictive. We are, then, in the business of selling nicotine, an addictive drug effective in the release of stress mechanisms."

Risks of Smokeless Tobacco Use

Spit tobacco is not a safe substitute for smoking. It is at least as addictive as cigarettes. Users who try to quit go through the same withdrawal symptoms smokers do. Tobacco companies have done a great deal to ease new users into the product, like adding flavour and packaging moist snuff in sachets.

Makers have also altered the nicotine content and pH of the product to increase its addictiveness.

Smokeless tobacco leads to oral cancers, cancers of the oesophagus, larynx and stomach and an increased risk of myocardial infarctions and other cardiovascular diseases.

40-60% of smokeless tobacco users develop leukoplakia, in their mouths within a few months of beginning regular use. Leukoplakia is usually precancerous.

Other oral side effects of smokeless tobacco include receding gums, staining of teeth, loss of sense of taste and bad breath.

Smokeless tobacco contains many cancer-causing agents like nitrosamines, polynuclear aromatic hydrocarbons, and radioactive and metallic compounds. The nitrosamine content of smokeless tobacco is over 1,000 times greater than the amount allowed by the FDA.[12]

National household survey conducted in2005-06 in India to know the prevalence and predictors of smoking and chewing showed that 30% of the population 15 years or older (47% men and 14% of women) either smoked or chewed tobacco, which translates to almost 195 million people (154 million men and 41million women) in India. Tobacco consumption was significantly higher in poor, less educated, scheduled castes and scheduled tribe populations. The prevalence of tobacco consumption raised up to the age of 50 years and then levelled or declined.[4]

Similarly, National Household Survey of Drug and Alcohol Abuse in India (NHSDAA), conducted in 2002, among males which covered over 40,000 individuals aged 12.60 years in nearly 20,000 households in 25 states showed that the overall prevalence of current tobacco use was 55.8%. There is an increase in tobacco use with age, levelling off after 50 years of age.[13]

According to NFHS-3, the prevalence of any tobacco use in 15-49 years age group was 57% in males and 10.8% in females. Prevalence of smoking alone was 32.7% in both urban and rural area. Prevalence of pan and Gutkha chewers was 36.5% in males.[4]

A survey conducted in South Arcot district, Tamil Nadu by Gajalakshmi V et al. showed that, among men aged 35-69 years, showed that nearly 47% were ever-smokers. During the same period, a survey in Chennai city found that 38% men were ever-smokers.[14]

Global Adult Tobacco Survey (GATS) India conducted in 2009-2010 showed that-

- Current tobacco use in any form: 34.6% of adults; 47.9% of males and 20.3% of females
- Current smokers: 14.0% of adults; 24.3% of males and 2.9% of females
- Current cigarette smokers: 5.7% of adults; 10.3% of males and 0.8% of females
- Current bidi smokers: 9.2% of adults; 16.0% of males and 1.9% of females
- Current users of smokeless tobacco: 25.9% of adults; 32.9% of males and 18.4% of females
- Among daily tobacco users, 60.2% consumed tobacco within half an hour of waking up
- Average age at initiation of tobacco use was 17.8 with 25.8% of females starting tobacco use before the age of 15
- Among minors (age 15-17), 9.6% consumed tobacco in some form and most of them could purchase tobacco products
- Five in ten current smokers (46.6%) and users of smokeless tobacco (45.2%) planned to quit or at least thought of quitting
- Among smokers and users of smokeless tobacco who visited a health care provider, 46.3% of smokers and 26.7% of users of smokeless tobacco were advised to quit by health care providers
- About five in ten adults (52.3%) were exposed to second-hand smoke at household and 29.0% at public places (mainly in public transport vehicles and restaurants)

- About two in three adults (64.5%) noticed advertisement or promotion of tobacco products
- Three in five current tobacco users (61.1%) noticed the pictorial health warning on tobacco packages and one in three current tobacco users (31.5%) thought of quitting tobacco after seeing the warning label.[11]

A study conducted to find the epidemiological determinants of tobacco use in Gujarat state, India by Bala DV et al. revealed that amongst various addictions, tobacco was the most popular and highest documented addiction. Overall prevalence of tobacco in different forms was 47.6% in the total population in Gujarat. The prevalence was 61.89% in men and 26.46% in women. It was observed that tobacco use in the community was more with increasing age. Smoking was the commonest form accounting for 81.1% of total male tobacco users but snuffing was the major form of tobacco use in nearly 39% females. The prevalence of smoking and chewing in women were 33.9% and 25.86% respectively. As many as 40.7% of men as against 16% of women, started the use of tobacco below 20 years of age and soon got addicted to it. The largest fraction (74%) of tobacco consuming youngsters were under 25 and further 50% in the 26-35 years age group had initiated tobacco use in childhood or in adolescence.[15]

In a study to estimate the prevalence and correlates of tobacco use among urban adult men in India by Rooban T et al, the prevalence of smokers in slum was 30.7% and in non-slums it was 26.9%. The prevalence of use of smokeless form of tobacco was 35.1% in slums and 25.9% in non-slums. Bivariate logistic regression for any type of tobacco use for slum and non-slum males revealed that, among slum dwellers, the OR for tobacco use was 5.46 in the 20–29 year age-group and 5.73 in

the 40–44 year (as compared to the 15–19 year age-group). In non-slum dwellers, the OR for tobacco use was highest in the 25–34 years age-group. Among slum dwellers, the OR increases from 20–29 years and dropped in 30–34 years to climb up steadily till 5.73 in 40-44 years and tapers down. In contrast, in non–slum dwellers, the OR rises from 3.87 in the 20–24 years age-group to 5.29 in 25–29 years age-group, plateau in the 35–44 years age-group, and then increased to 5.96 in the 45–49 years age-group. The odds for tobacco use decreased with increasing education in both slum and non-slum males. 'Ever married' males were more likely to use tobacco than 'never married' males; this was statistically significant in both slum and non-slum dwellers. As compared to a non-slum male, a slum-dwelling male had an OR of 1.38 for any tobacco use. For smokeless tobacco use the OR was 0.68 and for smoking tobacco it was 1.03. Age is an important demographic characteristic that is associated with tobacco use. Smokeless tobacco use is more popular in the younger age-groups than smoking forms, which are predominantly observed in older age-groups.[16]

A study to assess the prevalence of tobacco consumption among inmates residing in central jail, Bhopal by Torwane NA et al, found that 87.7% psychiatrics and 66.4% non-psychiatrics had a habit of tobacco consumption (smokeless or smoking).[17]

A study done in Bengaluru, India by Kadanakuppe S et al. showed that 96% of tobacco users had attempted to quit tobacco and 95.7% were willing to quit. Sixteen percent of respondents reported that they currently used tobacco. About 83% of tobacco users agreed that the student dentist should ask patients whether or not they use tobacco, 79.4% agreed that the student dentist should advise tobacco users to quit, and 81.4% agreed that student dentists should offer information on quitting tobacco to

patients who want to quit. Only 12.5% of the patients who use tobacco were aware of the community resources available to quit tobacco.[18]

In a study to see the determinants of tobacco cessation behaviour among smokers and smokeless tobacco users in the states of Gujarat and Andhra Pradesh by Sarkar BK, a smoker had higher predicted probability of attempting quitting (OR-1.41), in comparison to a smokeless tobacco user and a tobacco user in the state of Gujarat was less likely to attempt quitting than a user in Andhra Pradesh (OR-0.60). The probability of making a quit attempt was higher among tobacco users who were more educated (OR-1.40), having a higher socio-economic status (OR-2.39), and belonging to non-agricultural labourer group (OR-1.90). The effects were maintained even after adjusting for all other variables. In disaggregated analysis, findings were similar except in smokeless as a separate group, education level was not significantly associated with quit attempts and with lower odds (OR-0.91).[19]

In a study to see the correlates of tobacco quit attempts and cessation in the adult population done by Srivastava S et al, of the ever tobacco users, 42% made an attempt to quit tobacco, and of these 42% were successful. Significant associations were demonstrated between male gender, increased scholastic accomplishment and higher asset quintiles for both those who tried to quit and those who were successful. Younger age groups had higher odds of quit attempts than all except the oldest age group, but also had the lowest odds of effective quitting.[20]

A community based cross-sectional tuberculosis prevalence survey was conducted in Jabalpur, Madhya Pradesh by Rao VG et al, showed that persons aged 35-54 years and 55 years and above had, respectively, a 2.19 and a 3.26 times higher risk of developing tuberculosis compared to persons aged below 35 years. Males had

a 2.35 times higher risk than females. The odds ratio for mild, moderate and heavy tobacco smokers were 2.28, 2.51 and 2.74 respectively as matched to non-smokers. They concluded that, tobacco smoking is significantly associated with pulmonary tuberculosis and smoking cessation services need to be integrated into the activities of the tuberculosis control programme.[21]

The tobacco induced mucosal lesions which are less likely to cause cancer are betel chewer's mucosa, leukoderma, smoker's palate, lichenoid reaction, smoker's melanosis, tobacco pouch keratosis, palatal erythema and palatal erythema with hyperplasia. Smoker's palate is also known as leukokeratosisnicotina palate and is a common reaction of palatal mucosa to smoking. Clinically the lesion appears as diffuse white patch with numerous excrescences having central red dots corresponding to minor salivary gland ducts. The prevalence in India varies from 0.4% to 9.5%. These lesions are more prevalent in men due to increased usage of tobacco smoke among them.

In India, the prevalence of leukoplakia varies from 0.2% to 5.2% and malignant transformation ranges between 0.13% and 10% according to various studies. Among the recent studies, leukoplakia was evident in 1.59% of the study sample, 0.59%, 7.4% and 2.04%. The incidence is progressively increasing owing to the excessive usage of areca nut among various groups of population.[22]

Several epidemiological studies suggest that bidi smoking increases the risk of oral cancer. An increased risk of oral cancer was found for bidi smokers compared to never smokers (OR = 3.1). This information must be incorporated into smoking prevention and cessation efforts, particularly among the urban poor and rural mass in South Asian countries where bidi smoking is widely prevalent.[23]

Oral cancer is one of the most important causes of morbidity and the current magnitude of the problem is extensive. The Government of India developed the first statement on cancer control as early as 1971. The National Cancer Control Programme for India was formulated in 1984 with four major goals that included:

- Primary prevention of tobacco related cancers
- Early detection of cancers of easily accessible sites
- Augmentation of treatment facilities
- Establishment of equitable, pain control and palliative care network throughout the country.[24]

A study done to estimate the prevalence of oral mucosal lesions in patients visiting a dental school in Manipal, Karnataka showed the presence of one or more mucosal lesions in (41.2%) of the population. Fordyce's condition was observed most commonly (6.55%), frictional keratosis (5.79%), fissured tongue (5.71%), leukoedema (3.78%), smoker's palate (2.77%), aphthae, oral submucous fibrosis (2.01%), oral malignancies (1.76%), leukoplakia (1.59%), glossitis (1.50%), candidiasis (1.3%), lichen planus (1.20%), varices (1.17%), traumatic ulcer and oral hairy leukoplakia (1.008%), denture stomatitis, geographic tongue, betel chewer's mucosa and irritational fibroma (0.84%), herpes labialis, angular cheilitis (0.58%), and mucocele (0.16%). Mucosal lesions like tobacco-related lesions (leukoplakia, smoker's palate, oral submucous fibrosis, and oral malignancies) were more prevalent among men than among women. Denture stomatitis, herpes labialis, and angular cheilitis occurred more frequently in the female population.[25]

A nested case-control study done in Trivandrum, Kerala by Muwonge R et al. to see the role of tobacco smoking, chewing and alcohol drinking in the risk of oral

cancer, showed that tobacco chewing was the strongest risk factor associated with oral cancer. The adjusted odds ratios (ORs) for chewers were 3.1 for men and 11.0 for women. Effects of chewing pan with or without tobacco on oral cancer risk were elevated for both sexes. Bidi smoking increased the risk of oral cancer in men (OR=1.9). Dose-response relations were observed for the frequency and duration of chewing and alcohol drinking, as well as in duration of bidi smoking.[26]

A case control study done by Znaor A et al. in Chennai and Trivandrum, South India, showed that tobacco chewing as the strongest risk factor for oral cancer, with the highest odds ratio for chewing products containing tobacco of 5.05. The strongest risk factor for pharyngeal and esophageal cancers was tobacco smoking, with ORs of 4.00 and 2.83 in current smokers, respectively.[27]

In a study by Hashibe M et al. to estimate the risk of erythroplakia, it was found that, the adjusted OR for erythroplakia was 19.8 for individuals who had ever chewed tobacco, after controlling for age, sex, education, body mass index, smoking, and drinking. The adjusted OR for ever-alcohol-drinkers was 3.0 after controlling for age, sex, education, body mass index, chewing tobacco, and smoking. For ever-smokers, the adjusted OR was 1.6.[28]

In a study to see the relation between tobacco consumption and causes of death in an urban population of north India by Singh RB et al, it was found that, the prevalence of tobacco consumption, including chewing plus smoking were 45% among men. Among males, 20% were smokers and 30% were tobacco chewers. There was no impact of socioeconomic class on tobacco consumption in men. Tobacco intakes were significantly more common among decedents dying due to circulatory, malignant, and pulmonary diseases, compared with other causes (men 61.1%, 76.6%,

pulmonary 77.3% vs. 31%) of mortality, respectively. Pulmonary causes included chronic bronchitis and asthma. Circulatory diseases (29.1%) including heart attacks (10.0%), stroke (7.8%), valvular heart disease (7.2%), sudden cardiac death and inflammatory cardiac disease, each (2.0%) were the second most common causes of deaths, after infections (41.1%). Malignant neoplasm (5.8%), injury (14.0%), and miscellaneous causes of deaths, including diabetes mellitus (2.2%) were noted in 9.1% of death records. Cancers of the lung (1.6%), oral cavity (1.5%), liver (1.1%) and stomach (0.9%) were relatively common causes for deaths due to malignancy.[29]

The tobacco-related cancers reported by the population-based cancer registries of Bangalore, Barshi (rural), Bhopal, Chennai, Delhi and Mumbai constitute 56.4% and 44.9% of cancers in males and females, respectively. The top five or six cancers in men are all tobacco related cancers: of the lung, oral cavity, larynx, oesophagus and pharynx. In women, the leading cancer sites include those related to tobacco: cervix, oral cavity, oesophagus and lung, in addition to other cancers not considered to be tobacco related (breast and ovary).[7]

National survey on drug use and health done by US Health Department in 2010 showed that, 23% of the people were current cigarette smokers, 5.2% smoked cigars, 3.5% used smokeless tobacco; and 0.8% smoked tobacco in pipes. Young adults aged 18 to 25 had the highest rate of current use of a tobacco product (40.8 %) compared with youths aged 12 to 17 and adults aged 26 or older (10.7% and 27.2%, respectively). Among adults aged 18 or older, current cigarette use in 2010 was reported by 34.3% of those who had not completed high school, 29.6% of high school graduates who did not attend college, 25.8 % of persons with some college, and 12.8% of college graduates. Current cigarette smoking was more common among

unemployed adults aged 18 or older than among adults who were working full time or part time (39.9 vs. 24.9 and 24.4%, respectively). 59.6% used cigarettes daily. The percentage of daily cigarette smokers increased with age, with 22.4% among past month cigarette users aged 12 to 17, 46.1% among those aged 18 to 25, and 64.8% among those aged 26 or older.[30]

An analysis of nationally representative cross-sectional household surveys of 16 countries to study the tobacco use by Giovino GA et al. showed that, in countries participating in GATS, 48·6% of men and 11·3% of women were tobacco users. 40.7% of men (ranging from 21.6% in Brazil to 60.2% in Russia) and 5.0% of women (0·5% in Egypt to 24.4% in Poland) in GATS countries smoked a tobacco product. Manufactured cigarettes were preferential by most smokers (82%) overall, but smokeless tobacco and bidis were commonly used in India and Bangladesh. For persons who had ever smoked daily, women aged 55-64 years at the time of the survey began smoking at an older age than did equivalently aged men in most GATS countries. Quit percentages were very low (<20% overall) in China, India, Russia, Egypt, and Bangladesh.[31]

An analysis done to see the current tobacco use and second hand smoke exposure among women of reproductive age in 14 countries by Caixeta RB et al. showed that, among reproductive-aged women, current tobacco smoking ranged from 0.4% in Egypt to 30.8% in Russia, current smokeless tobacco use was <1% in most countries, but common in Bangladesh (20.1%) and India (14.9%), and second hand smoke exposure at home was common in all countries, ranged from 17.8% in Mexico to 72.3% in Vietnam. High tobacco smoking prevalence in some countries suggests that strategies promoting cessation should be a priority, whereas low prevalence in

other countries suggests that strategies should focus on preventing smoking initiation. Promoting cessation and preventing initiation among both men and women would help to reduce the exposure of reproductive-aged women to second hand smoke exposure.[32]

An analysis of national family health survey done in 2005-2006 by Rooban T et al. to see the socio-demographic correlates of male chewable smokeless tobacco users in India showed that of all the male participants, 34.42% used one or another chewing products; 8.1% used pan masala, 11.8% used gutka, and 12.13% used other chewable tobacco products. Among males, use of chewable tobacco was the most widespread in the age group of 30-34 years, with 40.5% chewing any form of tobacco. Thirty-one percent of urban and 38.1% of rural males used chewing substances. As the level of education increased, prevalence of chewing habit decreased. Similarly, as the wealth index increased, the chewing habits reduced across the subcategories of males and females.[33]

A cross sectional multilevel evidence study from the 1998-99 national family health survey to study the patterns and distribution of tobacco consumption in India by Subramanian SV et al. showed that, age was positively associated with the probability of smoking; for a 10 year change in age the odds ratio related to smoking increased by 1.16. Marital status was also predictive of smoking: single, widowed, and divorced or separated people were less likely to smoke (odds ratios 0.32, 0.88, and 0.93, respectively), but the association was weak and vaguely estimated for divorced and separated people. Christians and residual category of “other religion” were less likely to smoke than Muslims or Hindus. Lone people were less likely to chew, but both widowed and separated or divorced people were more likely to chew

than married people. Christians and other religions less likely to chew (odds ratios 0.76 and 0.85, respectively) when compared with Hindus. Strong gradient was observed between education and chewing; the odds of chewing in the educationally worst off group was 1.84 times that of people with postgraduate education. A similar household standard of living gradient became apparent for chewing: the odds of chewing in the lowest fifth was nearly twice that of the highest fifth.[34]

In a study undertaken to know the tobacco use and existing quitting patterns in urban population of Jamnagar, Gujarat by Rani M et al, it was observed that mean age of tobacco initiation was 26.5 years in case of smokers, while it was 23.6 years in case of tobacco chewers. About 28.4% of the current-consumers showed willingness to quit their habit. Majority of quitters (84.2%) had started tobacco between the age of 20 and 30, while the year span was five years earlier i.e. initiation between 15-30 years in 76.6% of current-tobacco-chewers. Nearly 30% of current-consumers had started before they completed 20 years. About 58.3% of quitters and 74.1% of current-chewers who showed inclination to quit had not consumed tobacco for more than five years. Among those who were not ready to quit tobacco, 80% had chewed tobacco for more than five years. About 63.9% of current-tobacco-chewers had a family member consuming tobacco in any form, while 48.2% of quitters had a history of any family member consuming tobacco in any form. Among the effective quitters, main reasons for quitting were found to be initiation of health problems (72.2%), which included respiratory problems like coughing, breathlessness, short breathing and wheezing; reduced widening of mouth, weight loss and decreased working capacity cumulatively. Vows which were self-offered or resulted from positive preaching from the local religious leaders towards quitting of tobacco played a role in 60.2% of cases, while the reason was familial pressure either by spouse or by other

family member(s) in 40.7% of the cases. Out of those who quit after initiation of health problems, 55.6% already knew about health hazards of tobacco but did not bother until any health disturbance occurred to them.[35]

In a study to determine predictors of quitting behaviour of tobacco by Islam K et al. done in West Bengal, 63.3% had intention to quit. Majority of the tobacco users who did not intend to quit belonged to the age group of > 40 years (66.0%), 55.3% were illiterate, 57.4%started tobacco use at 11 - 15 years of age, 70.2% had been using tobacco for 20 years or more, 91.5% were daily tobacco users and 80.9% highly dependent on nicotine. Tobacco users having high Fragerstorm Test for nicotine Dependence (FTND) score and who started tobacco use early in life were 1.83 and 3.30 times more unintended to quit, respectively.[36]

In a study done by Sarkar S et al. about the ways of curtailing tobacco use, stopping supply was the most commonly reported measure (67.4% of the subjects). This broad theme included measures like stopping production in factories (45.7%), banning sale (19.6%), and effective enforcement of the laws at curtailing use (6.6%). Other measures included people attempting to quit tobacco use by themselves (19.6%) and raising awareness through media (13.1%). Three participants (6.6 percent of the sample) said that use of tobacco cannot be stopped by any means.[37]

A case-control analysis of 2,580 cancer deaths to study social inequalities, tobacco chewing, and cancer mortality in south India done by Gajalakshmi V et al. showed that, among the controls, prevalence of current tobacco chewing was much greater in those with less education, irrespective of sex, urban/rural residence, or birth year. Compared with never chewers, ever chewers had fivefold higher mortality from mouth cancer (OR 4.9), and 1.5 to twofold higher mortality from cancers of the

pharynx/larynx/oesophagus combined, stomach, and cervix. Each of these cancers had a strong, independent, inverse association with educational level.[38]

A comparative, cross sectional study to see the effect of cigarette smoking on the periodontal health status in Sudernagar, Himachal Pradesh by Gautam DK et al. showed that young adults under 35 years represented the majority of the study population, that is 47% of the total sample, 51% were current cigarette smokers. In the oldest age group (over 55 years), only a small proportion (11%) were current cigarette smokers. Periodontal condition as measured by maximum Community Periodontal Index score per person showed that in the group studied, there were statistically significant differences between cigarette smokers and non-smokers for Community Periodontal Index score of 1 (non-smokers more likely to have gingival bleeding), 2 (cigarette smokers more likely to have calculus present), Community Periodontal Index score 3 (non-smokers more likely to have shallow pockets), and Community Periodontal Index score 4 (cigarette smokers more likely to have deep pockets). According to the self-reported oral hygiene practices, the mean tooth brushing frequency in cigarette smokers was slightly higher compared with the non-smoker group, but was not found to be statistically significant.[39]

In a study to see the prevalence of tobacco use among power loom workers in Mau Aima Town, District Allahabad, Uttar Pradesh by Ansari ZA et al. showed that, the overall prevalence of tobacco use was 85.9%; the prevalence of smoking and tobacco chewing were 62.28% and 66.07%, respectively. Statistical analysis showed that smoking is more common in the elderly, while chewing *gutka* (a type of chewing tobacco) is popular among the younger age-groups.[40]

A study to see the patterns of tobacco use across rural, urban, and urban-slum populations in a north Indian community by Gupta V et al. showed that, self-reported tobacco use among males was: urban 35.2%; urban-slums 48.3%; and rural 52.6%. Self-reported tobacco use among females was as follows: Urban 3.5%; urban-slums 11.9%; and rural 17.7%. More males reported daily bidi smoking (urban 17.8%, urban-slums 36.7%, rural 44.6%) than cigarette use (urban 9.6%, urban-slums 6.3%, rural 2.9%). Females using smoked tobacco were almost exclusively using bidis (urban 1.7%, 7.9%, 11% in rural). Daily chewed tobacco use had urban, urban-slum, and rural gradients of 12%, 10.5%, and 6.8% in males respectively. Its use was low in females.[41]

A cross-sectional study done to see tobacco chewing and associated factors among youth of western Nepal by Subba SH et al. showed that, overall prevalence of ever tobacco chewing was 21.3% (males 30.2% and females 10.9%) among the youth with average age of initiation 15.7 years. Pan Masala and gutka were used by 63.6% and frequency of use varied widely and only 5.7% said they were daily users. Reasons cited for chewing were most commonly 'just like it' or 'friends chew'. Multiple logistic regression analysis showed age, ever smoking status, being ever alcoholic, and having friends or family members who chewed were significantly associated with students' tobacco chewing. Almost one-tenth of the students believed they were addicted to chewing tobacco and 42.5% of them had tried to quit the habit.[42]

A study done to see the influence of TV and movies on tobacco use done by Viswanath K et al. found that, among women, 1·5% smoked and 8·4% chewed tobacco. At least occasional newspaper, radio, and television use was reported among 36·3%, 44·3%, and 65·6% of the women in the population, respectively. Smoking and

chewing were reported by 33·6% and 36·4% of men, respectively. Of men in the population, 68·3% used newspapers, 69·5% used radio, and 82·3% used television at least occasionally. Indicators of socioeconomic position, wealth and education are strongly and inversely associated with smoking and chewing. Although each type of media use was more common in an urban rather than rural context, there was sufficient heterogeneity in media use by rural/urban location to provide an adequate sample size in each cell to permit the use of multivariable regressions without stratifying the samples.[43]

METHODOLOGY

The present study was conducted at the Urban Health Centre, Ramnagar, Belgaum which is an urban field practice area of Department of Community Medicine, Jawaharlal Nehru Medical College, Belgaum. The UHC is situated at about 2.5 km from J. N. Medical College and caters to a total population of 29,521.

Design

The study design was community based cross-sectional study.

Duration

The study was conducted for one year from 1st January 2013 to 31st December 2013.

Participants

Adults aged above 18 years residing in areas under Urban Health Centre Ramnagar, Belgaum which is an urban field practice area of Department of Community Medicine, Jawaharlal Nehru Medical College, Belgaum.

Selection criteria

Inclusion

Adult men above the age of 18 years who were permanent residents and who gave informed consent were included.

Sample size:

Based on Global Adult Tobacco Survey (GATS) India 2009-2010, prevalence of tobacco use in any form among men in urban area was 48%.

Using the formula,

$$N = \frac{Z^2_{\alpha} \times pq}{d^2}$$

$$= \frac{2.58 \times 2.58 \times pq}{d^2} \quad (\alpha = 0.01)$$

p= prevalence = 48%

q=100-p = 100-48= 52

d = relative error = 10 % of p= 10x48/100= 4.8

Z = 2.58 (Area under normal curve with 99% confidence interval)

Substituting the values,

Sample size $n = \frac{2.58 \times 2.58 \times 48 \times 52}{4.8 \times 4.8} =$ **721**

Therefore, **725** adult men above the age of 18 years will be included in the study.

Sampling method

Simple random sampling

Sampling procedure

Population covered by UHC, Ramnagar- 29521

According to CNAA survey, adult men above the age of 18 years- 11791

Areas covered under UHC, Ramnagar: Ramnagar, Gangwadi, Waddar Chhavani, Police HQ, Ayodhyanagar, Verrabhadranagar, Kali Ambrai

Sampling frame of all the adults of these areas was made and simple random sampling method was used to select 725 adult men who were included in the study.

Random number table was used.

Proportionate number of samples was selected from each of the area proportionate to the population size of that area.

Ethical Clearance

The study was approved from Institutional Ethics Committee for Human Subject's Research, Jawaharlal Nehru Medical College, Belgaum.

Informed consent

Based on the selection criteria, the study participants were selected and written informed consent (Annexure II) was obtained from all the participants, before collecting the data.

Data collection procedure

A questionnaire was prepared based on Global Youth Tobacco Survey (GYTS). A pilot study was conducted using the predesigned questionnaire and required modifications were made.

Data was collected from the participants through interview. Data regarding socio demographic variables like age, sex, address, educational status, occupation, marital status, socio-economic status were collected.

All the subjects in the sample were informed about the purpose of the study and after obtaining informed consent, they were interviewed separately using pre-structured and pretested proforma.

The proforma included the following:

First part consists of questions related to socio-demographic profile.

It included information on age, religion, education, occupation, marital status, family type, socio-economic status.

Age: Calendar age in years was considered for the study

Religion: Hindu, Muslim, Christian, Others (specify)

Education: Every study subject was asked about the highest educational attainment and then they were grouped as follows:-

a. **Illiterate:** A person who cannot read and write any language.
b. **Primary school:** A person who has studied from first to seventh standard.
c. **High school:** The person who has studied eighth to tenth standard.
d. **College:** The person who has studied up to Pre-University College second year (PUC) or a diploma course or more

Occupation: Each study subject was asked about his/her major occupation. The information was collected and grouped as follows:-

a. **Semiprofessional/ Professionals:** which include doctors, engineers, college lecturers etc.
b. **Skilled workers:** skilled based jobs, such as technicians, mechanic, electricians etc.
c. **Semiskilled worker:** drivers, conductors, office attenders, security personnel, super visors etc.
d. **Unskilled workers/ manual workers:** In this group the occupations which involve physical exertion like masonry, farming, coolie etc.

e. **Retired/ old age dependant:** A person who has ceased to work after attaining the age of 65 years and is eligible to claim pension.

f. **Student/ unemployed**

Type of family:

a. **Nuclear family:** The family consisting of married couple along with their dependent children.

b. **Joint family:** It consists of number of married couples and their children who live in the same household.

c. **Three generation family:** It consists of three generations related to each other by direct descent and living together.

d. **Broken family:** A family consists of widow/ widower/ divorcee living with or without their dependent children.

e. **Problem family:** In these families the standards of life are generally far below the accepted minimum and parents are unable to meet the physical and emotional needs of the children and they lag behind the rest of community.

Socio-Economic status (SES) class:

Modified BG Prasad SES classification was used. This was obtained by multiplying per capita monthly income of 1961, (as suggested by BG Prasad) with the Multiplication factor.

$$\text{Multiplication factor} = \frac{\text{Current Consumer Price Index (CPI) X 4.93}}{100}$$

Consumer Price Index of 2013 was Rs. 1046.

Substituting in the formula,

Multiplication factor = 1046 X 4.93/ 100 = 51.56

Socio Economic Status: Class	BG Prasad's Classification of 1961	Modified BG Prasad's Classification for 2013
I	Rs 100 and above	Rs 5156 and above
II	Rs 50-99	Rs 2578-5155
III	Rs 30-49	Rs 1547-2577
IV	Rs 15-29	Rs 773-1546
V	Below Rs 15	Below Rs 773

Tobacco user classification:

Tobacco user was classified based on standard WHO definitions as follows,

Never user: Not tried tobacco any time in life.

Ever user: Should have consumed tobacco at least once in his or her lifetime**.**

Current user: History of consuming any tobacco product within 30days preceding the survey.

Ex-smoker: A person with the history of previous tobacco use and abstinence from tobacco for at least 1 month preceding the survey**.**

Second part consists of questions regarding usage of smoking as well as smokeless form of tobacco.

Third part of the questionnaire contains knowledge and attitude towards act to control tobacco products.

Fourth part contains questions related to quitting pattern in relation to age of habit initiation, duration of habit and family background.

Fifth part is for the general physical examination and systemic examination to look for morbidities related to tobacco use.

Data Collection:

The data collection was done using predesigned and pretested questionnaire.

Data was collected regarding socio-demographic variables, quitting patterns and morbidity among tobacco users.

Pilot study was conducted to know the feasibility.

Analysis:

- Categorical outcomes were summarized by rates
- Numerical outcomes were summarized by mean and SD
- To test the association between prevalence of tobacco use and selected socio-demographic variables, Chi-square test was used.

RESULTS

The present study was conducted in Urban Health Centre, Ramnagar, Belgaum, which is a field practice area of Department of Community Medicine, Jawaharlal Nehru Medical College Belgaum.

The data obtained was tabulated and analyzed under following headings as below:

1. Socio-demographic profile of study participants

2. Prevalence and factors affecting tobacco use

3. Quitting pattern

4. Morbidity pattern

1. SOCIO-DEMOGRAPHIC PROFILE OF STUDY PARTICIPANTS

Table 1: Distribution of subjects according to age group

Age group	No.	%
18-25	29	4.0
26-35	185	25.5
36-45	236	32.6
46-55	167	23.0
56-65	75	10.3
65+	33	4.6
Total	**725**	**100**

Of the 725 persons who participated in the study, 29 (4%) were in the age group of 18 – 25 years, 185 (5.5%) were in 26 -35 age group, 236 (32.6%) were in 36 -45 years, 167 (23%) were in 46 -55years, 75 (10.3%) were in 56 -65 years and 33 (4.6%) were in the age group of 65 years.

Mean age group of the study participants was 43.5±12.11 years. Range was 18-86 years.

Figure 1(Table 1): Distribution of subjects according to age group

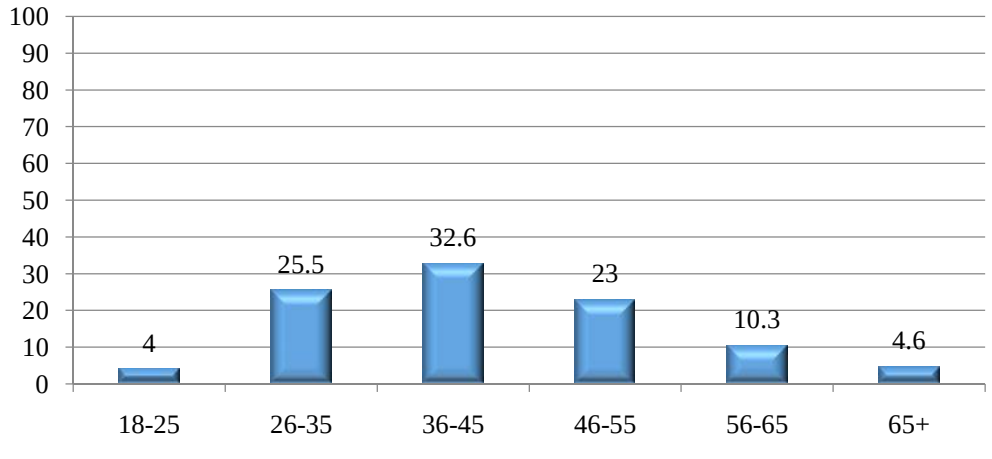


Table 2: Distribution of study subjects according to Religion

Religion	No.	%
Hindu	453	62.5
Muslim	268	37
Christian	4	0.5
Total	**725**	**100**

Out of 725 study population, 453 (62.5%) were Hindus, 272 (37.5%) were Muslims and only 4 (0.5%) were Christians.

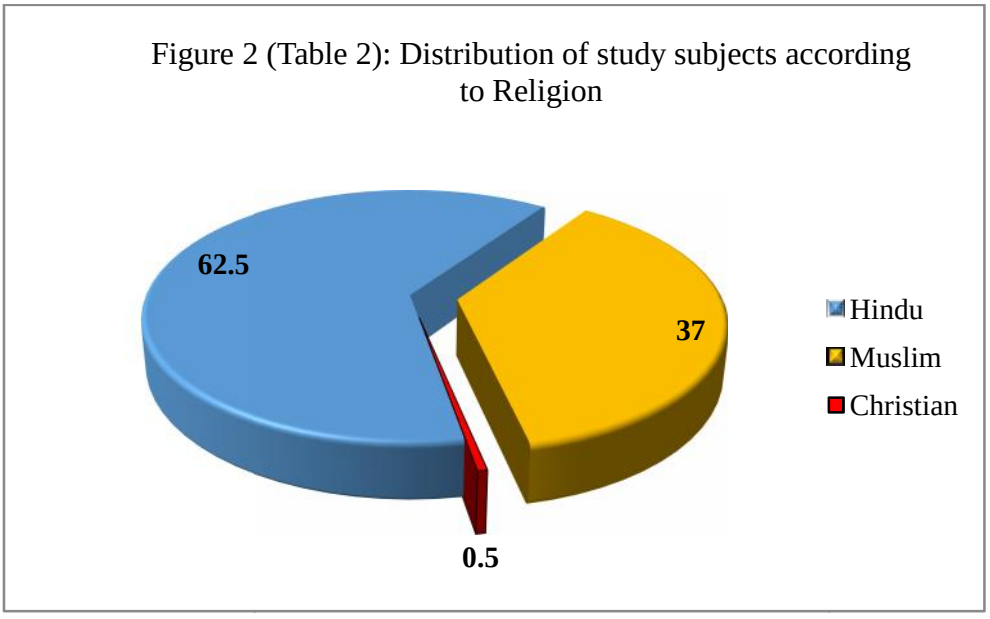


Figure 2 (Table 2): Distribution of study subjects according to Religion

Table 3: Distribution of study subjects according to educational status

Educational status	No.	%
Illiterate	130	17.9
Primary school	195	26.9
Middle school	139	19.2
High school	119	16.4
College	142	19.6
Total	**725**	**100**

In our study, 130 (17.9%) were found to be illiterate, 195 (26.9%) had primary school education, 139 (19.2%) had middle school education, 119 (16.4%) had high school education and 142 (19.6%) were educated up to college level.

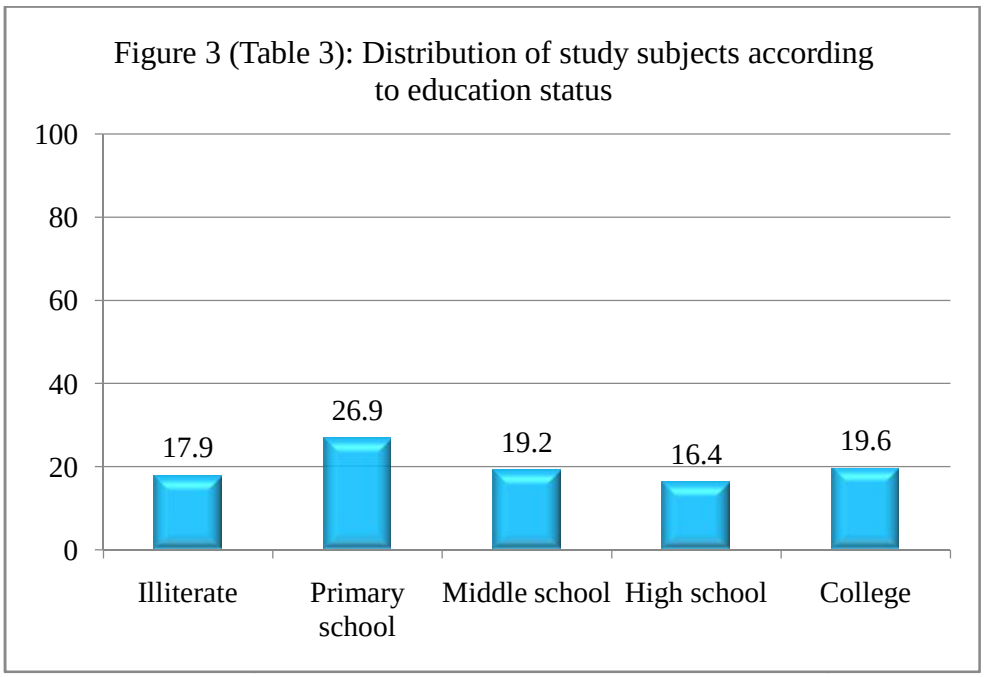


Table 4: Distribution of study subjects according to occupation

Occupation	No.	%
Unemployed/ student	126	17.4
Unskilled	249	34.3
Semiskilled	194	26.8
Skilled	75	10.3
Semi-professional/ professional	63	8.7
Retired/ old age dependant	18	2.5
Total	**725**	**100**

Unemployed or student group comprised of 126 (17.4%) of study participants. Unskilled group comprised of 249 (34.3%), semiskilled 194 (26.8%), skilled 75 (10.3%), semi-professional and professional group63 (8.7%). Retired or old age group had only 18(2.5%) subjects.

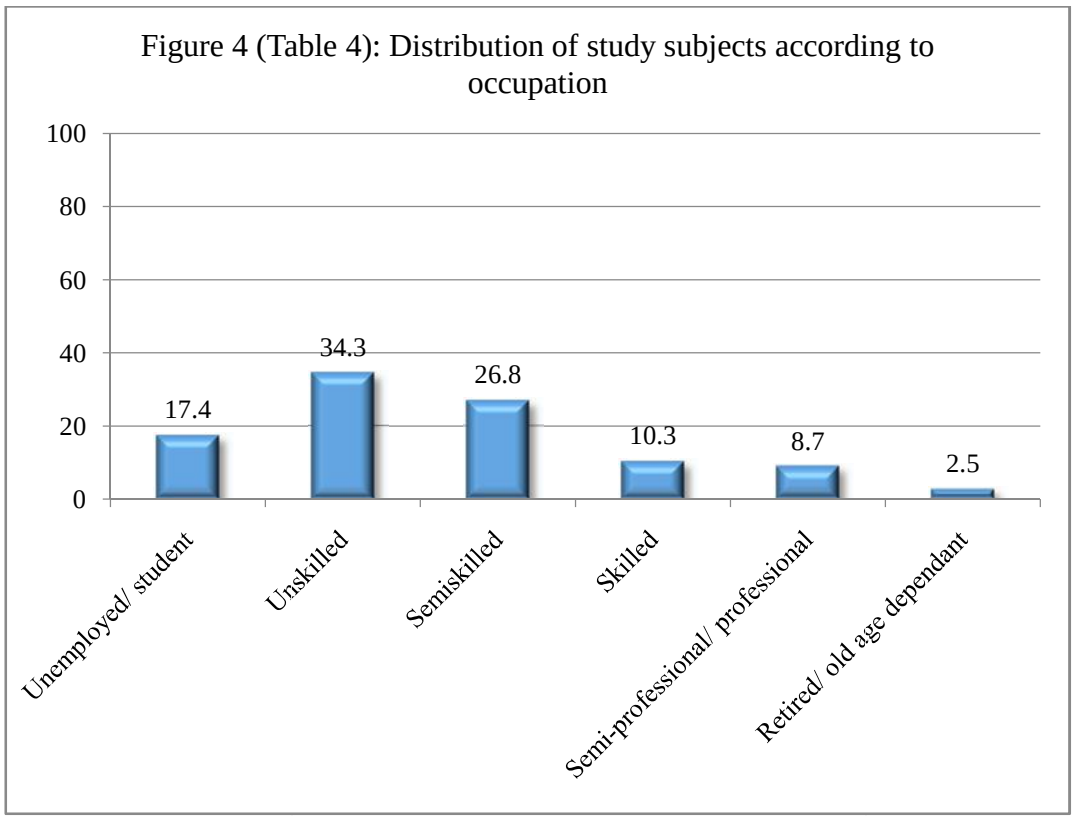


Table 5: Distribution of study subjects according to marital status

Marital status	No.	%
Unmarried	27	3.7
Married	265	86.2
Widowed	30	4.1
Divorced/ separated	43	5.9
Total	**725**	**100**

In the present study, majority 265 (86.2%) were married men, 27 (3.7%) were unmarried, 30 (4.1%) were widowed and divorced or separated were 43(5.9%).

Figure 5 (Table 5): Distribution of study subjects according to marital status

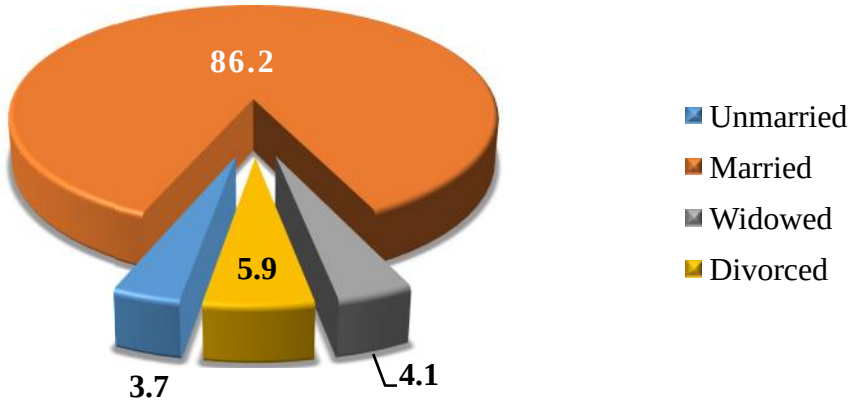


Table 6: Distribution of study subjects according to type of family

Family type	No.	%
Joint	328	45.2
Nuclear	317	43.7
Broken family	34	4.7
Problem family	46	6.3
Total	**725**	**100**

Out of 725 study subjects, 328 (45.2%) belonged to joint family, 317 (43.7%) were from nuclear family, 34 (4.7%) from broken family and 46 (6.3%) belonged to problem family.

Figure 6 (Table 6): Distribution of study subjects according to type of family

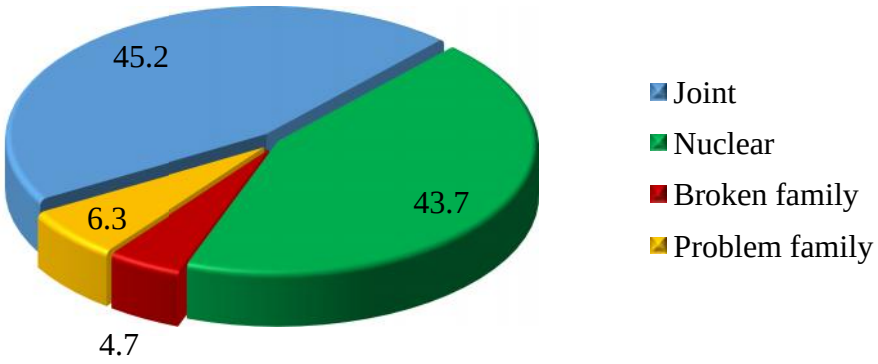
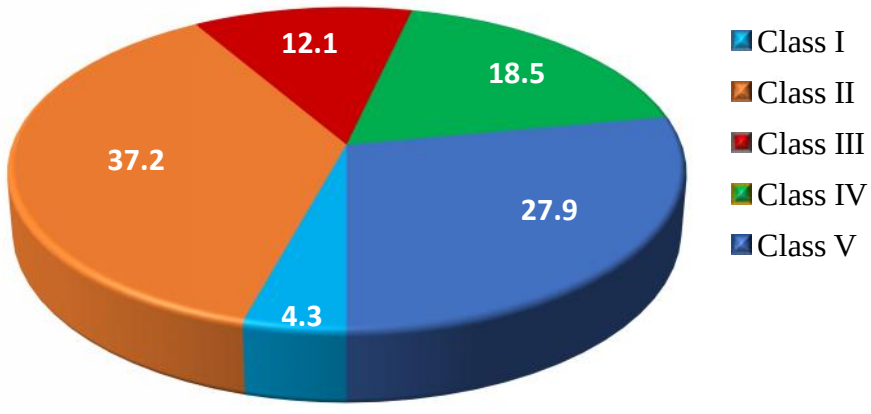


Table 7: Distribution of study subjects according Tosco economic status (Modified B. G. Prasad classification)

Socio Economic Status	No.	%
Class I	31	4.3
Class II	270	37.2
Class III	88	12.1
Class IV	134	18.5
Class V	202	27.9
Total	**725**	**100**

In the present study, 270 (37.2%) belonged to class II SES as per modified B.G. Prasad's classification; 202 (27.9%) to class V; 134 (18.5%) to class IV, 88 (12.1%) to class III and only 31 (4.3%) belonged to class I.

Figure 7 (Table 7): Distribution of study subjects according to Socio-economic status



2. PREVALENCE AND FACTORS AFFECTING TOBACCO USE

Table 8: Distribution of study subjects according to use of different forms of tobacco.

Prevalence of tobacco use	No.	%
Using only smoking form of tobacco	188	25.9
Using only smokeless form of tobacco	75	10.3
Same user using both forms of tobacco	141	19.4
Non- users	321	44.3
Total	**725**	**100**

In our study, the prevalence of both smoking and smokeless forms of tobacco together was 55.7%. Out of 725 study participants, 188(25.9%) were using only smoking form of tobacco, 75 (10.3%) only smokeless form and 141 (19.4%) of the subjects were using both forms of tobacco. 321 (44.3%) subjects were not using any form of tobacco.

Figure 8 (Table 8): Distribution of study subjects according to use of different forms of tobacco**.**

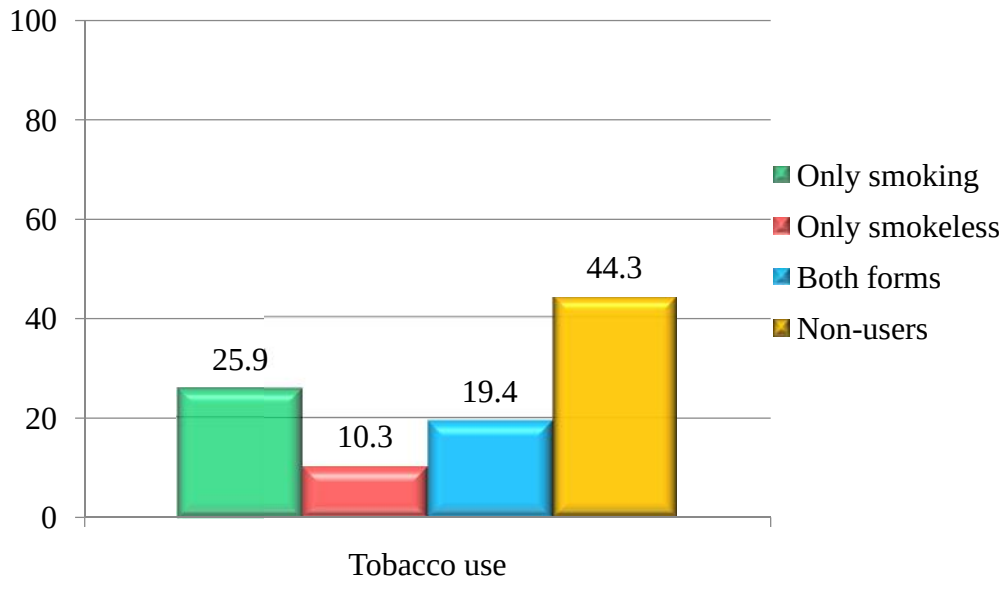


Table 9: Distribution of study subjects according to current smoking status

Smoking status	No.	%
Smoker	329	45.69
Non-smoker	396	54.31
Total	**725**	**100**

Out of 725 study participants, 329 (45.69%) were current smokers and 396 (54.31%) were not smoking tobacco currently.

Figure 9 (Table 9): Distribution of study subjects according to current smoking status

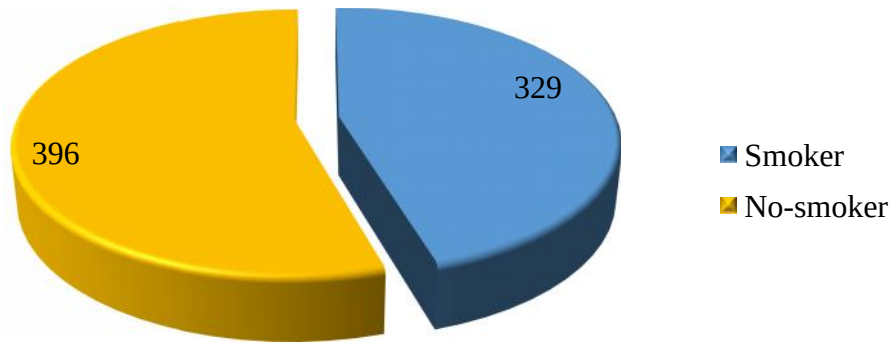


Table 10: Distribution of study subjects according to current status of use of smokeless form of tobacco

Usage of smokeless form of tobacco	No.	%
Currently using smokeless form	216	29.79
Currently not using smokeless form	509	70.21
Total	**725**	**100**

In the present study, 216 (29.79%) study participants were using smokeless form of tobacco and 509 (70.21%) were not using smokeless form of tobacco.

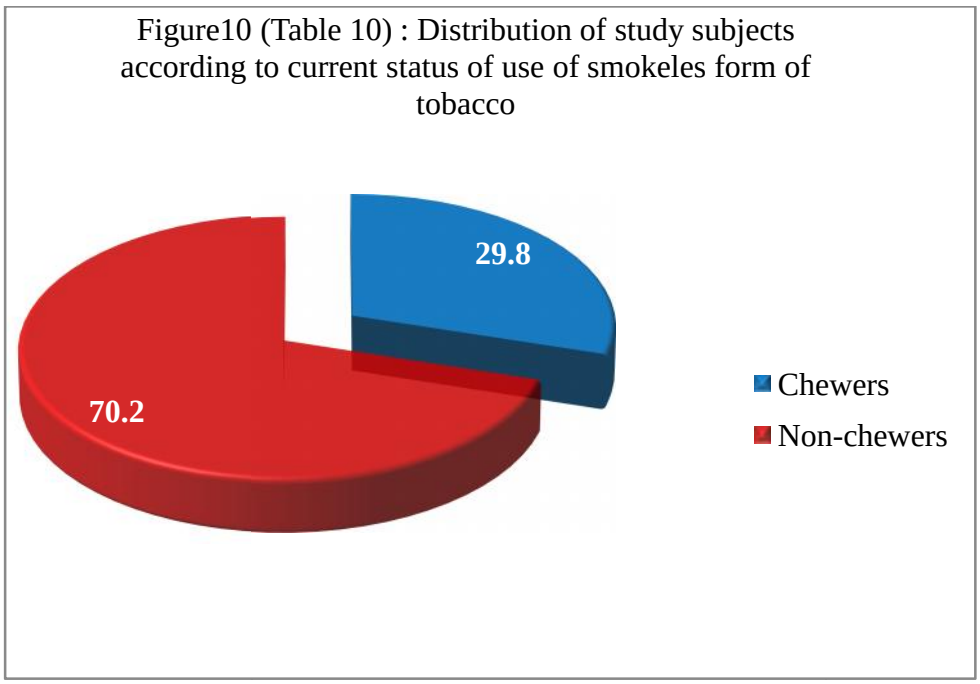


Figure10 (Table 10) : Distribution of study subjects according to current status of use of smokeles form of tobacco

Table 11: Distribution of smokers according to number of days smoked in past 30 days

Smoking in past 30 days	No. of days smoked	%
3 to 9 days	80	23.1
10 to 19 days	87	25.14
20 to 29 days	76	21.96
All 30 days	103	29.76
Total	**346**	**100**

In the present study, 103 (29.76%) smoked on all days of the month and 76 (21.96%) smoked for 20 to 29 days of the month. 87 (25.14%) men smoked for 10-19 days of the month and 80 (23.1%) smoked for 6 to 9 days per month.

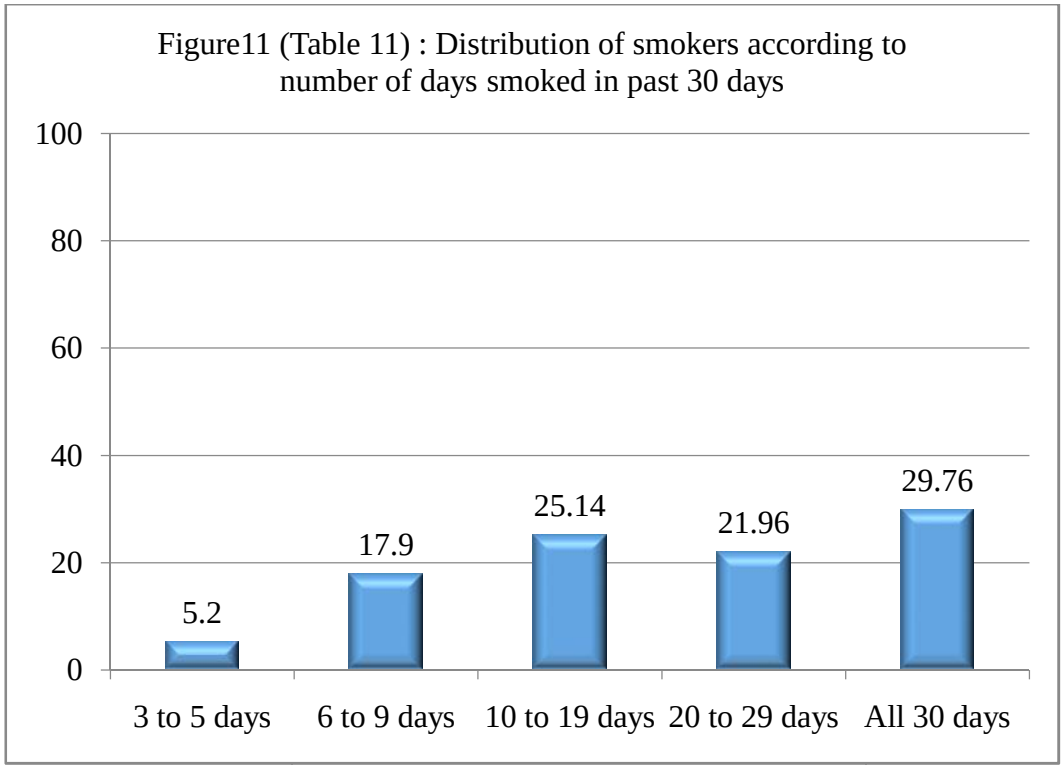


Table12: Distribution of smokers according to Cigarettes/beedis smoked per day

Cigarettes/beedis smoked per day	No.	%
Less than or equal to 1 cigarette/beedis per day	20	5.7
2 to 5 cigarettes/beedis per day	104	30.05
6 to 10 cigarettes/beedis per day	137	39.59
11 to 20 cigarettes/beedis per day	59	17.05
More than 20 cigarettes/beedis per day	26	7.51
Total	**346**	**100.0**

In our study, 137 (39.6%) smoked 6 to 10 cigarettes or beedis per day, 104 (30%) smoked 2 to 5 per day, 59 (17%) smoked 11 to 20 per day, 26 (7.5%) men smoked more than 20 per day and 20 (5.7%) smoked less than or equal to 1 cigarette or beedi per day.

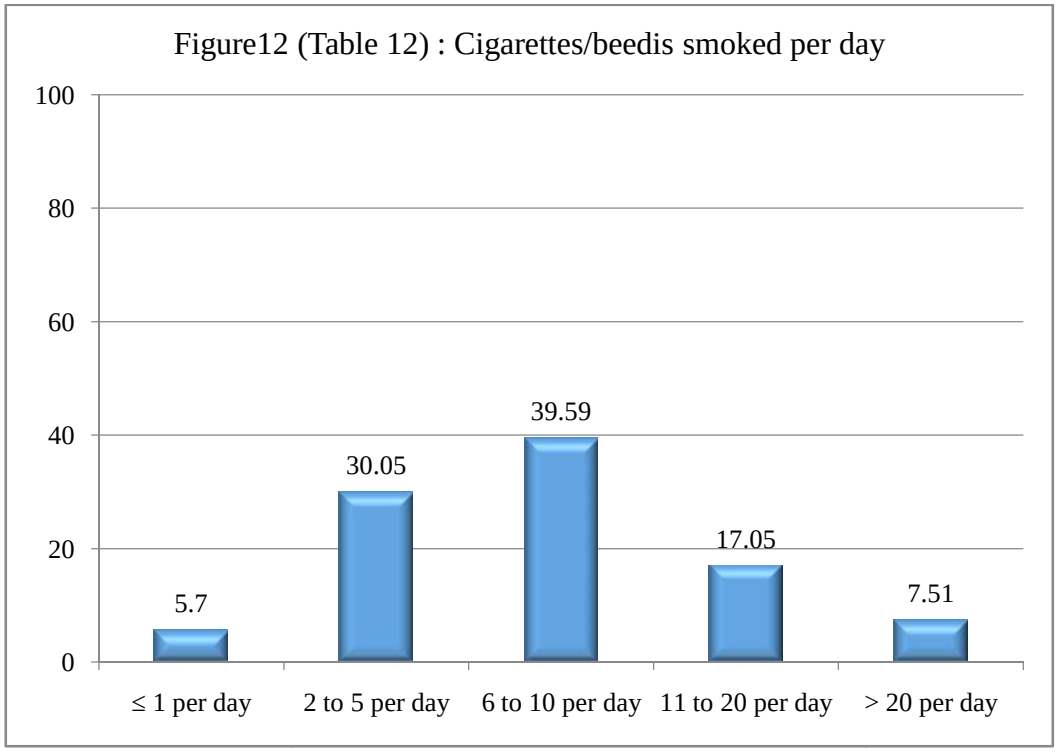


Table 13: Distribution of study subjects according to mode of acquiring smoking forms of tobacco

Mode of acquiring smoking forms	No.	%
Bought them in a store or a shop	274	71.38
Gave someone else money to buy them	50	14.45
Borrowed them from someone else	13	3.75
An older person gave them	9	2.58
Total	**346**	**100.0**

Out of 346 smokers, 274 (71.38%) said that they bought them in a store or a shop, 50 (14.45%) gave someone else money to buy them for them, 13 (3.75%) of them borrowed them from someone else and 9 (2.58%) got them from an older person.

Figure13 (Table 13) : Distribution of study subjects according to mode of acquiring smoking forms of tobacco

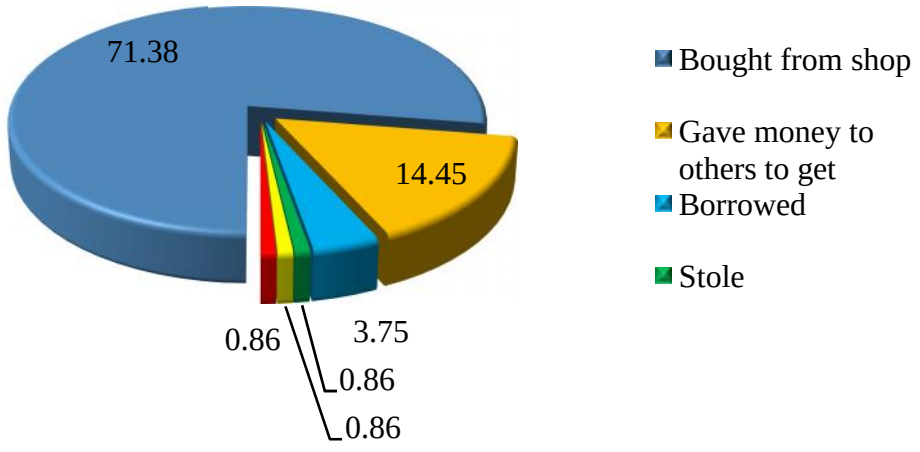


Table14: Distribution of study subjects according to type of cigarettes/beedis smoked in past 30 days (N=346)

Type of smoking form of tobacco	No.	%
Filters	36	10.4
Beedis	17	4.91
Both	291	84.1
Others (cigars etc.)	2	0.57
Total	**346**	**100**

In the present study, among 346 smokers, 36 (10.4%) were using filtered form (cigarette) and 17 (4.91%) men were using only beedis. But most of them were using both forms of tobacco 291 (84.1%) and only 2 (0.57%) of them were using cigars.

Figure14 (Table 14) : Distribution of study subjects according to type of cigarettes/beedis smoked in past 30 days

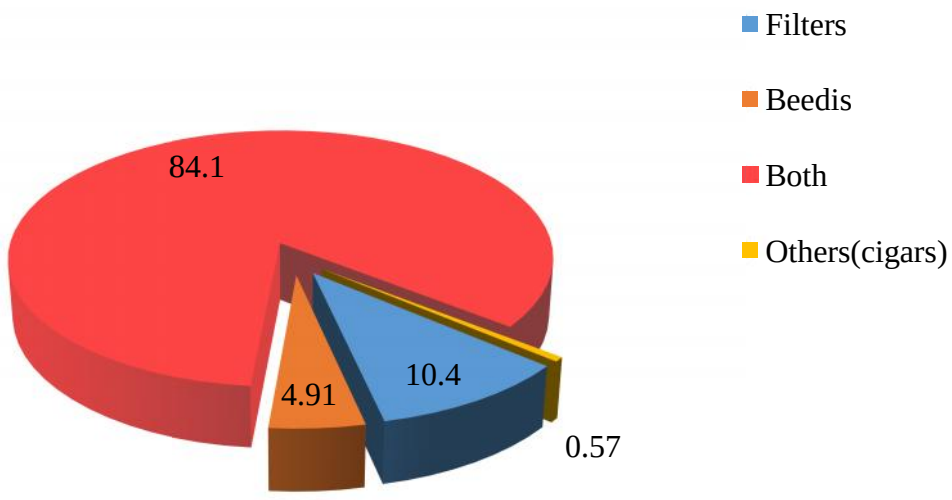


Table 15: Distribution of study subjects according to usage of different smokeless forms of tobacco products in past 30 days (N=216)

Smokeless form of tobacco products	No.	%
Chewing tobacco	158	21.8
Snuff	3	0.4
Pan masala	20	2.8
Gutkha	35	4.8
Total	**216**	**100**

In our study out of 725 men, 216 (28.8%) were users of smokeless forms of tobacco. 158 (21.8%) subjects used chewable tobacco, 3 (0.4%) used it insnuff form, 20 (2.8%) used pan masala and 35 (4.8%) were Gutkha users.

Table 16: Distribution of study subjects according to knowledge of act to control tobacco products

Knowledge of act to control tobacco products	Yes		No		Total	
	No.	%	No.	%	No.	%
Knowledge about act regarding tobacco control	543	73.7	192	26.3	**725**	**100**
In favour of the act to control tobacco products	680	93.8	45	6.2	**725**	**100**
In favour of prohibition of smoking in public place	564	77.79	161	22.21	**725**	**100**
Age limit for the sale of tobacco products	564	77.79	161	22.21	**725**	**100**

In the present study, majority 543 (73.7%) of the study subjects knew about the act to control tobacco products. 680 (93.8%) of the study subjects said that they are in favour of the act to control tobacco products. Prohibition of smoking in public place was favoured by564 (77.79%) of the subjects. 564 (77.79%) of them said that there should be age limit for the sale of tobacco products.

Table 17: Distribution of study subjects according to the source of information of act to control tobacco products

Source of information of act	No.	%
News paper	131	18.1
Television	157	21.7
Radio	19	2.6
Friends	73	10.1
Combination of mass media and friends	159	21.9
Don't know	186	25.7
Total	**725**	**100**

Out of 725 study subjects, when asked about the source of information of the act, 131 (18.1%) said they came to know about the act from newspaper, 157 (21.7%) from television, 19 (2.6%) from radio and 159 (21.9%) from varying combination of newspaper, television, radio and friends and only 73 (10.1%) of them got to know from their friends.

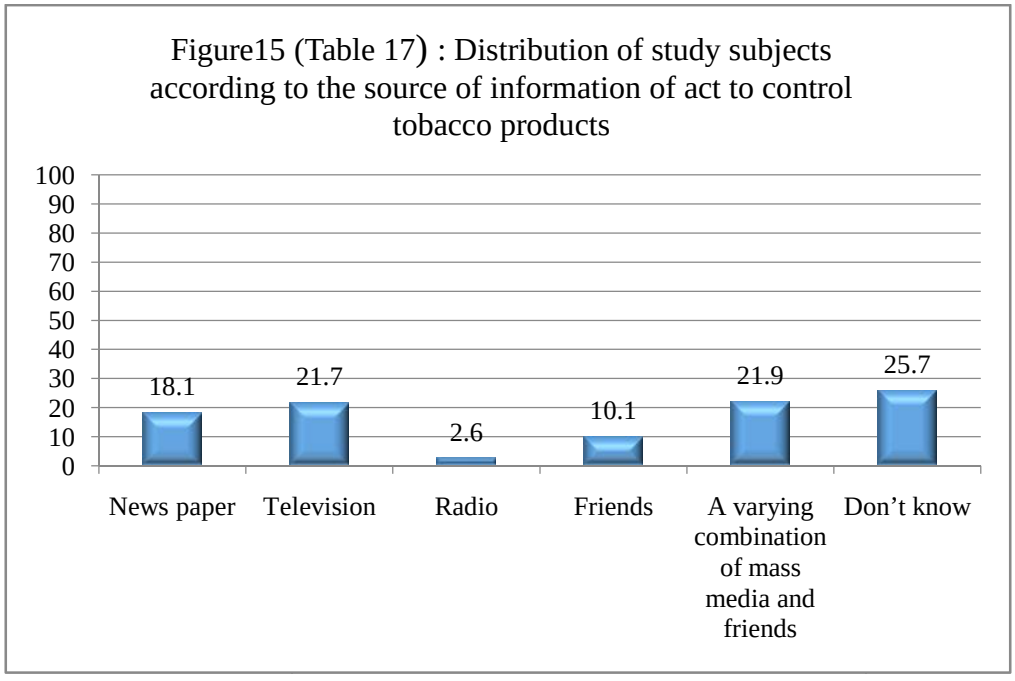


Table18: Distribution of study subjects according to the attitude towards the act to control tobacco products

Attitude towards the act to control tobacco products	Yes		No		Don't know	
	No.	%	No.	%	No.	%
Measures against smoking followed properly everywhere	161	22.2	266	36.7	298	41.1
Pictorial health warning causing reduction in the habit	226	31.2	243	33.5	256	35.3

Of the total, 161 (22.2%) of the men agreed that measures against smoking werefollowed properly everywhere and 266 (36.7%) said measures were not followed properly. 298 (41.1%) did not know about whether the measures were followed properly. When asked about the pictorial health warning over cigarette/beedi package in reducing the habit, 226 (31.2%) of the men said that the warning helps in reducing the habit, 243 (33.5%) said it does not help to reduce the habit and 256 (35.3%) said they did not know about whether the pictorial warnings reduce the habit.

Table19: Distribution of study subjects according to attitude towards the act to control tobacco products influencing to reduce the habit

Attitude towards the act to control tobacco products influencing in reduction ofthe habit	No.	%
Not at all	144	19.9
Reduction to some extent	139	19.2
Totally I quit smoking	155	21.4
Don’t know	124	17.1
I quit before the implementation of the act	33	4.6

In the present study, 144 (19.9%) of the study subjects said that the implementation of the act to control tobacco products won't influence in reducing the habit of tobacco use, 139 (19.2%) of them said there will be reduction to some extent, 155 (21.4%)said they will quit smoking totally after the implementation of the act, 124 (17.1%)said they do not know about this and 33 (4.6%)said they will quit using tobacco before the implementation of the act.

4. QUITTING PATTERN

Table 20: Distribution of study subjects according to age of initiation of tobacco use (N=558)

Age of initiation of tobacco use	No.	%
9 years or younger	91	16.27
10 to 15 years old	206	36.91
16 years or older	261	46.77
Total	**558**	**100**

In the present study, 261 (46.77%) initiated use of tobacco in the age of 16 years or older age whereas 206 (36.91%) started at the age of 10 to 15 years and 91 (16.27%) started using tobacco at the age of 9 years or younger.

Figure16 (Table 20) : Distribution of study subjects according to age of initiation of tobacco use

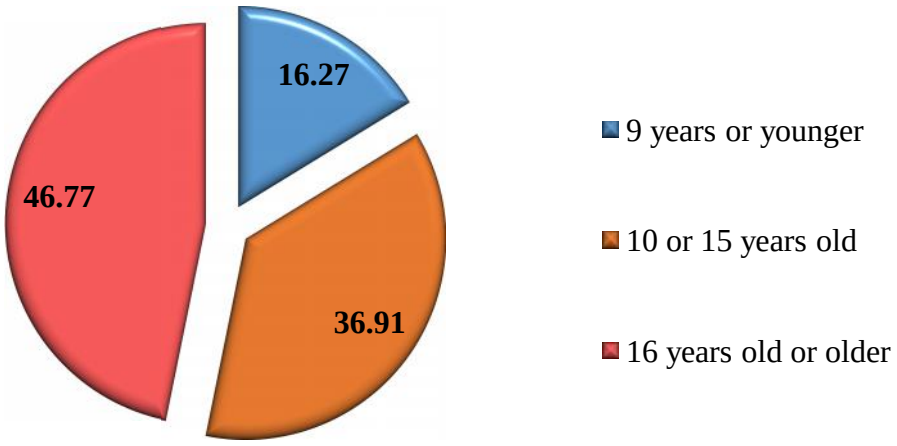


Table 21: Distribution of study subjects according to willingness to stop using smoking or smokeless form of tobacco (N=558)

Willingness to stop using smoking or smokeless form of tobacco	**No.**	%
I had used in the past but I do not use now anymore	343	47.3
I use every day or occasionally and I would like to stop using	152	21.0
I use every day or occasionally and I don't want to stop using	63	8.7
Total	**558**	**77**

The participants using tobacco when asked about the willingness to quit tobacco use, 343 (47.3%) of them said they have used in the past and they do not want to use tobacco anymore, 152 (21%) said they still use tobacco and want to quit, 63 (8.7%) said they do not want to stop using.

Table 22: Distribution of study subjects according to ever tried to stop using tobacco (N=556)

Ever tried to stop using tobacco	No.	%
Did not use during the past year	188	25.9
Had tried to quit	212	29.2
Had not tried to quit	158	21.8
Total	**556**	**75.9**

In our study, 188 (25.9%) of the subjects said that they did not use tobacco in the past one year, 212 (29.2%) of the individuals said that they have tried to stop using tobacco, 158 (21.8%) of the subjects said that they never tried to quit tobacco use.

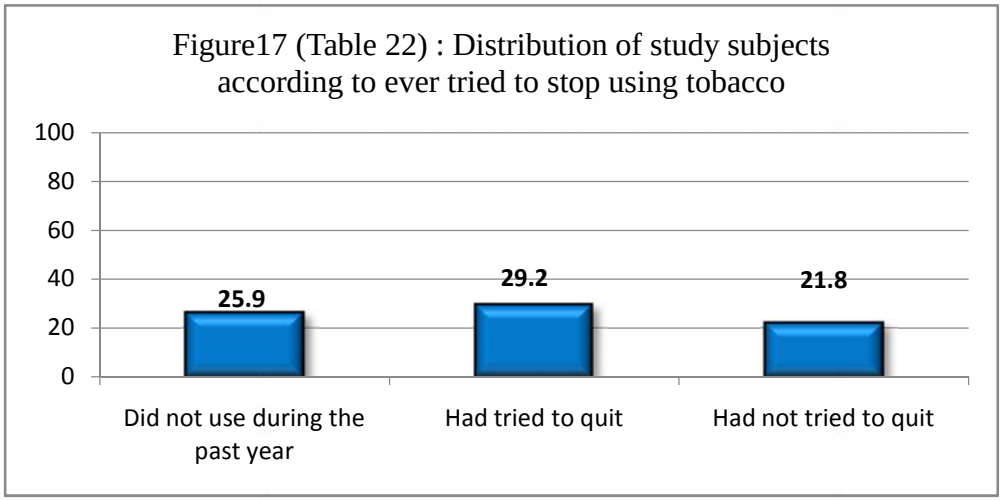


Table 23: Distribution of study subjects according to duration of abstinence of tobacco use (N=558)

Duration of abstinence of tobacco use	No.	%
Not stopped using tobacco	285	39.3
Stopped using 1-3 months ago	118	16.3
Stopped using 4-11 months ago	21	2.9
Stopped using 1 year ago	77	10.6
Stopped using 2 years ago or longer	57	7.8
Total	**558**	**76.9**

In the present study, 118 (16.3%) of the study subjects said that they have stopped using tobacco one to three months ago, 21 (2.9%) said they have stopped using 4 to 11 months ago, 77 (10.6%) stopped one year ago and 57 (7.8%) two years ago or longer. 285 (39.3%) of the individuals said they have not stopped using tobacco.

Figure18 (Table 23) : Distribution of study subjects according to duration of abstinence of tobacco use

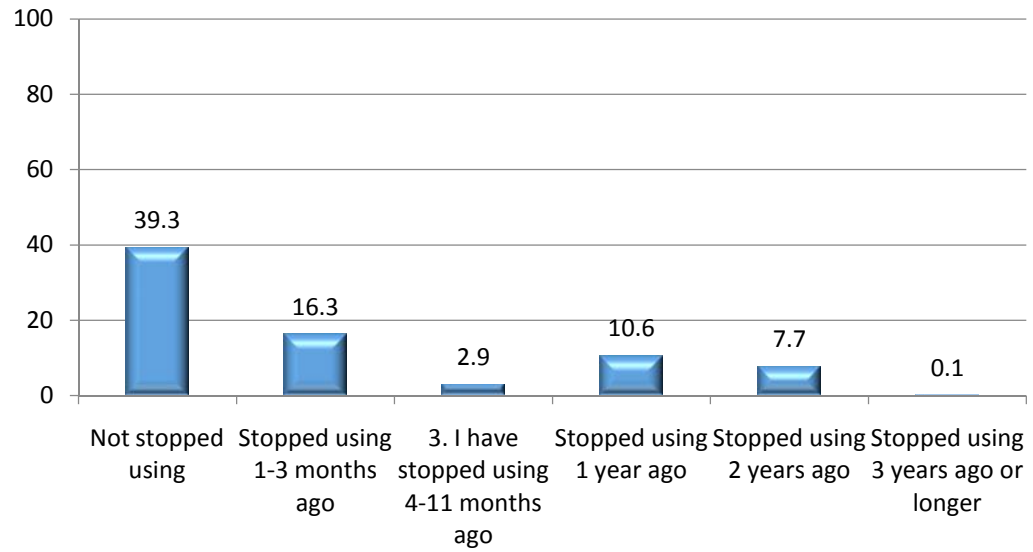


Table 24: Distribution of study subjects according treasons to stop using tobacco (N=285)

Reasons to stop using tobacco	**No.**	**%**
Respiratory problems like cough, breathlessness, wheeze	145	20.0
Reduced widening of mouth	4	0.6
Weight loss	19	2.6
Decreased working capacity	54	7.4
To save money	28	3.9
Because my family does not like it (family pressure)	35	4.8
Total	**285**	**39.3**

Among 285subjects, 145 (20%) of the subjects stopped using tobacco because of respiratory problems like cough, breathlessness, wheeze, 54 (7.4%) stopped because of decrease in work capacity, 28 (3.9%) to save money, 19(2.6%) stopped because of weight loss and only 4 (0.6%) stopped because of reduced widening of mouth.

Table 25: Distribution of study subjects according to help or advice received to stop using tobacco (N=558)

Help or advice received to stop using tobacco	No.	%
A program or professional	117	16.1
Friend	73	10.1
Family member	46	6.3
All the above	116	16.6
No advice received	206	28.4
Total	558	77.5

In our study, 117(16.1%) of the study participants had received help or advice to stop using tobacco, 73 (10.1%) received help from friends, 46 (6.3%) received help from a family member, and 116 (16.6%) received help from all of them. 206(28.4%) of the participants did not receive any help.

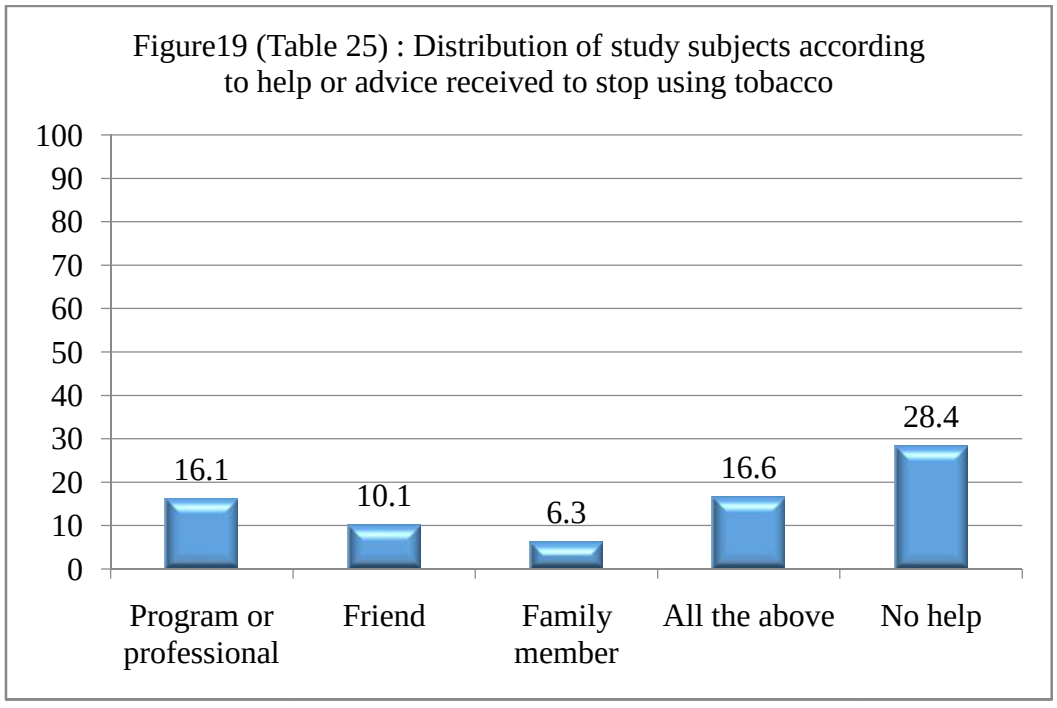


Table26: Distribution of study subjects according to knowledge of family members regarding tobacco use by the study subjects

Knowledge of family members regarding tobacco use by the study subjects	**No.**	**%**
Family members knew about tobacco use by the subjects	383	52.8
Family members did not know about tobacco use by the subjects	175	24.1
Total	558	76.9

In the present study, the family members of 383 (52.8%) of the study subjects knew about the use of tobacco by the subjects. 175 (24.1%) of the family members did not know about the use of tobacco by the study participants.

Table 27: Distribution of study subjects according to tobacco use by the other family members

Tobacco use by the other family members	No.	%
1. None	389	53.7
2. Father	162	22.3
3. Mother	6	0.8
4. Brother	121	16.7
6. Wife	1	0.1
7. Son	14	1.9
9. I don't know	32	4.4
Total	**725**	**100**

In our study, 389 (53.7%) of the study participants said that none of their family members were using tobacco, father was using tobacco among 162 (22.3%) of the participants, mother in 6 (0.8%), brother in 121 (16.7%) and son in 14 (1.9%). 32 (4.4%) of the participants did not know about the status of tobacco use by their family members.

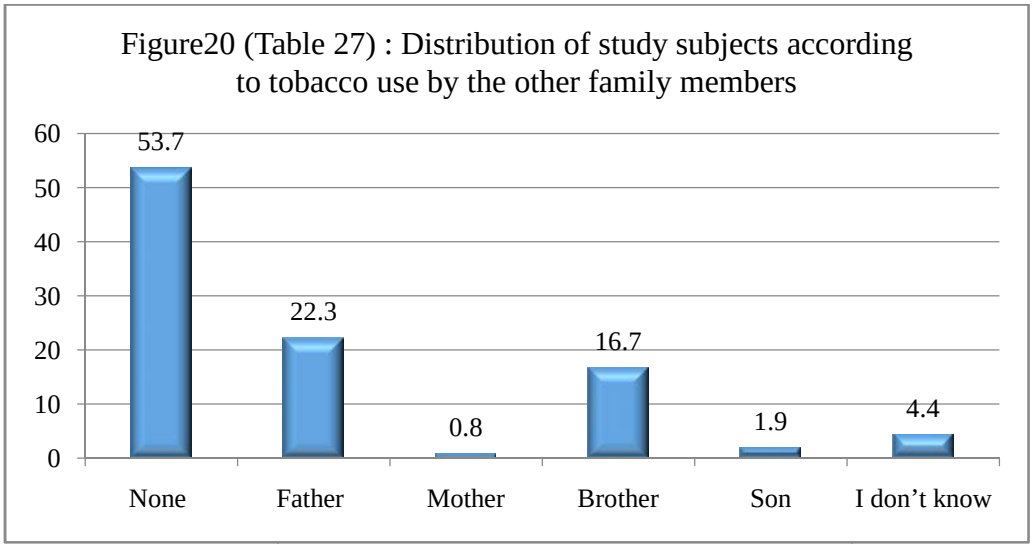


Table 28: Distribution of study subjects according to attitude towards quitting the use of tobacco

Attitude towards quitting tobacco use	Definitely not		Probably not		Probably yes		Definitely yes		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
If one of your best friends offered you a cigarette/ tobacco, would you use it?	96	13.2	265	36.6	201	27.7	163	22.5	725	100
Do you think it would be difficult to quit once someone has started using tobacco?	120	16.6	132	18.2	162	22.%	311	42.9	725	100

In our study, when offered by their friends, 96 (13.2%) of the study participants said that they definitely won't use tobacco, 265 (36.6%) said probably they won't use tobacco. 201 (27.7%) of the participants said that they might probably use tobacco, 163(22.5%) said they will definitely use tobacco when offered by their friends.

311 (42.9%) of the study participants said that definitely it would be difficult to quit if someone has started using tobacco. 162 (22.3%)said that probably it would be difficult to quit. 120 (16.6%)said that definitely it won't be difficult to quit and 132 (18.2%)said that probably quitting tobacco is difficult.

Table29: Distribution according to discussion by the family about the harmful effects of using tobacco with the subjects

Discussion by the family about the harmful effects of using tobacco with the subjects	No.	%
Had discussed with family members	483	66.62
Had not discussed with family members	242	33.38
Total	**725**	**100**

In the present study, 483 (66.62%) of the families had discussed regarding the harmful effects of using tobacco with the subjects. 242 (33.38%) of them said that their family members did not discuss about the ill effects of tobacco use.

Table30: Distribution of study subjects in response to whether using tobacco makes you look more or less attractive

Response to whether using tobacco makes you look more or less attractive	No.	%
Yes	95	13.1
No	337	46.5
Don't know	293	40.4
Total	**725**	**100**

Out of 725 study participants, 95 (13.1%) members felt that tobacco use makes one look attractive, 337 (46.5%) said that tobacco use does not make one look attractive. 293 (40.4%) of the men said they do not know whether tobacco use makes them look attractive or not.

5. MORBIDITY PATTERN

Table 31: Distribution of study subjects according to morbidities

Morbidity	Yes		No		Total	
	No.	%	No.	%	No.	%
Pathology in mouth and throat	309	42.62%	416	57.38	**725**	**100**
Pathology in Respiratory system	197	27.17	528	72.83	**725**	**100**
Pathology in Cardiovascular system	37	5.1	688	94.9	**725**	**100**
Pathology in Abdomen	44	6.07	681	93.93	**725**	**100**

In the present study, out of 725 study participants, 39 (42.62%) of the subjects had pathology in mouth and throat, 197(27.17 %) of the subjects had respiratory problems, 37 (5.1%) of the subjects had cardiovascular problems and 44 (6.07%) of the subjects had abdominal problems.

Figure 21 (Table 31): Distribution of study subjects according to morbidities

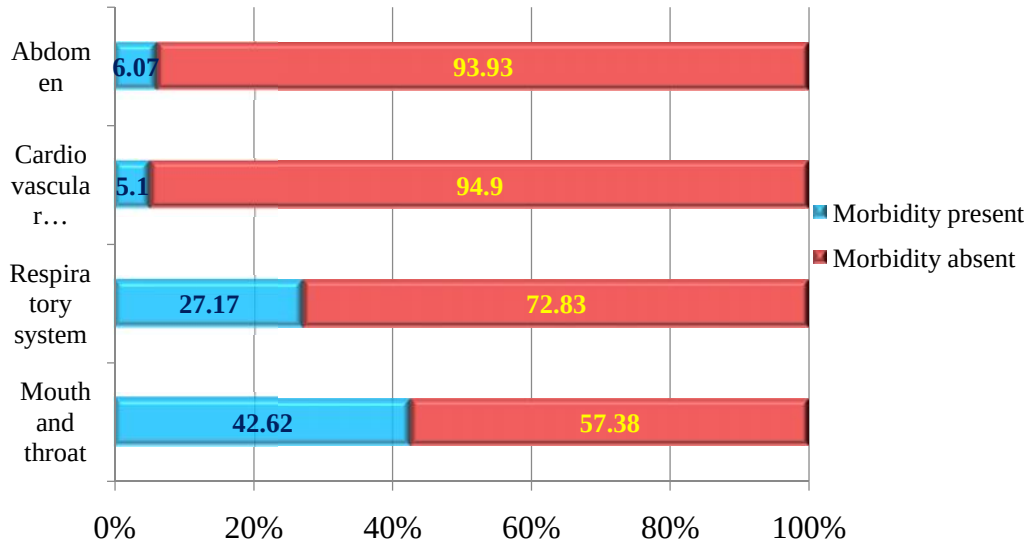


Table 32: Distribution of study subjects according to pathologies in mouth and throat

Pathology in mouth and throat	Yes		No		Total	
	No.	%	No.	%	No.	%
Staining of teeth	251	34.6	474	65.4	**725**	**100**
Leukoplakia	16	2.2	709	97.8	**725**	**100**
Oral submucous fibrosis	21	2.9	704	97.1	**725**	**100**
Tooth loss	77	10.62	648	89.38	**725**	**100**
Bleeding gums	52	7.2	673	92.8	**725**	**100**
Salivary gland enlargement	44	6.06	681	93.94	**725**	**100**

In our study, 251 (34.6%) of the subjects had staining of teeth, 16 (2.20%) of the subjects had signs and symptoms of leukoplakia, 21 (2.90%) of the subjects had clinical signs of oral submucous fibrosis, 77 (10.62%) of the subjects had tooth loss, 52 (7.2%) of the subjects had bleeding gums and 44 (6.06%) subjects had salivary gland enlargement.

Table 33: Distribution of study subjects according to pathologies in respiratory system

Pathology in respiratory system	Yes		No		Total	
	No.	%	No.	%	No.	%
Hoarseness of voice	34	4.7	691	95.3	**725**	**100**
Upper respiratory tract infection	129	17.8	596	82.2	**725**	**100**

In the present study, 34 (4.7%) of the subjects had hoarseness of voice and 129 (17.80%) of the subjects had upper respiratory tract infection.

Table 34: Association between age of initiation of smoking and quitting

Quitter	Age of initiation of smoking						Total	
	9 years or younger		10 to 15 years		16 years or older			
	No.	%	No.	%	No.	%	No.	%
Yes	109	51.2	76	35.7	28	13.1	**213**	**100**
No	442	86	52	10.3	18	3.7	**512**	**100**
χ^2=146.87 p<0.001 df-5								

In the present study, when the association between the age of initiation of smoking and quitting was seen. The difference was statistically significant. (p<0.001)

Figure 22 (Table 34): Association between age of initiation of smoking and quitting

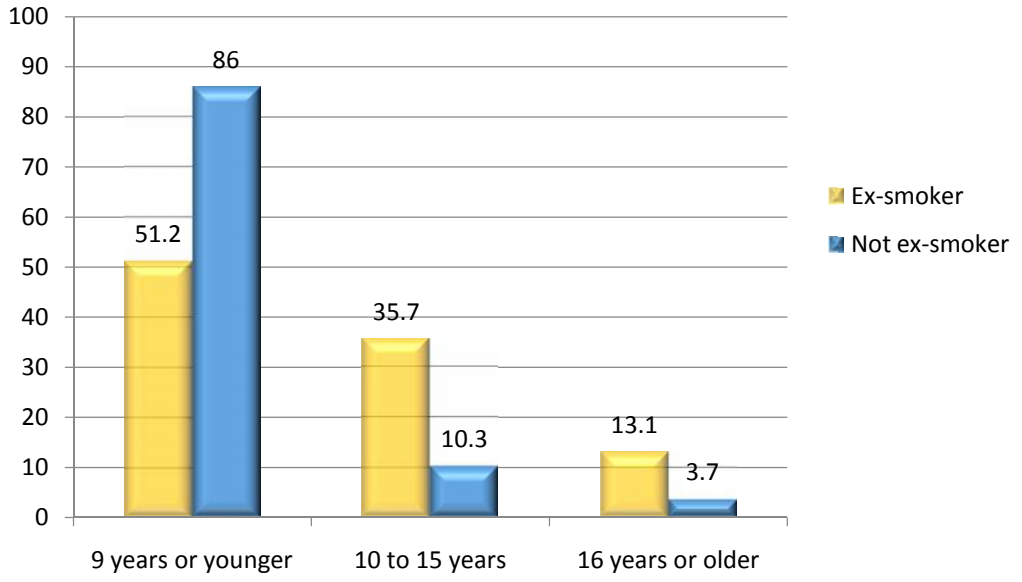


Table 35: Association between knowledge about users' habits in the families and quitting

Quitter	Knowledge about users' habits in the families				
	Yes		No		Total
	N	%	N	%	
Yes	84	39	129	61	**213**
No	300	58.6	46	9	**512**
Total	**384**	**52.96**	**175**	**47.04**	**725**
χ^2= 243.429 DF-2 p- <0.001					

When association between knowledge about users' habits in the family and quitting was seen, 84 (39%) of the families knew about the habits of the users and the difference was statistically significant.

Figure 23 (Table 35): Association between knowledge about users' habits in the families and quitting

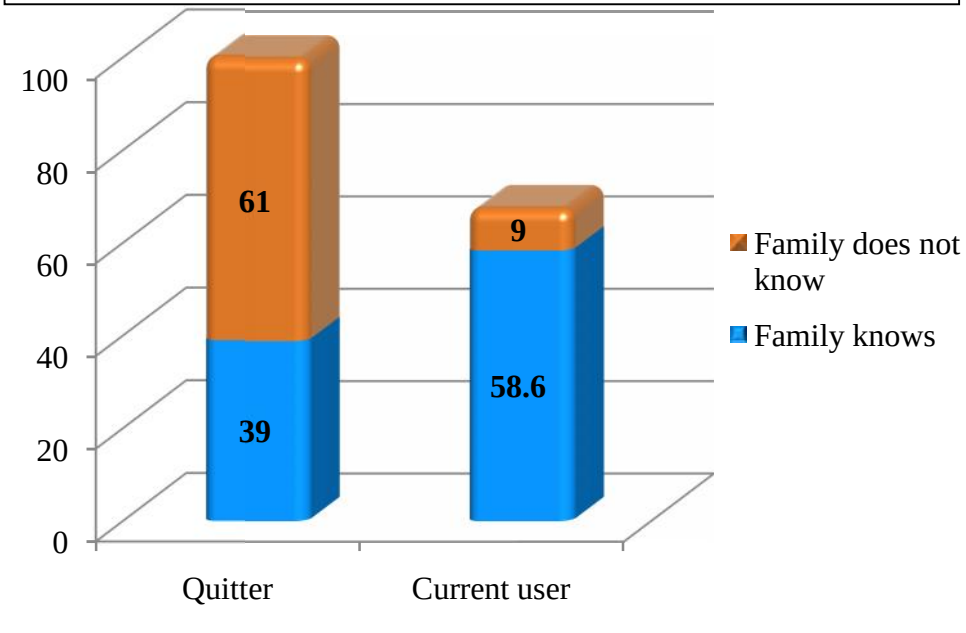
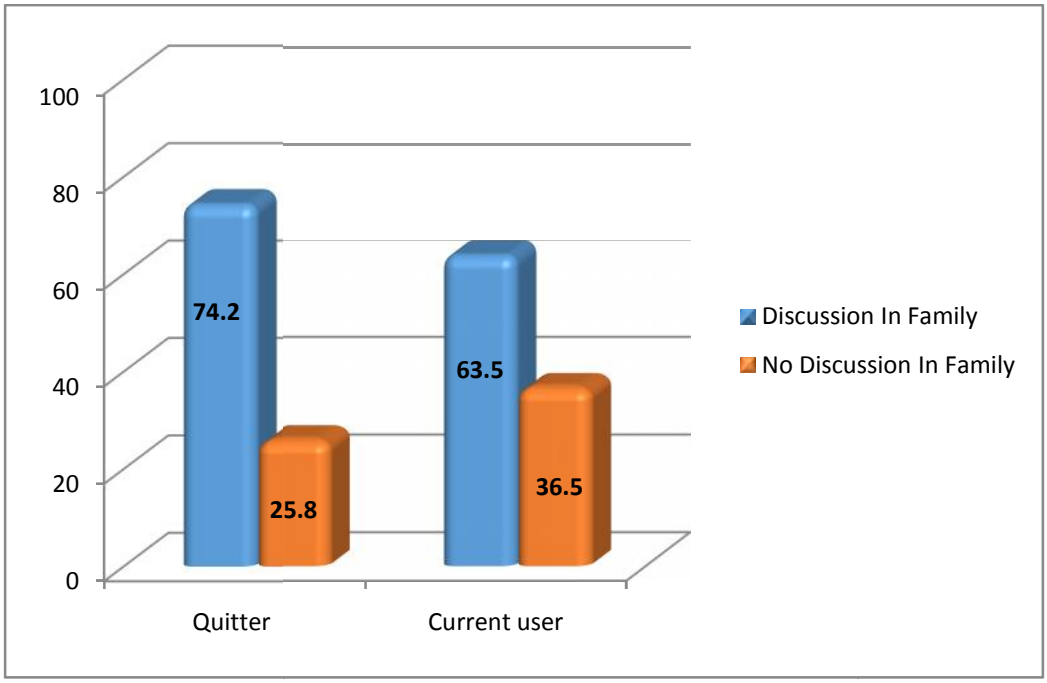


Table 36: Association between discussion in the family and quitting

Quitter	Discussion In Family				
	Yes		No		Total
	No.	%	No.	%	
Yes	158	74.2	55	25.8	**213**
No	325	63.5	187	36.5	**512**
Total	**483**	**66.62**	**242**	**33.38**	**725**
χ^2= 7.743 p= 0.005					

In our study, discussion in the family about the ill effects of tobacco use has helped the tobacco users to quit. 158 (74.2%) of the quitters said that family discussion helped them in quitting tobacco use. The association was statistically significant ($p<0.05$).

Figure24 (Table 36): Association between discussion in the family and quitting



DISCUSSION

I. PROFILE OF STUDY PARTICIPANTS (Table 1 to 7)

In the present study, out of 725 study participants maximum number of (32.6%) of men were in 36-45 years age group and minimum (4.0%) were in 18-25 years age group. In Global Adult Tobacco Survey India report, 29.5% were in 15-24 years age group, 42% in 25-44years, 21.7% in 45-64 years and 6.8% in more than 65 years age group.[11] According to NFHS-3, 10.1% were in 20-24years age group, 16.2% were in 25-34 years, 13.2% were in 35-44 years, 9.1% were in 45-54 years, 6.5% in 55-64 years and 4.7% were in more than 65 years age group.[4]

In the present study, 62.5% were Hindus, and 37.5% were Muslim & Christians. 17.9% were found to be illiterate, 26.9% had primary school education, 19.2% had middle school education, 16.4% had high school education and 19.6% had education till college level. According to NFHS-3 data, Hindu males accounted for majority (81.9%), Muslims accounted for 12.5% and other religions accounted for 5.2%[4] which is similar to our study.

In our study, majority of the study participants belong to unskilled group (34.3%) and semiskilled (26.8%). Unemployed or student group comprised of 17.4% of study participants, skilled were 10.3%, retired or old age dependant group 2.5%. Semi-professional and professional group had 8.7% of the subjects whereas the smallest number of subjects (2.5%) was in retired or old age group.

In the present study, majority of the study participants were married (86.2%), unmarried men were 3.7%, widowed 4.1% and divorced or separated were 5.9%. Whereas, according to NFHS-3, married individuals in the age group of 15-54 years

were 59%, unmarried 39.7%, widowed were 0.5%, divorced or separated were 0.5%.[4] The high percentage of divorced and separated men in our study may be because of social problems prevailing in slum areas.

In the present study, majority of the men (45.2%) belonged to joint family, 43.7% were from nuclear family, 4.7% were from broken family and 6.3% were from problem families. In contrast, NFHS-3 survey in urban areas showed nuclear families comprised of 63% and 37% were non-nuclear families.[4]

In the current study, majority of the study participants belonged to Class II SES (37.2%), followed by Class V (27.9%) and the least belonged to Class I (4.3%).

II. PREVALENCE AND FACTORS AFFECTING TOBACCO USE (Table 8 to 15)

In our study, the prevalence of both smoking and smokeless forms of tobacco together was 55.7%. This finding was similar to the NFHS-3[4] and National Household Survey of Drug and Alcohol Abuse in India (NHSDAA), conducted in 2002[13]. Whereas, the overall prevalence of tobacco use in our study is higher than Global Adult Tobacco Survey (GATS) India (47.9%).[11] In another study the prevalence of tobacco use was 61.89%.[15]

The prevalence of smoking was 45.7% and prevalence of smokeless form was 29.8% in the present study. The prevalence of use of both forms of tobacco by same user was 19.6%. In GATS survey the prevalence of smoking was 24.3% which was lesser than our study. The prevalence of use of smokeless form of tobacco was 32.9% in GATS India which is higher than our study. In another study, where the prevalence of smokers in slum was 30.7% and in non-slums it was 26.9% and that of smokeless form of tobacco was 35.1% in slums and 25.9% in non-slums.[16] According to NFHS-

3 data, one-third of men in 15-49tears age group smoke cigarettes or bidis.[4] In a study the prevalence of smoking in men was 81.1%.[15] In another study the prevalence was 30.7%.[16] High use of tobacco in our study subjects may be attributed to social acceptance of tobacco use in slum areas like ours and the faith that toothache is reduced by tobacco use.

In the current study, majority of the smokers were regular smokers (29.76%), who smoked on all days of the month followed by 21.96% who smoked for 20 to 29 days of the month. 25.14% men smoked for 10-19 days of the month, 17.9% smoked for 6 to 9 days and least (5.2%) were in the group who smoked for 3 to 5 days. In GATS India, regular smokers were 19.4%[11] (both cigarette and beedi) which is lesser than our study. According to NFHS-3 data 91% of the smokers were regular smokers which is much higher compared to our study.[4]

In our study, majority of the smokers (39.6%) smoked 6 to 10 cigarettes or beedis per day, 30% smoked 2 to 5 per day, 17% smoked 11 to 20 per day, 7.5% men smoked more than 20 per day and least were 5.7% who smoked less than or equal to 1 cigarette or beedi per day.

In the present study, the mode of acquiring the smoking forms of tobacco for 71.38% men was buying in a store or a shop, 14.45% gave money to someone else to buy for them, 3.75% of them borrowed from someone else and only 2.58% of them got by stealing from an older person and some other ways. According to GATS India report, about half of all cigarette (51%) and bidi (49%) smokers and users of smokeless tobacco products (55%) purchased tobacco products from stores.[11]

In our study, most of them were using both cigarettes and beedis (84.1%), 10.4% were using only filtered form (cigarette), 4.91% men were using only beedis

and 0.57% of them were using cigars. According to GATS India report, 34.42% of the smokers were using cigarettes and 65.58% were using bidis.[11]

In our study out of 216 users of smokeless forms of tobacco, most of the subjects (73.14%) used chewable tobacco since most of the users are construction workers, 1.4% used snuff, 9.25% used pan masala and 16.2% used Gutkha. In GATS India report, 32.9% of the male population above 15years were using smokeless tobacco product. Among them 7.5% were using betel quid with tobacco, 18% were using Khaini or tobacco-lime mixture, 13.1% were using Gutkha, tobacco lime, areca-nut mixture, 3.3% were using oral tobacco as snuff, mishri, gul, gudakhu and 3.5% were using other smokeless forms of tobacco. 27.4% men were regular users of smokeless form of tobacco.[11]

III. KNOWLEDGE AND ATTITUDE TOWARDS CONTROL OF TOBACCO PRODUCTS (Table 16 to 19)

In the present study, 73.7% were aware of act regarding control of tobacco products, major source of information were newspaper (18.1%), television (21.7%), varying combinations of mass media and friends (21.9%). According to GATS India report, the highest proportion of adults noticed anti-tobacco information on television (anti-cigarette 36%. Anti-bidi 36%, anti-smokeless tobacco 40%), followed by newspaper magazine (anti-cigarette 25%, anti-bidi 27%, anti-smokeless tobacco 32%). Over one-fifth of adults noticed anti-tobacco information on billboard (anti-cigarette 22%, anti-bidi 20%, anti-smokeless tobacco 24%).[11] In another study, awareness regarding legislation against smoking in public places was more in the higher age-groups. [44]

93.8% were in favour of the act, 77.8% were in favour of prohibition of smoking in public place, 77.79% felt that there should be an age limit for the sale of tobacco products. A study done in Odisha in 2011, revealed that 52.1% of the respondents were aware of Indian tobacco control laws, 80.8% of the respondents had knowledge about the provision of the law prohibiting smoking in public places.[45]

In the present study, 36.7% of the men felt that measures against smoking in public place are not followed properly, 40.6% felt that there will be reduction in the habit after the proper implementation of the act, 19.9% reported that there would not be any impact on their habit. A study done in Assam showed that there was positive attitude toward ban on smoking (72.3%), positive attitude toward ban on advertisement was seen in 61%, positive attitude toward prohibition on sale to minors and within 100 yards of educational institutions was seen in 83.7% and positive attitude toward specified health warnings was seen in 66.0%. 91.3% of the study subjects said that tobacco consumption in public places is banned.[46]

In our study, 31.2% of the men said the pictorial warning over package of tobacco products reduces the habit, 33.5% said they won't reduce the habit, 35.3% said they do not know about this. A study done in Panchkula among non-healthcare professionals showed that 94.2% noticed tobacco warning, 97.5% understood tobacco warning, 71.1% said that warnings create awareness about hazards and 73% said that warning was effective in quitting/ reducing tobacco use.[47] A study done in Nainital, India showed that of the 183 patients, 146 (79.8%) stated as being aware about the presence of pictorial health warnings (PHW), while 20.2% stated as being unaware of the presence of PHWs on tobacco products. 10.3% initiated use of tobacco before

PHWs were being displayed upon the products. 6.2% admitted that they had not noticed the warnings seriously.[48]

IV. QUITTING PATTERN (Table 20 to 30)

In the present study, majority of the people (46.77%) initiated use of tobacco in the age of 16 years or older, 36.91% started at the age of 10 to 15 years and 16.27% started using tobacco at the age of 9 years or younger. A study done in Jamnagar, Gujarat showed that most of quitters (84.2%) had started tobacco use between the age of 20 and 30, while the year span was five years earlier i.e. start between 15-30 years in 76.6% of current-tobacco-chewers. Almost 30% of current users had started before 20 years of age.[5]

The participants using tobacco when asked about the willingness to quit tobacco use, 47.3% of them said they have used in the past and they do not want to use tobacco anymore, 21% said they still use tobacco and want to quit, 8.7% said they do not want to stop using. In our study, 25.9% of the subjects said that they did not use tobacco in the past one year, 29.2% of the individuals said that they have tried using tobacco, 21.8% of the subjects said that they never tried to quit. In the present study, 16.3% of the study subjects said that they have stopped using tobacco one to three months ago, 2.9% said they have stopped using 4 to 11 months ago, 10.6% stopped one year ago and 7.8% two years ago or longer. 39.3% of the individuals said they have not stopped using. In GATS report, 35.4% men made a quit attempt. In a study 58.3% of quitters and 74.1% of current-chewers who were willing to quit had not used tobacco for more than five years. Amongst those who were not ready to quit, 80% had chewed tobacco for more than five years.[11]

In response to reason for stopping tobacco use, majority (20%) of the subjects stopped using tobacco because of respiratory problems like cough, breathlessness, wheeze etc., 7.4% stopped because of decrease in work capacity, 3.9% to save money, 2.6% stopped because of weight loss and 0.6% stopped because of reduced widening of mouth. In a study, among the successful quitters, major reasons for quitting were found to be initiation of health problems (72.2%), which included respiratory problems like coughing, breathlessness, short breathing and wheezing; reduced widening of mouth, weight loss and decreased working capacity cumulatively. Promises which were self-offered or resulted from positive preaching from the local religious leaders towards quitting of tobacco played a role in 60.2% of cases, while the reason was familial pressure either by spouse or by other family member(s) in 40.7% of the cases.[5]

In our study, 16.1% of the study participants had received help or advice to stop using tobacco, 10.1% received help from friends, 6.3% received help from a family member, and 16.6% received help from all of them. 28.4% of the participants did not receive help from anybody. In a study done in Beijing, after counselling, 71.38% showed that the quitting rates at the 7-day point and 3 months were 34.9% and 25.5%, while the rates were 25.1% and 18.3% among the 355 smokers who had the intention for treatment.[49] In GATS India report 46.6% of the males visited a health care provider to seek advice regarding quitting tobacco use. 14.5% men were planning to quit within next month and 39.8% said that they are not interested in quitting. The proportion of smokers who were asked about smoking status and advised about quitting was found to increase substantially with age.[11]

In the present study, the family members of 52.8% of the study subjects knew about the use of tobacco by the subjects. 24.1% of the family members did not know about the use of tobacco by the study participants. According to GATS survey, 4.3% received pharmacotherapy, 9.2 received counselling and 26.7% used other methods like traditional medicines for quitting. About 22% reported that they used other methods like willpower or insistence of family members/friends along with other traditional methods.[11]

In the present study, 53.7% of the study participants said that none of their family members were using tobacco, father was using tobacco among 22.3% of the participants, mother in 0.8%, brother in 16.7%, and son in 1.9%. 4.4% of the participants did not know about the status of tobacco use by their family members. A study done in Saudi Arabia showed that 52.4% of the study population had a family member with smoking habit. Among them, 22.8% were fathers, 38.2% were brothers, 8.6% were sisters, 4.5% spouse, 1.4% mother and 7% were others.[50]A study done among high school students in West Bengal showed that 98.5% of the current users got exposure to tobacco from family members, 79.3% from friends and from teachers 68.9%.[51]

In our study, when offered by their friends, 13.2% of the study participants said that they definitely won't use tobacco, 36.6% said probably they won't use tobacco. 27.7% of the participants said that they might probably use tobacco, 22.5% said they will definitely use tobacco when offered by their friends. The amount of influence over the school year was modest in magnitude and came from the closest friend for initiation of cigarette.[52] Another study is consistent with the findings of our study, where in teenagers who have parents or friends who smoke are more

susceptible to smoking.[53] Longitudinal studies, however, demonstrate that having friends who smoke is a consistent predictor of tobacco use: youth who report having more friends who smoke (than friends who do not smoke) are more likely to have initiated or to subsequently initiate smoking.[54]

Majority of the study subjects (42.9%) said that definitely it would be difficult to quit if someone has started using tobacco. 22.3% said that probably it would be difficult to quit. 16.6% said that definitely it won't be difficult to quit, 18.2% said that probably quitting tobacco is difficult.

66.62% of the families had discussed the harmful effects of using tobacco with the subjects. 33.38% of them said that their family members did not discuss about the ill effects of tobacco use.

In our study, discussion in the family about the ill effects of tobacco use has helped the tobacco users to quit. 74.2% of the quitters said that family discussion helped them in quitting tobacco use. The association was statistically significant ($p<0.05$).

Out of 725 study participants, 95 (13.1%) members felt that tobacco use makes one look attractive, 337 (46.5%) said that tobacco use does not make one look attractive. 40.4% of the men said they do not know whether tobacco use makes them look attractive or not. A study done in West Bengal showed that, 25% of the participants felt that tobacco using boys are more attractive, tobacco using boys are more intelligent/ successful (14.69%) and tobacco using boys get more friends in their lives (14.94%).[51]

V. MORBIDIDITY PATTERN (Table 31 to 33)

In the present study, out of 725 study participants, 39 (42.62%) of the subjects had pathology in mouth and throat, 197 (27.17 %) of the subjects had respiratory problems, 37 (5.1%) of the subjects had cardiovascular problems and 44 (6.07%) of the subjects had abdominal problems.

In our study, 251 (34.6%) of the subjects had teeth stain, 16 (2.20%) of the subjects had signs and symptoms of leukoplakia, 21 (2.90%) of the subjects had clinical signs of oral submucous fibrosis, 77 (10.62%) of the subjects had tooth loss, 52 (7.2%) of the subjects had bleeding gums and 44 (6.06%) of the subjects had salivary gland enlargement. Similar findings were found in a study done in Manipal, Karnataka.[55]

In the present study, 34 (4.7%) of the subjects had hoarseness of voice and 129 (17.80%) of the subjects had upper respiratory tract infection.

VI. ASSOCIATIONS (Table 34 to 36)

In the present study, when the association between the age of initiation of smoking and quitting was seen. The difference was statistically significant ($p<0.001$). When association between knowledge about users' habits in the family and quitting was seen 39% of the families knew about the habits of the users and the difference was statistically significant ($p<0.001$). In our study, discussion in the family about the ill effects of tobacco use has helped the tobacco users to quit. 74.2% of the quitters said that family discussion helped them in quitting tobacco use. The association was statistically significant ($p<0.05$). 51.8% of successful quitters had a family member

using tobacco in any form. The difference between ex-smoker and not an ex-smoker having a family member using tobacco was statistically significant ($p<0.001$).

In a study conducted in Gujarat, About 63.9% of current-tobacco-chewers had a family member consuming tobacco in any form, while 48.2% of quitters had a history of any family member consuming tobacco in any form. Among the successful quitters, major reasons for quitting were found to be initiation of health problems (72.2%), which included respiratory problems like coughing, breathlessness, short breathing and wheezing; reduced widening of mouth, weight loss and decreased working capacity cumulatively. The findings in our study were similar to a study where in smoking habit was associated with presence of smokers in the family.[56] In another study, the smoking cessation rate was 46.3% among occasional smokers, 12.3% among daily smokers of 1 to 9 cigarettes, and 6.8% among daily smokers of 10 or more cigarettes. Smoking cessation was associated with occasional smoking status, and definite intentions to quit in the future (OR-2.67). Most of those with definite intentions to quit in the future were occasional smokers.[57]

CONCLUSION

The present community based study, reported a higher prevalence of tobacco use among men above the age of 18 years. The tobacco use varied with age and type of tobacco. Most of the smokers used both cigarettes and beedis. There was significant association with socio-demographic factors like age group, education, occupation, marital status, type of family and socio-economic class.

The knowledge about the act to control tobacco product was not adequate among the study participants. But majority of the study subjects were in favour of the act.

Most of the users initiated the use of tobacco at young age which shows that there is a need to focus the adolescents to educate about the ill effects of tobacco use. A good number of current tobacco users wished to quit which shows that there is need for appropriate interventions like behavioural change communication.

Majority of the subjects stopped using tobacco because of respiratory problems and decreased work capacity. Tobacco use by family members was significantly associated with the current users. Discussion in the family about the ill effects of tobacco use has helped the tobacco users to quit. But peer pressure played an important role in influencing the subjects to use tobacco.

Majority of the study participants had pathology in mouth and throat. Pathologies in respiratory system, cardiovascular system and per abdomen were significantly associated with the tobacco use.

LIMITATIONS

The limitations of the study were:

1. Some people may not disclose about their habit of tobacco use and there are chances of recall bias, particularly, in case of long term tobacco users.
2. As this was a cross sectional study, long term effects of tobacco use could not be studied.

RECOMMENDATIONS

1. Behavioural and lifestyle change can be brought through education of people. Since age of initiation of tobacco use was high in the adolescent age group, education regarding ill effects of tobacco use should be made compulsory in schools and colleges. School curriculum should include health consequences of tobacco use. There should be separate allocation of funds, personnel and other resources by the government to perform educational activities to prevent tobacco use.

2. Mass media should be used to increase the awareness regarding the injurious effects of tobacco use among the general population. The messages regarding the effects of tobacco should be telecasted in government as well as private channels every day frequently. Information, education and communication activities should be conducted frequently to raise the community awareness to tackle the problems arising out of lack of awareness.

3. Large sized pictorial health warnings should be printed on both sides of the packages of all forms of tobacco products. They should be self explanatory so that illiterate people can easily understand. With the consent of the people affected by the use of tobacco, the pictures of the affected parts should be displayed on the packages.

4. Government should take action to make policies to reduce the agricultural production of tobacco and to restrict the development of tobacco trade in a phased manner. There must be regular community surveys among specific groups to keep track of trends in tobacco use. There should be active involvement of the community, health institutions and non-governmental organizations in tobacco control. Effective implementation of laws like protection of non-smokers from second hand smoke by

prohibiting smoking in public places and prohibition of sale of tobacco products to minors should be done. Policy to regulate the contents in the tobacco products, especially, the nicotine and tar content should be implemented. There must be complete ban on tobacco advertisement, promotion and sponsorship in any manner.

5. Finally those who were tobacco dependent should be treated by behavioural and pharmacological therapies for smoking cessation. Behavioural interventions such as physician advice, self-help materials especially individually tailored materials, psychological interventions, mass media communication campaigns, telephone quit lines/Internet-based services, quit and win competitions and smoke-free places are helpful. The pharmacologic agents that are used for smoking cessation include nicotine replacement medications and non nicotine medications. Social support for quitting, training of health professionals and integration of smoking cessation in other health programmes are essential for successful implementation of tobacco cessation programmes. To provide tobacco cessation services by establishing Tobacco Cessation Clinics (TCC) in all health institutions. Overall development of the weaker sections of the community should be given priority as they are more likely to be worst affected by the tobacco use.

SUMMARY

The present study was a community based cross sectional study undertaken to study the prevalence of tobacco use among men above the age of 18 years in an urban area of Belgaum.

The study included 725 participants aged above the age of 18 years belonging to area under Urban Health Centre, Ramnagar, Belgaum which is an urban field practice area of Department of Community Medicine, KLE University's J. N. Medical College, Belgaum. The duration of study was one year from 1st January 2013 to 31st December 2013. A pre-designed and pre-tested questionnaire was used to collect the data from the participants.

The study revealed the following findings:

In the present study, 24% were in the age group of 18 – 25 years, 5.5% were between in the age group of 26 -35 years, 32.6% were in 36-45 years, 23% were in 46-55 years, 10.3% were between 56-65 years and 34.6% were in the age group of 65 years and above. Majority of the study subjects (62.5%) were Hindus, 37% were Muslims and only 0.5% were Christians.

In our study, 17.9% were found to be illiterate, 26.9% had primary school education, 19.2% had middle school education, 16.4% had high school education and 19.6% were educated up to college level. Unemployed or student group comprised of 17.4% of study participants. Unskilled group comprised of 34.3%, semiskilled 26.8%, skilled 10.3% and semi-professional and professional group 8.7%. Retired or old age group had only 2.5% subjects.

In the present study, majority (86.2%) were married men, unmarried men were 3.7%, widowed 4.1% and divorced or separated were 5.9%. A majority (45.2%) of study subjects belonged to joint family, 43.7% were from nuclear family, 4.7% were from broken family and 6.3% belonged to problem family. Most of the study subjects (37.2%) belonged to class II SES; 27.9% to class V; 18.5% to class IV, 12.1% to class III and only 4.3% belonged to class I.

In our study, the prevalence of both smoking and smokeless forms of tobacco together was 55.7%. 25.9% were using only smoking form of tobacco, 10.3% only smokeless form and 19.4% of the subjects were using both forms of tobacco. 44.3% subjects were not using any form of tobacco. 29.76% smoked on all days of the month and 21.96% smoked for 20 to 29 days of the month. 25.14% men smoked for 10-19 days of the month and 23.1% smoked for 6 to 9 days. In our study, 39.6% smoked 6 to 10 cigarettes or beedis per day, 30% smoked 2 to 5 per day, 17% smoked 11 to 20 per day, 7.5% men smoked more that 20 per day and 5.7% smoked less than or equal to 1 cigarette or beedi per day.

Out of 346 smokers, 71.38% said that they bought them in a store or a shop, 14.45% gave someone else money to buy them for them, 3.75% of them borrowed them from someone else and 2.58% got them from an older person. 10.4% were using filtered form (cigarette) and 4.91% men were using only beedis.

In our study out of 725 men, 28.8% were users of smokeless forms of tobacco. 21.8% subjects used chewable tobacco, 0.4% used it in snuff form, 20 2.8% used pan masala and 4.8% were Gutkha users.

In the present study, majority 73.7% of the study subjects knew about the act to control tobacco products. 93.8% of the study subjects said that they are in favour of the act to control tobacco products. Prohibition of smoking in public place was favoured by 77.79% of the subjects. 77.79% of them said that there should be age limit for the sale of tobacco products.

Out of 725 study subjects, 21.7% said they came to know about the act to control tobacco products from television, 18.1% from newspaper, 2.6% from radio and 21.9% from varying combination of newspaper, television , radio and friends and only 10.1% of them got to know from their friends.

Of the total, 22.2% of the men agreed that measures against smoking were followed properly everywhere and 36.7% said measures were not followed properly. 41.1% did not know about whether the measures were followed properly. When asked about the pictorial health warning over cigarette/beedi package in reducing the habit, 31.2% of the men said that the warning helps in reducing the habit, 33.5% said it does not help to reduce the habit and 35.3% said they did not know about whether the pictorial warnings reduce the habit.

In the present study, 19.9% of the study subjects said that the implementation of the act to control tobacco products won't influence in reducing the habit of tobacco use, 19.2% of them said there will be reduction to some extent, 21.4% said they will quit smoking totally after the implementation of the act, 17.1% said they do not know about this and 4.6% said they will quit using tobacco before the implementation of the act.

In the present study, 46.77% initiated use of tobacco in the age of 16 years or older age whereas 36.91% started at the age of 10 to 15 years and 16.27% started using tobacco at the age of 9 years or younger.

The participants using tobacco when asked about the willingness to quit tobacco use, 47.3% of them said they have used in the past and they do not want to use tobacco anymore, 21% said they still use tobacco and want to quit, 8.7% said they do not want to stop using. In our study, 25.9% of the subjects said that they did not use tobacco in the past one year, 29.2% of the individuals said that they have tried to stop using tobacco, 21.8% of the subjects said that they never tried to quit tobacco use.

In the present study, 16.3% of the study subjects said that they have stopped using tobacco one to three months ago, 2.9% said they have stopped using 4 to 11 months ago, 10.6% stopped one year ago and 7.8% two years ago or longer. 39.3% of the individuals said they have not stopped using tobacco.

Among 285 subjects who had stopped using tobacco, 20% of the subjects stopped because of respiratory problems like cough, breathlessness, wheeze, 7.4% stopped because of decrease in work capacity, 3.9% to save money, 2.6% stopped because of weight loss and only 0.6% stopped because of reduced widening of mouth.

In our study, 16.1% of the study participants had received help or advice to stop using tobacco, 10.1% received help from friends, 6.3% received help from a family member, and 16.6% received help from all of them. 28.4% of the participants did not receive any help.

In the present study, the family members of 52.8% of the study subjects knew about the use of tobacco by the subjects. 24.1% of the family members did not know about the use of tobacco by the study participants. 53.7% of the study participants said that none of their family members were using tobacco, father was using tobacco among 22.3% of the participants, mother in 0.8%, brother in 16.7%, and son in 1.9%. 4.4% of the participants did not know about the status of tobacco use by their family members. 66.62% of the families had discussed regarding the harmful effects of using tobacco with the subjects. 33.38% of them said that their family members did not discuss about the ill effects of tobacco use.

In our study, when offered by their friends, 13.2% of the study participants said that they definitely won't use tobacco, 36.6% said probably they won't use tobacco. 27.7% of the participants said that they might probably use tobacco, 22.5% said they will definitely use tobacco when offered by their friends. 42.9% of the study participants said that definitely it would be difficult to quit if someone has started using tobacco. 22.3% said that probably it would be difficult to quit. 16.6% said that definitely it won't be difficult to quit and 18.2% said that probably quitting tobacco is difficult.

Out of 725 study participants, 13.1% members felt that tobacco use makes one look attractive, 46.5% said that tobacco use does not make one look attractive. 40.4% of the men said they do not know whether tobacco use makes them look attractive or not.

In the present study, 42.62% of the subjects had pathology in mouth and throat, 27.17 % of the subjects had respiratory problems, 5.1% of the subjects had cardiovascular problems and 6.07% of the subjects had abdominal problems.

In our study, 34.6% of the subjects had teeth stain, 2.2% of the subjects had signs and symptoms of leukoplakia, 2.90% of the subjects had clinical signs of oral submucous fibrosis, 10.62% of the subjects had tooth loss, 7.2% of the subjects had bleeding gums and 6.06% of the subjects had salivary gland enlargement.

In the present study, 4.7% of the subjects had hoarseness of voice and 17.80% of the subjects had upper respiratory tract infection.

When association between knowledge about users' habits in the family and quitting was seen, 39% of the families knew about the habits of the users and it was statistically significant.

In our study, discussion in the family about the ill effects of tobacco use has helped the tobacco users to quit. 74.2% of the quitters said that family discussion helped them in quitting tobacco use. The association was statistically significant ($p<0.05$).

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ANNEXURE I – ETHICAL CLEARANCE CERTIFICATE

K.L.E.SOCIETY'S
JAWAHARLAL NEHRU MEDICAL COLLEGE,
NEHRU NAGAR, BELGAUM-590010 (KARNATAKA-INDIA)
(Affiliated to KLE University, Belgaum)

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Fax No. +91 (0)831 – 2470759

Ref: MDC/DOME/ 895 **Date: 11/10/2012**

To,

PG student in Community Medicine,
J.N.Medical College,
BELGAUM.

Sub: Institutional Ethical Clearance for the study.

With reference to the above, we wish to inform you that your proposed research project titled **"PREVALENCE OF TOBACCO USE IN MEN ABOVE THE AGE OF 18 YEARS IN AN URBAN AREA OF BELGAUM"** is ethical and justifiable. The proposed research project has been cleared by the JNMC Institutional Ethics Committee on Human Subjects Research.

(Dr.Hema Dhumale)
Member Secretary
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belgaum.

(Dr.Ganga Pilli)
Chairman,
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belgaum.

ANNEXURE II - INFORMED CONSENT FORM

PREVALENCE OF TOBACCO USE IN MEN ABOVE THE AGE OF 18 YEARS IN AN URBAN AREA OF BELGAUM

INVESTIGATORS: DR. _____
DR._____

Introduction

You are being invited to participate in this study to find out the prevalence of tobacco use in men above the age of 18 years in Ramnagar, Belgaum. Participation in this study is completely voluntary.

Explanation of procedures

In this study you will have to answer a few questions about your general health information, socio-demographic details and about the use of tobacco. The entire procedure may take about 30 minutes. You will be clinically examined to see any illness related to tobacco use.

Possible benefits

The investigator does not promise or guarantee that you will receive direct benefit being in the study. It will benefit the whole community because by this study we will come to know the prevailing health problems related to the use of tobacco which in turn will surely help for the development of the strategies to control the use of tobacco.

Possible risks

There are no risks involved for participation in the study

Confidentiality

Your identity will not be revealed. All information collected will be collected and coded so that no one will know your identity.

Withdrawal

Participation in this study is voluntary. If you don't not to wish to participate in this study, you will not lose benefits to which you are entitled.

Costs of participation

The cost of the study will be borne by the researcher. There will be no additional cost to you for participating in this study.

Payment of participation

There will be no incentives to you for participating in this study.

Questions

If you have any questions about this study, you should contact DR. _____ and DR._____ at _____. If you have any questions about your rights as a study participant, you may contact Dr. _____ Chairman, JNMC Institutional Ethics Committee on human subjects research at _____.

Authorization to publish results

The Researchers may use the information gathered from this study for presentation in scientific journals. However your identity will not be disclosed in such presentation or publication.

Legal rights

By signing this consent form, you are not waiving any of your legal rights.

Consent statement

I volunteer and consent to participate in this study. I have read the consent or it has been read to me. The study has been fully explained to me and I had been given the opportunity to ask questions and they have been answered to my satisfaction and that I have received a copy of this signed consent form.

Name of the participant: _____ Signature/ left thumb impression

Name of the eyewitness:_____ Signature/ left thumb impression

Name of the interviewer: _____ Signature

Signature of the guide:

Date: | | | |

ANNEXURE III – PROFORMA

K.L.E. UNIVERSITY's

J.N.MEDICAL COLLEGE, BELGAUM

DEPARTMENT OF COMMUNITY MEDICINE

RESEARCH QUESTIONNAIRE

Investigator: Dr. _____

Guide: Dr. _____

"PREVALENCE OF TOBACCO USE IN MEN ABOVE THE AGE OF 18 YEARS IN AN URBAN AREA OF BELGAUM"

[**Note**: All the personal information provided during this study will be kept confidential. Only aggregated data will be published.]

Identification number: |___|___|___| Date of interview: : |___|___|___|

Place: _____ Area: _____

PART - I SOCIO DEMOGRAPHIC DATA

Name : _____

Age : _____years

Area of residence : _____

1. Religion:
   1. Hindu ☐
   2. Muslim ☐
   3. Christian ☐
   4. Others (specify. ☐

2. Education:
   1. Illiterate ☐
   2. Primary school ☐
   3. Middle school ☐
   4. High school ☐
   5. College ☐

3. Occupation:
   1. Unemployed/student ☐
   2. Unskilled ☐
   3. Semiskilled ☐
   4. Skilled ☐
   5. Clerk, Shop Owner, Farm Owner ☐
   6. Semi Professional/Professional ☐
   7. Retired / Old Age Dependent ☐

4. Marital status:
   1. Unmarried ☐
   2. Married ☐
   3. Widowed ☐
   4. Divorced / Separated ☐

5. Type of Family:
   1. Joint ☐
   2. Nuclear ☐
   3. Broken family ☐
   4. Problem family ☐

6. a. Monthly income of the family: ☐
   b. Total number of family members: ☐
   c. Monthly per capita income: ☐

7. Socio economic status: (Modified B. G. Prasad classification)
   1. Class I ☐
   2. Class II ☐
   3. Class III ☐
   4. Class IV ☐
   5. Class V ☐

PART II USE OF TOBACCO

8. Are you a current smoker?
   1. Yes
   2. No

9. Are you an ex- smoker?
   1. Yes
   2. No

10. During the past 30 days, on how many days did you smoke cigarettes/beedis or any other form of smoking?
   1. 1 or 2 days
   2. 3 to 5 days
   3. 6 to 9 days
   4. 10 to 19 days
   5. 20 to 29 days
   6. All 30 days

11. During the past 30 days, on the days you smoked, how many cigarettes/beedis or any other form of smoking did you usually smoke?
   1. Less than or equal to 1 cigarette/beedis per day
   2. 2 to 5 cigarettes/beedis per day
   3. 6 to 10 cigarettes/beedis per day
   4. 11 to 20 cigarettes/beedis per day
   5. More than 20 cigarettes/beedis per day

12. During the past 30 days (one month, how did you get your own cigarettes most often? (select only one response)
   1. I bought them in a store or a shop
   2. I gave someone else money to buy them for me
   3. I borrowed them from someone else
   4. I stole them
   5. An older person gave them to me
   6. I got them some other way

13. During the past 30 days, what type of cigarettes/beedis or any other form of smoking did you usually smoke?
   1. Filters
   2. Beedis
   3. Both
   4. Others (cigars etc.)

14. During the past 30 days, have you ever used any form of tobacco products other than cigarettes / beedis or any other form of smoking ?

1. I didn't use other form of tobacco products ☐
2. Chewing tobacco ☐
3. Snuff ☐
4. Pan masala ☐
5. Gutkha ☐
6. Others ☐

PART III: 1. KNOWLEDGE AND ATTITUDE TOWARDS CONTROL OF TOBACCO PRODUCTS

15. Do you know the act regarding tobacco?

1. Yes ☐
2. No ☐

16. From what source you came to know about it?

1. News Paper ☐
2. Television ☐
3. Radio ☐
4. Friends ☐
5. A varying combination of mass media and friends ☐
6. Don't know ☐

17. Are you in favour of the act to control tobacco products?

1. Yes ☐
2. No ☐

18. Whether smoking should be prohibited in public place or not?

1. Yes ☐
2. No ☐

19. Do you think there should be any age limit below which sale of tobacco products should not be permitted?

1. Yes ☐
2. No ☐

20. Do you think measures against smoking are followed properly everywhere?

1. Yes ☐
2. No ☐
3. Don't know ☐

21. Do you think pictorial health warning over cigarette/beedi package reduce the habit of smoking?

1. Yes ☐
2. No ☐
3. Don't know ☐

22. Overall do you think the act to control tobacco products will change your habit?
    1. Not at all
    2. Reduction to some extent
    3. Totally I quit smoking
    4. Don't know
    5. I quit before the implementation of the act

III- 2. QUITTING PATTERNS

23. How old were you when you first tried smoking or smokeless form of tobacco?
    1. 7 years old or younger
    2. 8 or 9 years old
    3. 10 or 11 years old
    4. 12 or 13 years old
    5. 14 or 15 years old
    6. 16 years old or older

24. Do you want to stop using smoking or smokeless form of tobacco now?
    1. I had used in the past but I do not use now anymore
    2. I use every day or occasionally and I would like to stop using
    3. I use every day or occasionally and I don't want to stop using

25. During the past year, have you ever tried to stop using tobacco?
    1. I did not use during the past year
    2. Yes
    3. No

26. How long ago did you stop using tobacco?
    1. I have not stopped using
    2. I have stopped using 1-3 months ago
    3. I have stopped using 4-11 months ago
    4. I have stopped using 1 year ago
    5. I have stopped using 2 years ago
    6. I have stopped using 3 years ago or longer

27. What was the main reason you decided to stop using tobacco? (select one response only)
    1. I have not stopped using
    2. Respiratory problems like cough, breathlessness, wheeze
    3. Reduced widening of mouth
    4. Weight loss
    5. Decreased working capacity
    6. To save money
    7. Because my family does not like it (family pressure)
    8. Because my friends don't like it
    9. Effect of preaching from local religious leaders

28. Do you think you would be able to stop using tobacco if you wanted to?
    1. I have already stopped using
    2. Yes
    3. No

29. Have you ever received help or advice to help you stop using tobacco? (select only one response.)
    1. Yes, from a program or professional
    2. Yes, from a friend
    3. Yes, from a family member
    4. Yes, from all the above
    5. No

30. Do your family members know that you smoke cigarettes/ chew tobacco?
    1. Yes
    2. No

31. Do any of your family members smoke/ chew tobacco?
    1. None
    2. Father
    3. Mother
    4. Brother
    5. Sister
    6. Wife
    7. Son
    8. Daughter
    9. I don’t know

32. If one of your best friends offered you a cigarette/ tobacco, would you use it?
    1. Definitely not
    2. Probably not
    3. Probably yes
    4. Definitely yes

33. Has anyone in your family discussed the harmful effects of using tobacco with you?
    1. Yes
    2. No

34. Do you think it would be difficult to quit once someone has started using tobacco?
    1. Definitely not
    2. Probably not
    3. Probably yes
    4. Definitely yes

40. Do you think smoking cigarettes/ chewing tobacco makes you look more or less attractive?
    1. Yes
    2. No
    3. Don't know

3. GENERAL PHYSICAL EXAMINATION

GENERAL APPEARANCE:

Mouth and Throat:

SYSTEMIC EXAMINATION:

RESPIRATORY SYSTEM:

CARDIOVASCULAR SYSTEM:

PER ABDOMEN:

CENTRAL NERVOUS SYSTEM:

COMMENTS: Morbidity- Yes/ No

If yes, specify

ANNEXURE IV – KEY TO MASTER CHART

PART - I SOCIO DEMOGRAPHIC DATA

A. Age : _____years

B. Religion:
1. Hindu
2. Muslim
3. Christian
4. Others (specify.

C. Education:
1. Illiterate
2. Primary school
3. Middle school
4. High school
5. College

D. Occupation:
1. Unemployed/student
2. Unskilled
3. Semiskilled
4. Skilled
5. Clerk, Shop Owner, Farm Owner
6. Semi Professional/Professional
7. Retired / Old Age Dependent

E. Marital status:
1. Unmarried
2. Married
3. Widowed
4. Divorced / Separated

F. Type of Family:
1. Joint
2. Nuclear
3. Broken family
4. Problem family

G. Socio economic status: (Modified B. G. Prasad classification.)
1. Class I
2. Class II
3. Class III
4. Class IV
5. Class V

H. Are you a current smoker?
1. Yes
2. No

I. Are you an ex- smoker?
1. Yes
2. No

J. During the past 30 days on how many days did you smoke cigarettes/beedis or any other form of smoking?

1. 1 or 2 days
2. 3 to 5 days
3. 6 to 9 days
4. 10 to 19 days
5. 20 to 29 days
6. All 30 days

K. During the past 30 days, on the days you smoked, how many cigarettes/beedis or any other form of smoking did you usually smoke?

1. Less than or equal to 1 cigarette/beedis per day
2. 2 to 5 cigarettes/beedis per day
3. 6 to 10 cigarettes/beedis per day
4. 11 to 20 cigarettes/beedis per day
5. More than 20 cigarettes/beedis per day

L. During the past 30 days (one month, how did you get your own cigarettes most often? (select only one response)

1. I bought them in a store or a shop
2. I gave someone else money to buy them for me
3. I borrowed them from someone else
4. I stole them
5. An older person gave them to me
6. I got them some other way

M. During the past 30 days , what type of cigarettes/beedis or any other form of smoking did you usually smoke?

1. Filters
2. Beedis
3. Both
4. Others (cigars etc.

N. During the past 30 days, have you ever used any form of tobacco products other than cigarettes / beedis or any other form of smoking?

1. I didn’t use other form of tobacco products
2. Chewing tobacco
3. Snuff
4. Pan masala
5. Gutkha
6. Others
0. Not applicable

O. Do you know the act regarding tobacco?

1. Yes
2. No

P. From what source you came to know about it?

1. News Paper
2. Television
3. Radio
4. Friends
5. A varying combination of mass media and friends
6. Don't know

Q. Are you in favour of the act to control tobacco products?

1. Yes
2. No

R. Whether smoking should be prohibited in public place or not?

1. Yes
2. No

S. Do you think there should be any age limit below which sale of tobacco products should not be permitted?

1. Yes
2. No

T. Do you think measures against smoking are followed properly everywhere?

1. Yes
2. No
3. Don't know

U. Do you think pictorial health warning over cigarette/beedi package reduce the habit of smoking?

1. Yes
2. No
3. Don't know

V. Overall do you think the act to control tobacco products will change your habit?

1. Not at all
2. Reduction to some extent
3. Totally I quit smoking
4. Don't know
5. I quit before the implementation of the act
0. Not applicable

W. How old were you when you first tried smoking or smokeless form of tobacco?

1. 7 years old or younger
2. 8 or 9 years old
3. 10 or 11 years old
4. 12 or 13 years old
5. 14 or 15 years old
6. 16 years old or older
0. Not applicable

X. Do you want to stop using smoking or smokeless form of tobacco now?

1. I had used in the past but I do not use now anymore
2. I use every day or occasionally and I would like to stop using
3. I use every day or occasionally and I don't want to stop using
0. Not applicable

Y. During the past year, have you ever tried to stop using tobacco?

1. I did not use during the past year
2. Yes
3. No
0. Not applicable

Z. How long ago did you stop using tobacco?

1. I have not stopped using
2. I have stopped using 1-3 months ago
3. I have stopped using 4-11 months ago
4. I have stopped using 1 year ago
5. I have stopped using 2 years ago
6. I have stopped using 3 years ago or longer
0. Not applicable

AA. What was the main reason you decided to stop using tobacco? (select one response only)

1. I have not stopped using
2. Respiratory problems like cough, breathlessness, wheeze
3. Reduced widening of mouth
4. Weight loss
5. Decreased working capacity
6. To save money
7. Because my family does not like it (family pressure)
8. Because my friends don’t like it
9. Effect of preaching from local religious leaders
0. Not applicable

AB. Do you think you would be able to stop using tobacco if you wanted to?

1. I have already stopped using
2. Yes
3. No

AC. Have you ever received help or advice to help you stop using tobacco? (select only one response.)

1. Yes, from a program or professional
2. Yes, from a friend
3. Yes, from a family member
4. Yes, from all the above
5. No

AD. Do your family members know that you smoke cigarettes/ chew tobacco?

1. Yes
2. No

AE. Do any of your family members smoke / chew tobacco?

1. None
2. Father
3. Mother
4. Brother
5. Sister
6. Wife
7. Son
8. Daughter
9. I don't know

AF. If one of your best friends offered you a cigarette/ tobacco, would you use it?

1. Definitely not
2. Probably not
3. Probably yes
4. Definitely yes

AG. Has anyone in your family discussed the harmful effects of using tobacco with you?

1. Yes
2. No

AH. Do you think it would be difficult to quit once someone has started using tobacco?

1. Definitely not
2. Probably not
3. Probably yes
4. Definitely yes

AI. Do you think smoking cigarettes/ chewing tobacco makes you look more or less attractive?

1. Yes
2. No
3. Don't know

AJ. Pathology in Mouth and Throat:

1. Present
2. Absent

AK. Tooth discolouration

1. Present
2. Absent

AL. Salivary gland enlargement

1. Present
2. Absent

AM. Leukoplakia
1. Present
2. Absent

AN. Tooth loss
1. Present
2. Absent

AO. Oral Submucous Fibrosis
1. Present
2. Absent

AP. Bleeding gums
1. Present
2. Absent

AQ. Pathology in respiratory system
1. Present
2. Absent

AR. Hoarseness of voice
1. Present
2. Absent

AS. Upper respiratory tract infection
1. Present
2. Absent

AT. Rhonchi
1. Present
2. Absent

AU. Crepts
1. Present
2. Absent

AV. Chest pain
1. Present
2. Absent

AW. Dyspnoea
1. Present
2. Absent

AX. Haemoptysis
1. Present
2. Absent

AY. Odynophagia
1. Present

2. Absent

BA. Pathology in Cardiovascular system

1. Present
2. Absent

BB. Pathology per abdomen

1. Present
2. Absent