

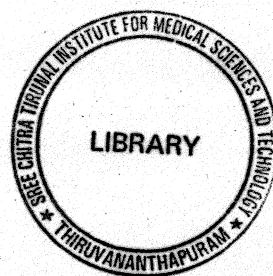
**Tobacco use among adolescents in Udham Singh Nagar
district, Uttaranchal, India, 2004**

A cross-sectional study

By

Dr. Pankaj Kumar Jain

(MAE-FETP Scholar 2003-2005)



NATIONAL INSTITUTE OF EPIDEMIOLOGY

(Indian Council of Medical Research)

Mayor V.R. Ramanathan Road, Chetput, Chennai 600 031

April 2005

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Dissertation project submitted in partial fulfillment of the requirements for the degree of Master
of Applied Epidemiology (M.A.E) of



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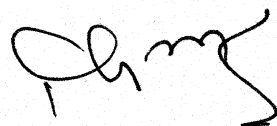
**National Institute of Epidemiology,
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April 2005

CERTIFICATION

This is to certify that this dissertation, entitled '**Tobacco use among adolescents in Udham Singh Nagar district, Uttaranchal, India, 2004**', Submitted by Dr. Pankaj Kumar Jain, in partial fulfillment of the requirements for the degree of Master of Applied Epidemiology, is the original work done by him and has not been submitted earlier, in part or whole, for any other (Publication or degree) purpose.

Date 01-05-2005



DIRECTOR

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Pankaj Kumar Jain
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Abstract

Background: The tobacco epidemic is still expanding in developing and transitional countries. About one-fifth of worldwide deaths attributed to tobacco occur in India, where it is illegal for minors under 18 years of age to purchase or use tobacco products. However, little information is available regarding the use of tobacco among adolescents in the context of this law.

Methods: We conducted a cross-sectional cluster survey in Gadarpur block, Udham Singh Nagar District, Uttaranchal, India to examine self-reported tobacco use. In each of the 30 clusters, we randomly selected 20 households where we interviewed directly adolescents between 13 and 15 years of age using semi-structured questionnaire between September and December 2004.

Results: We recruited 600 adolescents, among which 159 females (27%) in our study sample. Of these, 179 (29.8, 95% confidence interval: 26.2-33.7%) reported having ever used tobacco. Among those who reported ever using tobacco, 147 (82%) males. Adolescents used both tobacco smoking and smokeless tobacco products and the form of tobacco used was not statistically different in sexes and age groups. The prevalence of tobacco use was higher among the family members or fathers of the ever user adolescents as compared to non-users.

Conclusion: Tobacco use is common among adolescents in Uttaranchal, India, despite legal restrictions on sale and use of the products. Innovative strategies are urgently needed to prevent this concerning developing epidemic.

Keywords: Tobacco, Adolescent, Youth, and Behavior.

Abbreviations

AIDS	Acquired Immuno Deficiency Syndrome
CDC	Centers for Disease Control and Prevention
CDR	Central Development Region
COPD	Chronic Obstructive Pulmonary Disease
DALY	Disability Adjusted Life Years
ETS	Environmental Tobacco Smoke
FCTC	Framework Convention on Tobacco Control
GYTS	Global Youth Tobacco Survey
HIV	Human Immunodeficiency Virus
OR	Odds Ratio
PPS	Probability Proportional to size
SEAR	South East Asia Region
STD	Sexually Transmitted Disease
TFI	Tobacco Free Initiative
WHO	World Health Organization

Glossary

Operational definitions regarding tobacco use

Tobacco use	The use of cigarettes, <i>bidi</i> , hookah, cigar for smoking and surti, <i>khaini</i> , <i>gutkha</i> for chewing or snuffing / tooth paste any form even once.
Regular users	Those who consumes any tobacco products at least once a day
Occasional user	Those who consume any tobacco products at least once a week but not everyday.
Experimental user	Those who consumed any tobacco product at any time but not more than ten times.
Past user	Those who was previously regular or occasional user but presently do not consume any tobacco products at all.
Never user	Those who have never used any type of tobacco products till the day of the interview
Ever user	This term includes all regular users, occasional users, experimental users, past users of any type of tobacco products even once.
Adolescent	Persons of both sexes between 13 and 15 years of age.

Operational definitions for the type of tobacco products:

<i>Bidi</i>	Indigenous hand rolled tobacco
<i>Gutkha</i>	Mixture of tobacco and molasses
<i>Pan masala</i>	Commercial preparation of areca nut generally with powdered tobacco
<i>Surti</i>	Dried tobacco leaf for chewing
<i>Khaini</i>	Chewing tobacco mixed with other ingredients e.g. lime & added flavor

Operational definitions of the type of houses

Hut:	Construction with bamboo or wooden walls and a thatched roof.
Kaccha	Construction of house with wooden parts and aluminum corrugated plain sheet walls with tin roof.
Pucca	Construction with cement foundation, with stone or brick walls and roof made of concrete slab.
Semi-Pucca	Construction with cement/concrete posts as foundation with aluminum corrugated plain sheet or bamboo walls and tin roof.

1. Introduction

Non-communicable diseases cover a wide range of heterogeneous condition affecting different organs and systems of persons in different age and socioeconomic groups. Over the last two decades, morbidity and mortality due to cancer and cardiovascular diseases have been rising due to an increase exposure to use of tobacco, environmental risk factors and changes in life style pattern¹. Tobacco and alcohol are the most widely used addictive substances in the world and both have serious public health consequences. Tobacco kills more people each year around the world than AIDS, drug abuse, road traffic accidents, murders and suicide combined². It is estimated that there are 1.3 billion tobacco users in world today and this figure would increase to 1.7 billion by 2025. WHO estimates, five million deaths annually that are attributed to tobacco¹. This figure is expected to rise to 10 million in 2030, with seven million of these deaths occurring in developing countries, mainly China and India^{3, 4}.

The economic costs of tobacco use are equally devastating. In addition to the high public health costs of treating tobacco-caused diseases, tobacco kills people at the height of their productivity, depriving families of breadwinners and nations of a healthy workforce. Tobacco users are also less productive while they are alive due to increased sickness⁵. Tobacco has been estimated to cause an annual global net loss of US\$ 200 billion in health-care costs and lost productivity.

Today, about one-fifth of all worldwide deaths attributed to tobacco occur in India. More than 800, 000 people die and 12 million people become ill as a result of tobacco use each year in the country^{3, 4}. WHO estimated that the most vulnerable time for initiating tobacco use in India is during adolescence and early adulthood, between ages 15-25 years. The majority of users start using tobacco before age 18 while some even start as young as 10 years⁶. Noticeable changes in the lifestyles, habits and practices of the Indian population due to affluence, omnipresence of tobacco products and aggressive marketing targeting youth have lead to an increase of tobacco use. It is estimated that 5,500 adolescents start using tobacco every day in India, joining the 4 million young people under the age of 15 who already regularly use tobacco^{6,8}. This early age of initiation is a pointer that there is an urgent need to conduct an assessment and plan effective interventions for this vulnerable age

group. The Government of India realized the importance of this problem and initiated control measures to ban tobacco products to adolescents on 1st May 2004. As per the legislation, there is a complete ban on advertisement of all tobacco products in all media; a ban on smoking in public places and a ban on the sale of products to minors. In spite of this legislation, tobacco products are still available to adolescents. The Global Youth Tobacco Survey (GYTS) conducted in 2002 in Uttaranchal indicates that 28% of adolescents use any form of tobacco⁸. However, this assessment was school-based. It left out illiterates and school dropouts among which tobacco use might be different and might probably be higher. Hence, community based unbiased estimate of the prevalence of tobacco use among adolescent is urgently needed to guide tobacco control efforts in Uttaranchal.

We conducted a survey to estimate the prevalence of tobacco use among the adolescents of Gadarpur block of District Udham Singh Nagar, Uttaranchal state. Objectives of this survey were (1) to estimate the prevalence of tobacco use, (2) to estimate the frequency of knowledge, attitude and practices regarding tobacco use including smoking among the rural adolescents (13- 15 years) and (3) to suggest appropriate intervention methods to reduce and prevent tobacco use among the adolescents.

2. Review of Literature

2.1 Introduction

Tobacco and alcohol are the most widely used addictive substances in the world and both have serious public health consequences. Use of tobacco is common throughout the world. Tobacco use is legal in all countries yet it causes more deaths than all other psychoactive substances combined². Tobacco use is an unhealthy behavior that is very resistant to modification¹⁰. It kills more people each year around the world than AIDS, drug abuse, road traffic accidents, murders and suicide combined¹¹. No other consumer product is as dangerous or kills as many people as tobacco.

Tobacco is currently the second major cause of death in the world. It is responsible for about five million deaths every year. If current smoking patterns continue, that number could double by 2020. Half of the people who smoke today - that is about 650 million people - will eventually be killed by tobacco¹². Tobacco causes one death in every six seconds. If current trends continue there will be one death every three seconds by 2030¹³.

2.1.1 Background:

2.1.1.1. What is Tobacco:

Tobacco is an addictive substance that produces dependency. Tobacco contains nicotine and more than 23 known carcinogens. It also contains more than 4,000 chemicals¹⁶. The genus *Nicotiana*, a member of the plant family Solanaceae, is represented by about 100 species and sub-species widely distributed throughout the world. The species *N. tabacum* and *N. rustica* are the principal sources of tobacco¹³.

2.1.1.2 Primary intention to use tobacco:

The primary intention in using tobacco is to obtain the alkaloid nicotine and once the habit has been established. Nicotine fulfills both a pharmacological and psychological need (US Surgeon General, 1988; NIH, 1998).

2.1.1.3 Combined effects of tobacco smoking and other exposures:

The risks from tobacco smoking are also increased through interactions with certain chemical, physical and biological hazards found in the workplace and general environment. There is evidence for synergism in the production of adverse effects (cancer) between tobacco smoking and exposure to arsenic, asbestos, ethanol, silica and radiation (radon, atomic bomb, X-ray). Tobacco smoking affects the health risks of exposures in coal mining, pesticide handling, and in the rubber and petroleum industries. Coal miners who smoke are at greater risk of developing chronic bronchitis and obstructive airway disease. Tobacco smoking can increase the health risks of exposure to vegetable dusts that produce chronic respiratory conditions, such as byssinosis produced by cotton dust, and nasal cancer caused by wood dusts¹⁶.

2.1.1.4 Tobacco smoke

Tobacco smoke is an aerosol consisting of a particulate phase of liquid droplets dispersed in a gas/vapor phase. When a cigarette is smoked, many compounds are formed by pyrolysis of the tobacco. These either pass through the cigarette as mainstream smoke, some being condensed a short distance behind the burning cone, or they are emitted into the air from the burning end as side stream smoke. With each puff the smoke become progressively stronger because previously condensed material is added to the smoke and the length of cigarette available for further condensation is decreasing. The physicochemical nature of the smoke depends on the processing and burning of the tobacco, the porosity and treatment of the paper wrapper and on the type of filter tip. Mainstream smoke is generated in a comparatively low-oxygen atmosphere at a burning temperature of 850-950°C in the fire cone. Initially mainstream smoke contains nearly 4000 identified chemicals and an unknown number of unidentified chemicals. Cigarette smoke is a complex mixture of organic and inorganic constituents with particulate and vapor phases and highly reactive free radicals. It contains many compounds with irritant properties, which can affect all part of the lung⁷. Tobacco use has direct effects on health and is responsible for a variety of diseases. The acute responses to the inhaled irritant chemicals cause inflammation of the upper respiratory tract and Para nasal sinuses, sore throat and bronchial edema. Pulmonary edema may follow if irritants penetrate the lower respiratory tract. Acute irritation of the upper respiratory tract usually follows inhalation of highly soluble gases. Slightly less soluble gases cause upper

respiratory tract and bronchial irritation, while relatively insoluble gases penetrate deeply into the lung and can have delayed effects including pulmonary oedema⁸

2.1.1.5 Effects on the immune system

Tobacco smoking and exposure to environmental tobacco smoke increases susceptibility to pulmonary infections and may change all immune processes. Tobacco smoking affects humoral and cellular immunity in humans and experimental animals. It decreases serum immunoglobulin (IgA, IgG, IgM) but increases IgE and has a range of effects on B and T lymphocytes.

2.1.1.6 Cancer

Cigarette smoking is causally associated with cancer of the lung, larynx, pharynx, oesophagus, pancreas, kidney cavity, liver, uterine cervix and myeloid leukaemia

Reverse smoking, in which rolled tobacco leaves are smoked with the burning end inside the mouth, and has been linked to carcinoma of the hard palate

2.1.1.7 Chronic effect of tobacco use

The chronic obstructive lung diseases are chronic bronchitis, small airways diseases, toxic bronchiolitis obliterans, emphysema and fibrosis

2.1.1.8 Health risks from smokeless tobacco use

Oral cancers have been linked with oral tobacco use. The consequences of chewing tobacco can be reactional keratosis, irreversible gingival recession, periodontitis, oral dysplasia, leukoplakia, cancer, (Chakrabarti et al.1999; Guggenheimer, 1991). In India, chewing material containing tobacco is the primary cause of oral cancer⁹ (Jussawalla and Deshpande, 1971). Leukoplakia and oral cancer are common results of oral tobacco use, particularly in the Asian countries (IARC, 1985a). Simarak et al. (1977) reported a strong association between betel chewing and oral cancer in northern Thailand. Sankaranarayanan et al. (1989a, b, 1990) associated oral cancers in southern India with tobacco chewing Chakrabarti et. al. (1991) reported much higher levels of pre-malignant and malignant lesions of the oral cavity in tobacco chewers Nandakumar et al. (1990) found the relative risk to be elevated in both sexes, but appreciably higher in females From chemical analysis of Indian tobacco products, it was concluded that their use may lead to high exposures to carcinogenic tobacco nitrosamines (Nair et al., 1989).

2.2 Epidemiology of tobacco use

2.2.1 Global

Globally, most countries are already facing the double burden of communicable and non-communicable diseases. Almost half of the disease burden in high-mortality regions of the world is now attributable to non-communicable diseases.

2.2.1.1 Why is tobacco a public health priority?

Tobacco is the second major cause of death in the world. It is currently responsible for the death of one in ten adults worldwide (about five million deaths each year)²¹ If current smoking patterns continue, it will cause some 10 million deaths each year by 2020⁵. Half the people who smoke today (about 650 million people) will eventually be killed by tobacco. Tobacco is the fourth most common risk factor for disease worldwide. The economic costs of tobacco use are equally devastating. In addition to the high public health costs of treating tobacco-caused diseases, tobacco kills people at the height of their productivity, depriving families of breadwinners and nations of a healthy workforce. Tobacco users are also less productive while they are alive due to increased sickness²². Tobacco use remains the leading preventable cause of death in the world²⁰. It is a risk factor for cancer, stroke, myocardial infarction aortic aneurysm and peptic ulcer.¹ It causes about three million premature death a year (six percent of the world total). One out of five people on the planet smoke cigarettes, an estimated 800 million of these are in developing countries.²³ Globally 47% of men and 12% of women are smokers. While in developing countries 48% of men and 7% of women smoke. In developed countries 42% of men and 24% of women smoke.²³ Globally -tobacco consumption is increasing by 2% per year and it is estimated that 5.5 million people use smokeless tobacco daily²⁴.

2.2.2 Southeast Asia Region

2.2.2.1 Background

The SEA region comprises of the 11 countries – Bangladesh, Bhutan, Democratic People's Republic of Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka,

Thailand and Timor-Leste. There are inhabited by 1.536 billion people (in 2000) comprising about 25.35% of the world population. One half of them are developing countries; while the other half of countries fall into the category of the least developing countries²⁵.

2.2.2.2 Tobacco consumption in SEAR

In regard to tobacco consumption, SEAR has some unique problems. The people in the region are used to both smoke and smokeless tobacco consumption. Four countries of the region – India, Indonesia, Bangladesh and Thailand – are among the top 20 tobacco-producing countries in the world.³⁶

2.2.2.3 Types of tobacco products in this region

The main commercial tobacco products that are smoked are regular cigarettes, *kreteks* (indigenous cheroots containing tobacco, cloves and cocoa), *klobots*, *cheroots*, *bidis* and *cigars*. Of these, cigarettes are most commonly smoked in all countries. *Kreteks* and *klobots* are popular in Indonesia, and *bidis* in the Indian subcontinent. The “bidi” is a common smoking device. It consists of tobacco flakes, loosely packed and hand-rolled in a tendu or temburni leaf (*Diospyros melanoxylon*). *Cheroots* are common in Myanmar, while cigars are used in all countries but only by a select few. Other forms of smoking tobacco products such as *kakkad/chilim/sulfa* (smoking of tobacco in clay pipe), *Hookah (Hubble-bubble)*, and hand-rolled tobacco are also common in the region, particularly in India, Nepal, Bangladesh, Myanmar, Maldives, Sri Lanka, and Bhutan. A variety of smokeless tobacco products are consumed in South-East Asia. *Pan masala*, *gutkha* (industrially-manufactured chewing tobacco product) *khaini* (chewing of dry tobacco leaves and lime) and chewing tobacco with areca nuts are common in India, Nepal, Bangladesh, Sri Lanka, Maldives and Bhutan. They are consumed in Myanmar too, but not so extensively²⁵.

2.2.2.4 Tobacco revenue

Tobacco revenue, as a percentage of the government annual revenue, is substantial in some of these countries. It is as high as 10-12% of the total government revenue²⁵

2.2.2.5 Tobacco prevalence

Tobacco prevalence in the large countries of the region has increased in the past decade. In Bangladesh, the overall prevalence increased from 37% to 41%. In Indonesia, it increased from 28.6% in 1990 to 31.9% in 1998. In India, it increased from 19.5% in 1993-94, to 20.5% in 1998-99, and the latter is argued to be under-reported.²⁵ In Sri Lanka and Thailand, some decline in the prevalence of tobacco use has been noticed. Unfortunately, most increases in tobacco prevalence are accounted for by an increasing number of women tobacco consumers.

2.2.2.6 Tar and nicotine levels consumption

Most cigarettes manufactured in the region have tar levels ranging from 18-30 mg and in *bidis* about 40-50 mg. *Kreteks* are reported to contain 41-71 mg tar level. The nicotine level ranges between 0.9-3.2 mg.

2.2.2.7 Tobacco control measures in this region:

India has taken a big step to ban smoking in all public places since November 2001 through an order of the Supreme Court. In most countries, smoking is not allowed in public places. In Bangladesh, India, Maldives, Sri Lanka and Thailand, minors are not allowed to buy tobacco products. However, only one country of the region, Thailand, has a comprehensive tobacco control policy²⁵.

2.2.3 Indian scenario

In India non-communicable diseases cover a wide range of heterogeneous condition affecting different organs and systems in different age and socioeconomic groups. Over the last two decades morbidity and mortality due to cancer and cardiovascular diseases have been rising due to an increased exposure to environmental risk factors, use of tobacco and changes in life style pattern. Data from the 52nd round of National Sample Survey Organisation (NSSO) showed that tobacco intake (smoking and non-smoking) are higher in the poorest,⁹. Hence prevalence of tobacco related non-communicable diseases is likely to be high in this group.

In view of the chronic morbidity and high cost involved in the management of non-communicable diseases, attention needs to be focused on prevention, early detection and appropriate management. It is estimated that currently there are 2.5 million cases of cancer in the country and 700,000 new cases being detected every year. This should double over the next two decades. The most frequent cancers among Indian males are those of the mouth, oro-pharynx, esophagus, stomach and lower respiratory tract. In women cancer of the cervix, breast, mouth, oro-pharynx and esophagus are common. Tobacco-related cancer (especially cancer of oral cavity, lung and cancer cervix) form more than 50% of the overall cancer burden in the country. During the tenth five year plan, efforts should be made to improve preventive, promotive curative and rehabilitative service for non communicable diseases through the country at all levels of care so as to reduce morbidity and mortality. (Reference: Tenth five-year plan 2002-2007, Report of the Steering Committee on health). Several risk factors have been identified for different non-communicable disease. Tobacco use is a major risk factor among them. The prevalence of tobacco use varies place to place from 20.8% to 79.9% in males and 1% to 29.0% in females.

2.2.3.1 Tobacco use trend in India

In India where around seven percent of world tobacco is consumed (US DA, 1990), around 30% of tobacco is smoked as cigarettes, 50% as "bidis" 10% in other ways and 10% is used for chewing. It is estimated that 8-85% of tobacco is consumed for smoking either as bidies/cigarette. Almost 15% chew tobacco either with pan or lime. Almost 15% are addicted to both habit of chewing and smoking and 1-3% use tobacco either in the form of snuff or tooth paste. Males of age (15 and above) smoke (29%), chew (28%). In women rate of smoking rate (3%) and chewing pan masala 10% (NFHS IInd). Most common form of tobacco consumption is bidies. It is expected that with income rise in India, traditional uses of tobacco will diminish and cigarette smoking will increase. With urbanization, cigarette smoking is likely to become more fashionable, particularly in urban area.

2.2.4 Tobacco use in adolescents

2.2.3.1 Who is an adolescent?

One in every five people in the world is an adolescent. Out of 1.2 billion adolescents worldwide, about 85% live in developing countries and the remainders live in the industrialized world. Adolescent is a stage to convert childhood to adulthood. Adolescence is a period of physical, mental, psychological and social development.

2.2.3.2 Adolescent's health

Adolescents are generally thought to be healthy. By the second decade of life, they have survived the diseases of early childhood and the health problems associated with ageing are still many years away. Death seems so far removed as to be almost unthinkable.

2.2.3.3. Adolescent's health hazards

Yet many adolescents do die prematurely. Every year, an estimated 1.7 million young men and women between ages of 10 and 19 lose their lives – mostly through accidents, suicide, violence, pregnancy-related complications and other illnesses that are either preventable or treatable. Health of adolescent associated with behavior and developmental process because adolescents are prone to develop substance abuse, accidents, unprotected sex and violence. The majority of smokers begin using tobacco before they reach adulthood.

2.2.3.4 How to prevent adolescents

Today, the world is facing a great challenge: How to prevent almost 11 million deaths of infants and children and more than 1 million adolescents deaths every year. We have the knowledge and the technology to save the youngest generation from the effects of diseases, malnutrition and life-threatening conditions. We have the knowledge to help children and adolescents develop to their full potential. What is needed is to transfer this existing knowledge into practice.

2.2.3.5 Nicotine dependence in adolescents

Several factors increase the risk of youth smoking including the promotion of tobacco advertisement and easy access to tobacco products². Teenagers begin to smoke without realizing the addictive nature of nicotine. If tobacco use starts at a young age then the health hazards later in life are likely to be more serious²⁶. Nicotine dependence is common in many individuals. Therefore prevents tobacco use from

the adolescents. Tobacco use regularly occurs more or less frequently among certain group in the population suggesting that the behavior is neither random nor idiosyncratic²⁷. Teenagers are appropriate focus group when considering the initiation of tobacco use. Adolescents experiment with tobacco products to appear and feel mature. When asked about smoking young people say that the cigarette is ones best friend during happiness and sadness. Smoking is a relaxing and pleasurable, phenomenon. Smoking and tobacco use habits, of parents and other siblings are major risk factors for influencing the initiation of tobacco use by the adolescents.

2.2.3.6 Initiation of tobacco use in India

It is estimated that like other developing countries, the most susceptible time for initiating tobacco use in India is during adolescence and early adulthood between ages 15 to 24.8 years of age. The majority of users start using tobacco before age 18, while some even start as young as 10.² It is estimated that 5,500 adolescents start using tobacco every day in India, joining the 4 million young people under the age of 15 who already regularly use tobacco^{6, 9}. This early age of initiation is a pointer that there is an urgent need to conduct a needs assessment survey and plan effective interventions for this vulnerable age group. It has resulted in noticeable changes in the lifestyles (habits/practices) of Indian population due to affluence, prevailing tobacco products being easily accessible and youth being targeted by aggressive marketing.

2.2.3.7 Target of the tobacco industry,

Youth is the most vulnerable and easily reachable target of the tobacco industry,

2.2.5 Tobacco and poverty: Tobacco users are less productive while they are alive because of increased sickness. A 1994 report estimated that the use of tobacco resulted in an annual global net loss of U.S. \$200 thousand million, a third of this loss being in developing countries.²⁸ Poorer individuals tend to use tobacco products more than their wealthier counterparts²⁹. Similar patterns exist with respect to education and socioeconomic status. The contribution of tobacco to death and disease is well documented. Less attention is given to the ways in which tobacco

increases poverty.²⁹ The proportion of household expenditures used to purchase tobacco products is often high in developing countries. For example, if two-thirds of the money spent on cigarettes in Bangladesh were spent on food instead, it could save more than 10 million people from malnutrition.²⁸ New research in India found that tobacco use is associated with poor nutrition and child health outcomes²⁸

2.3 Conclusions

Tobacco use, particularly smoking, is the single most important public health hazard in the world today, and a major preventable cause of morbidity and mortality. In addition to the adverse health effects of active tobacco use, adverse health effects have also been demonstrated as a result of exposure to environmental tobacco smoke. The risks from tobacco smoke are demonstrably increased through interactions with certain chemical, physical and biological hazards found in the workplace and general environment¹⁶.

2.4. Prevention and Control

All possible measures taken to eliminate tobacco use. Smoking in public places discouraged strongly. In order to reduce the risks of exposure to environmental tobacco smoke, particularly for children because second-hand smoke is a real and significant threat to public health. Children are at particular risk: exposure to tobacco smoke in children can cause respiratory disease, middle ear disease, asthma attacks and sudden infant death syndrome. Effective measures must provide protection from exposure to tobacco smoke in indoor workplaces, public transport, indoor public places and, as appropriate, other public places. Smoking in domestic environments discouraged strongly. Such action will also avoid possible deleterious interactions between tobacco smoke and residential exposures to other hazards. Awareness building through active educational programmes on the health hazards of smoking undertaken in both developed and developing countries. These include enhanced communication about deleterious interactions between tobacco and other agents. Governments, industry, health and educational professionals, and the general public share this responsibility. Health professionals provide assistance to smokers to stop smoking. This may necessitate the allocation of additional resources for this purpose.

3. Methods

3.1 Study design and study population

We conducted cross sectional household survey in rural area of the Gadarpur block of the Udham Singh Nagar district during September- November 2004. Adolescents of both sexes, 13 to 15 years of ages constituted the study population.

3.2 Study setting

We conducted the study in the Udham Singh Nagar district of Uttaranchal State. The district has seven blocks, 168 Gram Panchayats (village-council) and 669 villages spread over in an area of 3055 square kilometers. The population size of the district was 1,234,548 according to the 2001 census. There are five community health centers and three block level primary health center (PHC) 25 additional primary health centers under the district health system.

3.3 Selection of study area

We selected one block purposively for the study because of operational feasibility criteria. The name of the Block is Gadarpur and the name of the Block level Primary Health Center area is also Gadarpur. This block is located 20 kilometers away from the headquarter of the Udham Singh Nagar district. The population size of the block is 134,292 (2001 census). Under the block level PHC, there are four additional PHC's. Under each additional PHCs, there are four health sub centers.

3.4 Sample size

The required sample size³⁰ was based on the assumption that prevalence of tobacco users among adolescents 13-15 years in rural area of Gadarpur block of Udham Singh Nagar district was 25%³¹, allowing 20% relative precision, considering a 5% absolute precision. The alpha error was sets at 5%. The sample size was calculated as follows:

$$\text{Sample size} = (1.96^2 \times \text{prevalence \% (100-prevalence \%))} / \text{precision}^2$$

$$\text{Sample size} = (1.96^2 \times 25 \times 75) / 25 = 288$$

Assuming design effect of 2, the sample size was calculated as 576 (approximately 600)

3.5 Sampling strategy

We utilized 30-cluster survey method. WHO recommended³² method for rapid estimation of immunization coverage in children. It uses a linear systematic sampling technique proportional to the population size.

We followed the following steps:

1. Identification of clusters
2. Random selection of households in each cluster
3. Collection of data

Identification of Clusters:

We listed all the revenue villages of the Gadarpur block of the district Udhham Singh Nagar along with their population size. We calculated the cumulative population of all the villages. We calculated the sampling interval by dividing the total cumulative population by 30 and rounded it off to the nearest whole number. We choose a random number between zero and the sampling interval. We identified the village where this random number stood as the first cluster²⁸. We added the sampling interval to the random number to obtain the second cluster and so on until 30 clusters were identified.

Random selection of households in a cluster

Keeping in mind that all the households in the cluster should have an equal opportunity of being selected. We made a list of all households of the village and selected 20 households randomly from the list.

3.6 Data collection

Administering interview schedule:

We designed semi-structured questionnaire and administered it during face-to-face interview to assess the socio-economic status, knowledge and practices about tobacco use. We translated the questionnaire to Hindi, the local language for the understanding of the adolescents (The questionnaire was first translated to local language spoken in this area and then back translated from the local language to English by an expert). We collected data on caste, religion, parental education, type of house, place of living, highest occupation in the family and dietary habits. Information was also collected to assess the knowledge about harmful effect of tobacco and passive smoking among these adolescents. We spent on average 25-30 minutes with one study subject.

3.6 Study team:

The study team consisted of the MAE-FETP Scholar (the principal investigator), one male health supervisor, one female health worker and two volunteers.

3.7 Training:

We gave one week training to the two health workers regarding the purpose of the study, selection of clusters and for selection of households. We explained items in the questionnaires and pilot tested the questionnaires in the field. We finalized the questionnaires after the training.

3.8 Ethical consideration and confidentiality

We explained the purpose of this study to every respondent and the choice to participate in the study was left to the decision of the respondents / guardians. We explained the respondent and /or their guardians the beneficial effects of not consuming the tobacco after the interview. We maintained strict confidentiality of information elicited from the respondents. We utilized all information collected from the respondent for research purpose and did not disclose any information to anyone outside the research team.

We checked all coded data for consistency and completeness using Epi-info (October 5 2004, Version 3.3). We calculated the frequency of selected characteristics using the total sample size as denominator. We calculated prevalence ratio and 95% confidence interval (CI) significance level was taken at $p \leq 0.05$. We used a χ^2 test to compare the prevalence among different groups.

4. Results

Among 30 selected villages, one village refused to participate in the survey and was replaced with another adjacent one. The response rate of adolescents was 600 out of 606 (99%)

4.1 General characteristics of the study population

The total number of the respondents in our study was 600 with equal percentage of each age group (Table 1). All the respondents belong to the rural area of Gadarpur block of Udham Singh Nager district. Most of them were Hindu (n=403, 77.2%), 211 (35.2%) were of general caste and 180 (30%) belonged to schedule caste. Two third of them (n=436, 72.7%) had their own house and 246 (41%) had a pucca house. Most have a cycle in their house. Nearly half of them (n=253, 42.2%) were Hindi speaker and 153 (25.5%) were Begali speaker. Half of them (n=328, 54.7%) were occasional non-vegetarian. More than half of the respondents (n=386, 64.3%) belonged to a nuclear family. More than two thirds (n= 504, 84%) were students. Many fathers and mothers (n=164, 27.6% and n=286, 47.7% respectively) were illiterate. Farming (n=219, 36%) and house making (n=342, 57%) were the most common occupation of fathers and mothers respectively.

4.2 Prevalence of ever tobacco use

Nearly one-third (n=179, 29.8%) of the 600 adolescents had ever used any tobacco products (Table 2). The prevalence of use of tobacco products was significantly higher among boys (147/441, 33.3%) as compared to girls (32/159, 20.1%) ($\chi^2=9.12$, $p=0.002$). The prevalence was not different in three age groups ($\chi^2=1.51$, 0.45).

4.3. Form of tobacco used by ever users

Among the adolescents who ever used tobacco (n=179), 27.9% were smoking tobacco, 26.8% used smokeless tobacco and 45.3% used both types of tobacco. The form of tobacco used by ever users was not statistically different in sexes ($\chi^2=4.13$, 0.13) and age groups ($\chi^2=2.83$, 0.59) (Table 3).

4.4 Tobacco products used

The different products used by the tobacco smokers were cigarette, bidi, cigar and other unspecified form of tobacco. Among the different products available to tobacco chewers, gutkha (n=104, 58.1%) was the most popular followed by surti (n=82, 45.8%), khaini (n=57, 31.8%), tobacco with betal leaves (n= 42, 23.5%), tobacco with betal nut (n=36 20.1%), plain tobacco (n=29, 16.2%) (Fig. 1). In addition, 28 (15.6%) respondents reported using all brands of smokeless tobacco products.

4.5 Access to tobacco products

About one third (n= 50, 27.9%) of the respondents reported that they had no difficulty in procuring tobacco products from stores, shops or venders though they were below the legal age of tobacco use in the state. Sixty-three respondents (35.2%) reported difficulties in obtaining the tobacco products on account of their age.

4.5 Prevalence of tobacco use among fathers and family members of adolescents

We divided the study subjects into tobacco ever users (n=179) and tobacco never-users (n=421). 178 fathers of the tobacco ever-users were still alive whereas fathers of the four tobacco never-users were dead. Fathers of thirty (17%) ever users did not use any type of tobacco products whereas fathers of 148 ever users smoked (n=123, n=69%) or used smokeless tobacco (n=110, 62%). On the other hand, fathers of 45.3% (n=189) of the never user adolescents did not use any type of tobacco products. The proportion of smokers and tobacco chewers among the fathers of never users was 44% (n=185) and 28% (n=118) respectively. The prevalence of tobacco use among the fathers of ever user adolescents was 2.9 times higher than never users (Table 4). Of the 179 tobacco ever user adolescents, 133 (74.3%) reported that some their family members were tobacco users whereas 46 (25.7%) reported that their family members did not use any tobacco products. In contrast, of the 421 tobacco never-user adolescents, 279, (66.3%) reported that their family members did never use any form of tobacco products (Table 4). The prevalence of tobacco use among the family members of ever user adolescents was 3.4 times higher than never users.

4.6 Age of initiation for tobacco use

The median age of initiation of tobacco chewing was 12 years (range: 7-14 years) whereas the median age for smoking initiation was 11 years (range: 7-14 years). For both forms of tobacco use, the age at initiation was earlier in girls (9 yrs for tobacco chewing and 10 years for smoking) than in boys (12 yrs for tobacco chewing and 11 years for smoking)

4.7 Place of tobacco use:

Places of tobacco use among the adolescents are given in Fig 2 and 3. Majority of the tobacco users used the tobacco outside their homes without the knowledge of their parents and family members.

4.8 Attitudes and behaviors about tobacco use:

Attitudes and behaviours of about tobacco use among tobacco users and non-users are given in (Table 5). 116 (64.8%) tobacco users reported that friend forced them for use to tobacco. 133 users (75%) reported that they would use any tobacco products if it were given by their friends. 51 (28.5%) tobacco ever users reported the harmful effect of tobacco were discussed in their homes. Nearly half of the tobacco users and non-users thought that boys who used tobacco had more friends and that they were more comfortable at parties. More than half of the tobacco users and non-users reported that smoking girls looked less attractive and that women who smoked or chewed tobacco lacked confidence. On the other hand, nearly one fourth of tobacco users and non-users felt that women who smoked or chewed tobacco appeared successful, intelligent or sophisticated.

79 (44.1%) tobacco users felt that tobacco helped relieving toothache or early morning bowel motion. This perception was less common among non-tobacco users 123 (29.2%). More than 90% of tobacco users and non-users knew the harmful effects of smoking but only 79.3% tobacco users knew the harmful effect of tobacco chewing. More than two third tobacco users and non-users thought that passive smoke was harmful. Both non-users (79.8%) and users (64.2%) were in favor of banning smoking in public places. Most tobacco users (n=96, 53.6%) and tobacco non-users (n=170, 40.4%) reported seeing a lot of actors smoking on television or in movies. Tobacco-users (n=90, 50.3%) and non-users (n=164, 39%) also reported seeing a lot of tobacco products advertisements in fairs. However, few of them had been exposed to anti-smoking messages.

5. Discussion

The findings of the present study showed that tobacco use is common among the adolescents of rural Uttaranchal. The prevalence of tobacco use was higher among boys. The adolescent used both tobacco smoking and smokeless tobacco products and the form of tobacco used was not statistically different in sexes and age groups. Different products used by the tobacco smokers were cigarette, bidi, cigar whereas the products available for tobacco chewers were, surti, khaini, plain tobacco, tobacco with betal leaves and nuts. The tobacco users did not have any difficulty in procuring tobacco products from stores, shops or venders though they were below the legal age of tobacco use in the state. The prevalence of tobacco use was higher among the family members or fathers of the ever user adolescents as compared to non-users.

As per the NFHS-II survey, the proportion of adolescent males smoking and chewing tobacco was 29% and 28% respectively. The corresponding rates in females were 3% and 10% respectively. The prevalence of tobacco use and different forms of tobacco used obtained from rural Uttaranchal in the present survey was comparable with the all India figures.

In many of the developing countries including India, the initiation of tobacco use in younger age group is a growing concern. The most susceptible age at initiating tobacco use, as observed in various studies in India, was during adolescence and early adulthood between ages 15 to 24.8 years of age and majority of users started using tobacco before age 18, while some even start as young as 10². The age at initiation of tobacco use among the adolescents in rural Uttaranchal was earlier than the reported age in other parts of India.

The main reasons for tobacco use in adolescents of rural Uttaranchal were experimental use, feeling of maturity, pressure from peers, promotion of tobacco advertisement and easy access to tobacco products. Tobacco use among parents and others family members was also found to be an important factor for tobacco use among the adolescents.

This study indicated that the restriction on sale of tobacco to minors in rural area is not sufficiently enforced. The Government of India realized the importance of this problem and initiated control measures to ban tobacco products to adolescents on 1st May 2004. The act deals with a number of measures including a complete ban on advertisement of all tobacco products in all media; a ban on smoking in public places and a ban on sale of tobacco products to minors. This law is also applicable to Uttaranchal state. In spite of this legislation tobacco products were easily available to adolescents suggesting that the ban is not implemented properly.

6. Conclusion

This cross-sectional community based survey pointed to key feature of tobacco use among adolescents in rural Uttaranchal. About one third (Three out of ten) rural adolescents had ever-used tobacco and this use had started early. The majority of them were experimental users. A substantial proportion of rural adolescents were being exposed to the tobacco use behavior of parents, family members and friends, creating an environment favourable to tobacco use in future.

7. Recommendation

Bases on the findings of the present study in rural Uttaranchal, we recommend following measures to reduce the tobacco use among the adolescents:

1. The legislation banning tobacco sale to minors, and ban on smoking in public places need to strictly enforced.
2. Health education programmes are needed to increase awareness about the adverse effects caused by tobacco among the adolescents.
3. Parental counseling is necessary to inform them about the influence of their tobacco use in their children.

8. Tables and figures

Table1: General characteristics of study population of rural area of Gadarpur block, Udham singh nagar district, Uttaranchal during September-November2004.

Characteristics	Frequency (n=600)	Proportions (%)
Age		
13 years	190	32
14 years	194	32
15 years	216	36
Sex		
Boys	441	73
Girls	159	26
Caste		
General	211	35
Backward	117	19
Schedule cast	180	30
Schedule tribe	92	15
Education		
Illiterate	24	4
Primary education	52	9
Middle education	20	3
Student (studying)	504	84

Table 2: Prevalence of tobacco use according to age and sex among study population of rural area of Gadarpur block, Udham singh nagar district, Uttaranchal during September-November- 2004.

Characteristics	N	Persons smoking tobacco	Persons using smokeless tobacco	Persons smoking tobacco and using smokeless tobacco	Total tobacco users
Age					
13 years	162	10 (6.2%)	14 (8.6)	22 (13.6)	46 (28.4)
14 years	167	14 (8.4)	14 (8.4)	28 (16.8)	56 (33.5)
15 years	271	26 (9.6)	20 (7.4)	31 (11.4)	77 (28.4)
Sex					
Male	441	44 (10.0)	35 (7.9)	68 (15.4)	147 (33.3)
Female	159	6 (3.8)	13 (8.2)	13 (8.2)	32 (20.1)
Total	600	50 (8.3)	48 (8.0)	81 (13.5)	179 (29.8)

Table 3: Use of different forms of tobacco among ever-users, according to age and sex, among in rural area of Gadarpur block, Udham singh nagar district, Uttaranchal during September-November- 2004.

		Smoking tobacco			Smokeless tobacco			Smoking tobacco and using smokeless tobacco		
Characteristics		#	Total	%	#	Total	%	#	Total	%
Age	13 years	10	46	21.7	14	46	30.4	22	46	47.8
	14 years	14	56	25.0	14	56	25.0	28	56	50.0
	15 years	26	77	33.8	20	77	26.0	31	77	40.3
Sex	Male	44	147	29.9	35	147	23.8	68	147	46.3
	Female	6	32	18.8	13	32	40.6	13	32	40.6
Total		50	179	27.9	48	179	26.8	81	179	45.3

Table 4: Tobacco use in fathers and family members of the ever and never tobacco user adolescents in a rural area of Gadarpur block, Udham singh nagar district, Uttaranchal during September-November- 2004.

		Adolescents				Prevalence ratio	95% CI
		Ever users		Never users			
		(n=179)		(n=421)			
		# ^a	%	# ^a	%		
Father	Ever users	148	83.1	228	54.7	2.87	2.01-4.10
	Never users	30	16.9	189	45.3		
Family member	Ever users	133	74.3	142	33.7	3.42	2.55-4.59
	Never users	46	25.7	279	66.3		

(^aOne father of ever- users and four fathers of never users adolescents were dead)

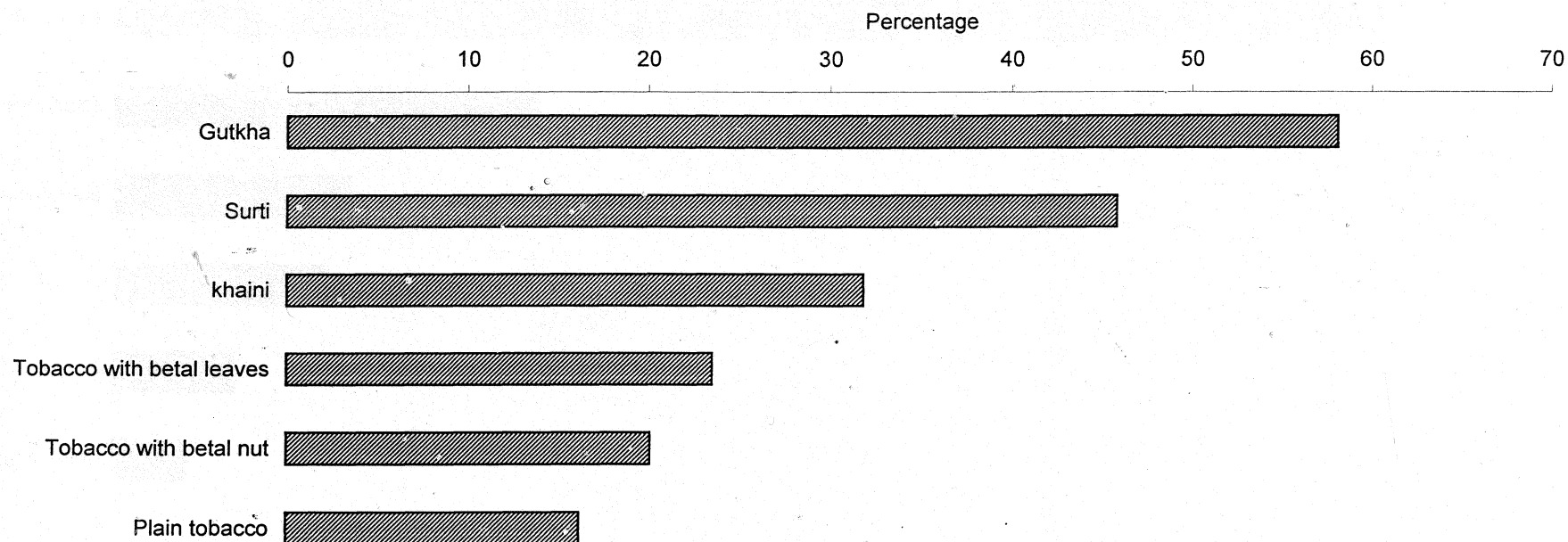
Table 5. Attitudes, behaviors and knowledge about tobacco use among the adolescents in rural area of Gadarpur block, Udham singh nagar district, Uttaranchal during September-November2004.

Attitudes and behaviors	Tobacco –users (n=179)		Tobacco non- users (n=421)	
	#	%	#	%
Friends forced for using tobacco products	116	64.8	104	24.7
Would use any tobacco products if offered best friends	133	74.3	20	4.8
Family discussed the harmful effects of smoking or tobacco products	51	28.5	291	69.1
Think to use of tobacco products in next 12 months	106	59.2	24	5.7
Boys who use tobacco products have more friends	92	51.4	203	48.2
Girls who use tobacco products have more friends	20	11.2	66	15.7
Smoking or chewing tobacco help feel more comfortable at celebrations	108	60.3	232	55.1
Boys look more attractive who smoke or chewing any tobacco products	84	46.9	155	36.8
Girls look more attractive who smoke or chewing any tobacco products	33	18.4	66	15.7
Girls look less attractive that smoke or chewing any tobacco products.	92	51.4	261	62
Smoking or tobacco help in morning motion or relief in toothache.	79	44.1	123	29.2

Table 5. (Continue) Attitudes, behaviors and knowledge about tobacco use among the adolescents in rural area of Gadarpur block, Udham singh nagar district, Uttaranchal during September-November 2004.

Attitudes and behaviors	Tobacco –users (n=179)		Tobacco non- users (n=421)	
	#	%	#	%
Men who smoke or chew tobacco are lacks confidence/ stupid / loser	73	40.8	267	63.4
Men who smoke or chew tobacco are successful / Intelligent / macho	106	59.2	151	36.6
Women who smoke or chew tobacco are lacks confidence/ stupid / loser	124	69.3	335	79.6
Women who smoke or chew tobacco are successful / Intelligent / sophisticated	55	30.7	86	20.4
Smoking is harmful to health	166	92.7	401	95.2
Tobacco chewing or use any tobacco products are harmful to health	142	79.3	385	91.4
Smoke from other people's cigarettes is harmful	135	75.4	358	85
Favor of the banning smoking in public places	115	64.2	336	79.8
See a lot of actors smoking in videos, TV, or movies	96	53.6	170	40.4
See a lot of tobacco products advertisements in magazines	26	14.5	51	12.1
See a lot of tobacco products advertisements in fairs	90	50.3	164	39.0

Figure 1: Frequency of different type of smokeless tobacco products in ever-users of rural area of Gadarpur block, Udham singh nagar district, Uttaranchal during September-November2004.

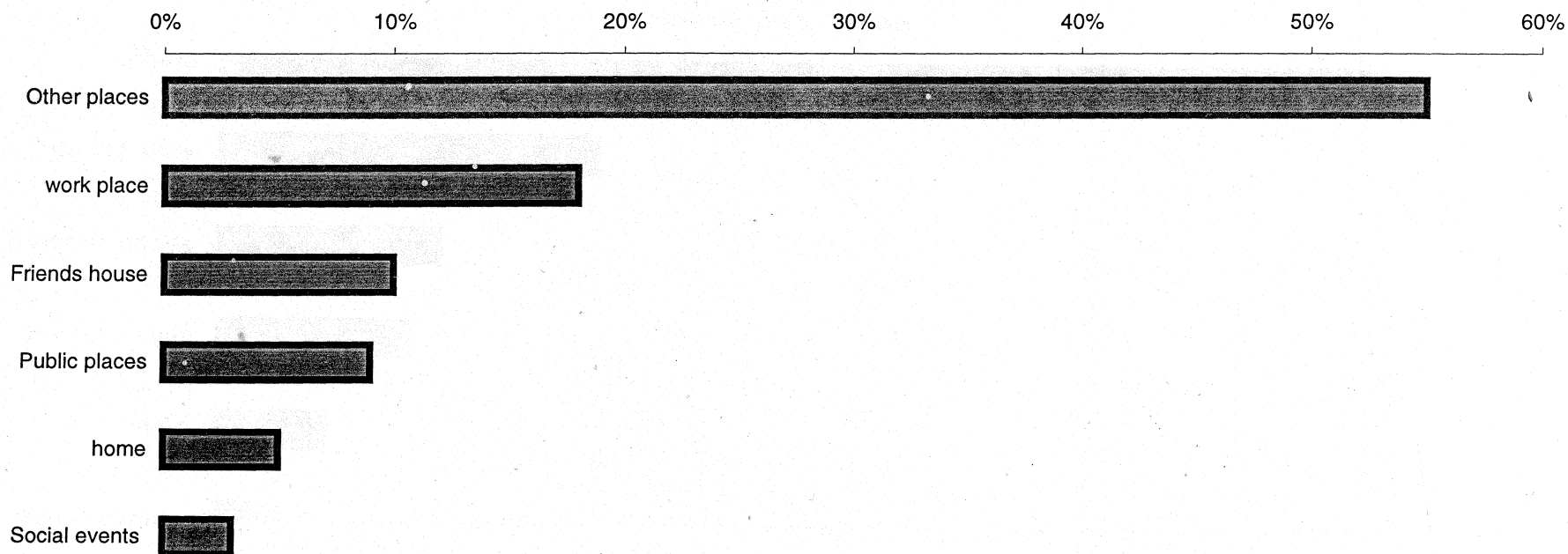


Gutkha Mixture of tobacco and molasses

Surti Dried tobacco leaf for chewing

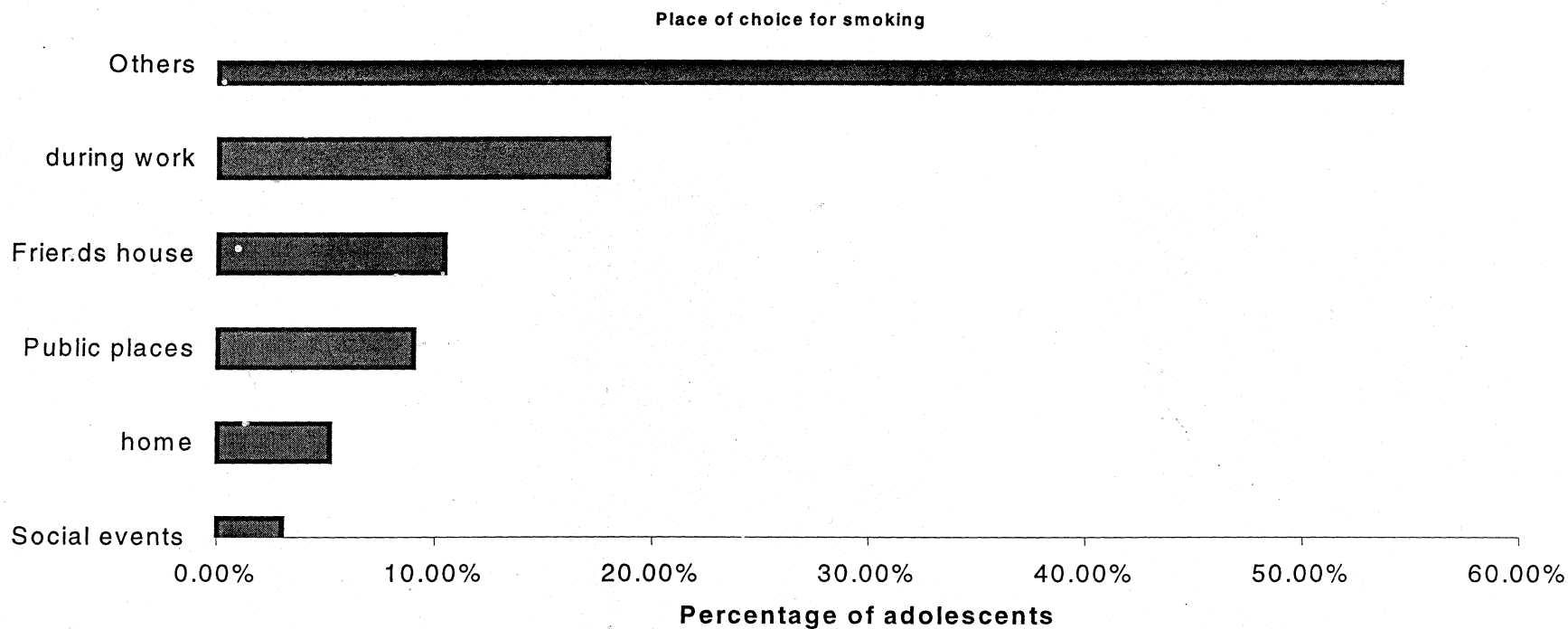
Khaini Chewing tobacco mixed with other ingredients e.g. lime & added flavour

Figure 2: Place of choice to chew tobacco products in rural area of Gadarpur block Udham singh nagar district, Uttarakhand during September-November 2004.



Others include places, outside home without the knowledge of parents, family members and relatives

Figure 3: Place of choice for smoking in rural area of Gadarpur block, Udham singh nagar district, Uttaranchal during September-November2004.



Others include places outside home without the knowledge of parents, family members and relatives

Figure 4: Age of initiation to chew Tobacco in rural area of Gadarpur block Udham singh nagar district, Uttaranchal during September- November 2004

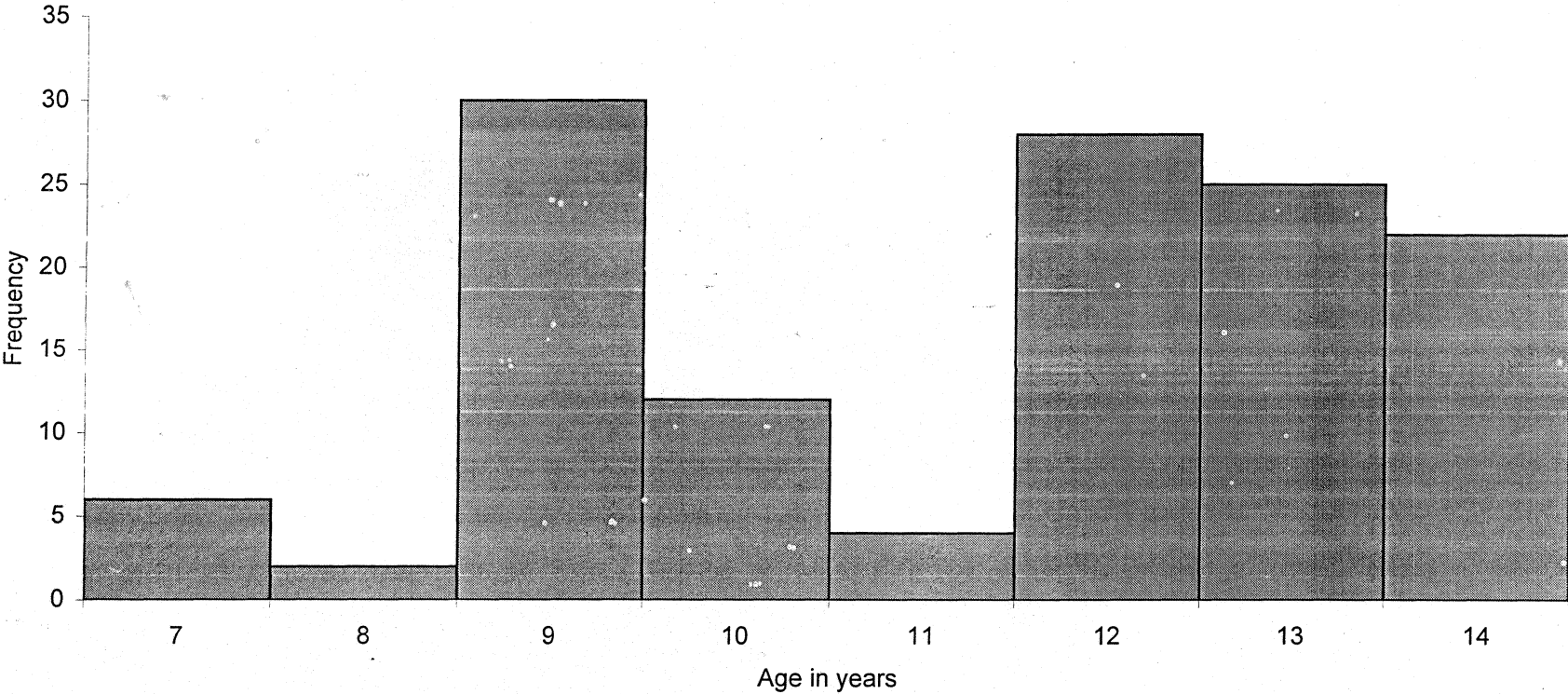
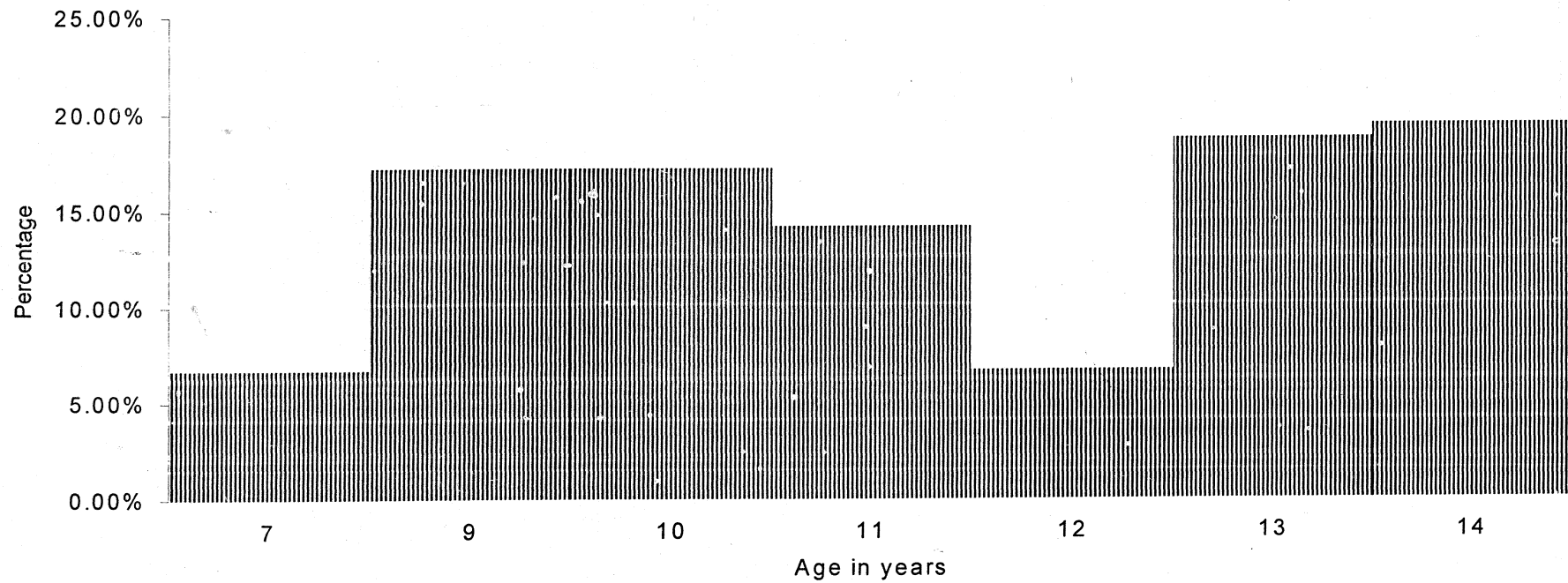


Figure 5: Age of initiation of smoking in rural area of Gadarpur block Udham singh nagar district, Uttaranchal during September- November2004.



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Tobacco Use Among 13 To 15 Years Individuals In Gadarpur Block, Udham Singh Nagar District Uttaranchal, India

Section A

Background Information

1. I.D. No.

2. Age in Years

3. Gender 1. Male 2. Female

4. Religion: (1) Hindu (2) Muslim (3) Christian (4) Sikh (5) Others

5. Caste: General/Backward/Schedule Caste/Schedule Tribe/Others

6. Type of House type: Semi Pucca/pucca/hut

7. House: Own/rental/Neither own nor rental only occupies on government land

8. Do you have in your home?

Cycle/Scooter / motor cycle/Car / zeep /tractor/Nothing

9. What is yours mother tongue?

1. Hindi/ 2. Urdu/ 3. Punjabi/ 4. Bengali/ 5. Koumauni/ 6. Nepali/ 7. Bhojpuri/
8. Others

10. Which state / country your fore father had come from?

1. U.P./ 2. Punjab/ 3. Bangla desh /4. Nepal /5. Pakistan /6. Others

11. Are you?

1. Vegetarian 2. Non vegetarian 3. Occasional non vegetarian 4. Others

12. Do you live in Joint Family/nuclear Family/Alone/With Guardian

13. What is your education?

Illiterate/primary education/middle education/Student (studying)

14. What is your father's education?

Illiterate/ Primary education/Middle education /Secondary education/Higher education

15. What is your mother's education?

Illiterate/ Primary education / Middle education / Secondary education /
Higher education

16. What is your occupation?

Student/Farmer/Shop Keeper/Laborer / Service/ Others (specify)

17. What is your father's occupation?

Farmer/ Shop Keeper/ Laborer / Service/ Others (specify)

18. What is your mother occupation?

House wife only/Farmer/Shop Keeper/ Laborer /Service/ Others (specify)

Section B

Questions ask about your use of pan masala

19. Have you ever used pan masala?

For "Yes' write 1

For "No" write 2

If no go to section C

20. If you chew pan masala age at starting (in years)

Section C

Questions ask about your use of tobacco

21. Have you ever used any form of Tobacco like cigarette, khaini, surti, paan masala, guthkha, tooth paste snuff etc?

For "Yes' write 1

For "No" write 2

If no go to section F

22. If yes which form of tobacco you consume?

Smoking

Smokeless(with betel nut, pan(betel leaves), with lime, with toothpaste etc)

Both

23. In which form you chew tobacco For "Yes" write Y

For "No" write N

- | | |
|---|-----|
| 1. Plain tobacco. | Y/N |
| 2. Mix with any pan masala (guthkha) | Y/N |
| 3. Mix with lime. (Surti) | Y/N |
| 4. Mix with lime, and flavors (khaini) | Y/N |
| 5. Mix with betel nut. | Y/N |
| 6. Mix with betel leaves. | Y/N |
| 7. All form use | Y/N |

24. How old were you when you chew tobacco / snuff for the first time

25. Where do you usually chew tobacco products? (SELECT ONLY ONE RESPONSE)

1. At home
2. At school
3. At work
- 4 At friends' houses
- 5, At social events
6. In public spaces (e.g. parks, shopping centres, street corners)
7. other

26. During the past 30 days (one month), did anyone ever refuse to sell you cigarettes or any tobacco products because of your age?

1. I did not try to buy cigarettes or any tobacco products during the past 30 days (one month)
2. Yes, someone refused to sell me cigarettes or any tobacco products because of my age.
3. No, my age did not keep me from buying cigarettes or any tobacco products.

Section D

Questions ask about your use of smoking.

27. Have you ever tried or experimented with cigarette smoking, even one or two puffs?

- 1. Yes
- 2.. No

(If no go to section F)

28. How old were you when you first tried a cigarette?

29. Which form of smoking you use?

Cigarette/Bidi/Both/Hucca/All/Others (specify)

30. Where do you usually smoke? (SELECT ONLY ONE RESPONSE)

- 1. At home
- 2. At school
- 3. At work
- 4 At friends' houses
- 5, At social events
- 6. In public spaces (e.g. parks, shopping centres, street corners)
- 7. other

Section E

Questions ask about your attitudes toward stopping smoking

31. Do you want to stop smoking now?

- 1. Yes
- 2. No

32. During the past year, have you ever tried to stop smoking cigarettes?

1. I did not smoke during the past year/2. Yes/ 3. No.

33. How long ago did you stop smoking?

34. What was the main reason you decided to stop smoking? (SELECT ONE ONLY)

Section F

Questions ask about your & yours relative habits and attitudes toward smoking & other tobacco products.

35. How frequently do you consume tobacco products by smoking / chewing / snuff/ Toothpaste/ Paan/ or pan masala?

1.Cigarettes 1. Regular use 2.Occasional use 3. Past use 4. Experimental use 5.Never use

2, Bidis 1. Regular use 2 .Occasional use 3 . Past use 4 . Experimental use 5.Never use

3. Surti 1 Regular use 2 Occasional use 3 Past use 4 Experimental use 5.Never use

4. khaini 1 Regular use 2 Occasional use 3 Past use 4 Experimental use 5.Never use

5. Gutkha 1 Regular use 2 Occasional use 3 Past use 4 Experimental use 5.Never use

6. Snuff 1 Regular use 2 Occasional use 3 Past use 4 Experimental use 5.Never use

7.Pan 1 Regular use 2 Occasional use 3 Past use 4 Experimental use 5.Never use

(With tobacco)

8. Tooth paste 1 Regular use 2 Occasional use 3 Past use 4 Experimental ☐ use 5.Never use

(With tobacco)

9. Other 1 Regular use 2 Occasional use 3 Past use 4 Experimental ☐ use 5.Never use

(Specify)

36. Do any of your family members & friend use any tobacco products?

a. Father

1. Cigarettes/Bidis yes/No

2. Tobacco-Chewing yes/No

3. Others (snuff/tooth paste) yes/No

b. Mother

1. Cigarettes/Bidis yes/No
2. Tobacco-Chewing yes/No
3. Others (snuff/tooth paste) yes/No

c. Other family members

1. Cigarettes/Bidis yes/No
2. Tobacco-Chewing yes/No
3. Others (snuff/tooth paste) yes/No

d. Friends (at least 1 of 4)

1. Cigarettes/Bidis yes/No
2. Tobacco-Chewing yes/No
3. Others (snuff/tooth paste) yes/No

37. Please rank the frequency of tobacco products use by your family members and friends? (Mark any one)

a. Father 1. Regular use 2. Occasional use 3. Previously use 4. Not at all

b. Mother 1. Regular use 2. Occasional use 3. Previously use 4. Not at all

c Other family members 1. Regular use 2. Occasional use 3. Previously use 4. Not at all

d. Friends (at least 1 of 4) 1. Regular use 2. Occasional use 3. Previously use 4. Not at all

Section G

Questions about your knowledge and attitudes toward smoking & other tobacco products.

38. Did any your friends ever forced you for using tobacco products?

1. Yes 2. No

39 If one of your best friends offered you a cigarette or any tobacco products would you use it?

1. Definitely not

2. Probably not

3. Probably yes

40. Has anyone in your family discussed the harmful effects of smoking or any tobacco products with you?

1. Yes
2. No

41. At any time during the next 12 months do you think you will smoke a cigarette or use any tobacco products?

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

42. Do you think boys who smoke cigarettes or chewing any tobacco products have more or less friends?

1. More friends
2. Fewer friends
3. No difference from non-smokers

43. Do you think girls who smoke cigarettes or chewing any tobacco products have more or less friends?

1. More friends
2. Fewer friends
3. No difference from non-smokers

44. Does smoking cigarettes or chewing any tobacco products help people feel more or less comfortable at celebrations, parties, or in other social gatherings?

1. More comfortable
2. Less comfortable
3. No difference from non-smokers

45. Do you think smoking cigarettes or chewing any tobacco products makes boys look more or less attractive?

1. More attractive
2. Less attractive
3. No difference from non-smokers

46. Do you think smoking cigarettes or chewing any tobacco products look more or less attractive?

1. More attractive
2. Less attractive
3. No difference from non-smokers

47. Do you think cigarette smoking is harmful to your health?

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

48. Do you think tobacco chewing or use any tobacco products is harmful to your health?

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

49. When you see a man smoking or chewing any tobacco products what do you think of him? (SELECT ONLY ONE RESPONSE)

1. Lacks confidence
2. Stupid
3. Loser
4. Successful
5. Intelligent
6. Macho

50., When you see a woman smoking, or chewing any tobacco products what do you think of her? (SELECT ONLY ONE RESPONSE)

1. Lacks confidence
2. Stupid
3. Loser

5. Intelligent

6. Macho

51. What do you think smoking or use any tobacco products help in morning motion or relief in toothache?

1. Improve

2. Less improve

3. No effect

Section H

The next 2 questions ask about your exposure to other people's smoking

52. Do you think the smoke from other people's cigarettes is harmful to you?

1. Definitely not

2. Probably not

3. Probably yes

4. Definitely yes

53. Are you in favor of banning smoking in public places (such as in restaurants, in buses, streetcars, and trains, in schools, on playgrounds, in gyms etc.)?

1. Yes

2. No

Section I

The next few questions ask about your knowledge of media messages about smoking

54. When you watch TV, videos, or movies, how often do you see actors smoking?

1. A lot

2. Sometimes

3. Never

55. During the past 30 days (one month), how many advertisements or promotions for cigarettes or any tobacco products have you seen in newspapers or magazines?

1. A lot

2. A few

3. None

56. When you go to sports events, fairs, concerts, or community events, how often do you see advertisements for cigarettes or any tobacco products?

1. A lot

2. Sometime

3.. Never

57. During the past 30 days (one month), how many anti-smoking or anti tobacco products media messages (e.g., television, radio, posters, newspapers, magazines, movies) have you seen?

1. A lot

2. Sometime

3.. Never

58. When you go to sports events, fairs, concerts, community events, or social gatherings, how often do you see anti-smoking messages?

1. I never go to sports events, fairs, concerts, community events, or social gatherings

2. A lot

3. Sometimes

4. Never

59 What is your opinion when you see the anti – smoking and anti-tobacco advertisement?

1. You follow it

2. You do not follow it

3. Planning to quit

4. Reduced the frequency

5. Quit habit.

Name

Address

Figure 3: Map showing Udham singh nagar district of Uttaranchal State

