CURRENT STATUS OF TOBACCO CONSUMPTION AND ITS SOCIO-ECONOMIC IMPACT AMONG THE ADOLESCENT STUDENTS OF SARLAHI, NEPAL

A DISSERTATION SUBMITTED TO THE FACULTY OF HUMANITIES AND SOCIAL SCIENCES IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF ARTS IN SOCIOLOGY

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NEPAL

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LETTER TO RECOMMENDATION

It is certified that **Mr. Bachcha Lal Mahto** has completed his dissertation **"CURRENT STATUS OF TOBACCO CONSUMPTION AND ITS SOCIO-ECONOMIC IMPACT AMONG THE ADOLESCENT STUDENTS OF SARLAHI NEPAL"** under my guidance and supervision. I recommend this dissertation for final approval and guidance.

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ACCEPTANCE CERTIFICATE

This dissertation entitled **"CURRENT STATUS OF TOBACCO CONSUMPTION AND ITS SOCIO-ECONOMIC IMPACT AMONG THE ADOLESCENT STUDENTS OF SARLAHI NEPAL" prepared** by Bachcha Lal Mahto has been accepted as the partial fulfillment of the requirement for the Master Degree in Sociology.

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Bachcha Lal Mahto

ABSTRACT

This descriptive cross sectional study was conducted in Sarlahi District of Nepal. The objective of the study was to assess the current status of tobacco consumption and factors related to tobacco use among adolescent students. The study was done in April to December 2008 and the sample size was 385 adolescent students. Stratified random sampling technique was followed for the study. The self-administered questionnaire (structure and semi structure) was distributed to the students. Proportion, mean, standard deviation, odds ratio etc. were calculated for data analysis.

16.4% (percent) of the adolescent students ever used any type of tobacco product. More than one tenth (11.1%) were current user (regular and occasional), few (3.4%) were experimental user (i.e. used any tobacco products not more than 10 times) and nearly 2% were past user. Among tobacco user, majority (41%) were occasional user followed by 29.5% regular user, 13.1% past user and 16.4% were experimental user.

One in ten (10.1%) of the respondents were used to take Cigarettes/Bidi and the use of smokeless tobacco (Pan Masala and Gutkha was 9.9 % followed by Surti and Khaini 5.2%).Prevalence of tobacco consumption among boys was significantly higher than girls. Boys were 2.3 times more likely to have tobacco use than that of girls. (21.7% and 10.4% respectively). Similarly, adolescent students of government schools were 2.4 times more likely to use tobacco as compared to private schools students.

Majority of students initiated tobacco use by 13.24 years of age (for boys 12.8 years and for girl 13.39 years). It was seen that majority (6.9%) of students of age group (16-19years) were tobacco user than 10.8% in age group 11-15.More than three fourth (78.3%) of the adolescent students used to get tobacco product from general shop. Nearly half (48.3%) used to get from peer/friend followed by Pan Shop (56.7%) and home (31%).

Nearly half (44.7%) adolescent students were living in the family where their parents used tobacco product. Students whose parents use tobacco they were 4.2 times likely to have tobacco than non user. Regarding attitude, those who reported to the favor of tobacco consumption, 60 % of them were tobacco user.

The lesson learned from above finding authority should take the concrete step to prevent the future morbidity related to tobacco consumption. Health education programs should be provided to adolescent students to raise the level of awareness of the hazards of tobacco use and to change their perceptions.

TABLE OF CONTENTS

ABBREVIATIONS

WHO	World Health Organization
ETS	Environmental Tobacco Smoke
HIV	Human Immune Deficiency Virus
AIDS	Acquire Immune Deficiency Syndrome
TFI	Tobacco Free Initiative
COLD	Chronic Obstructive Lung Disease
GYTS	Global Youth Tobacco Survey
NHRC	Nepal Health Research Council
IEC	Information Education and Communication
SPSS	Statistical Procedure for Social Science
ARI	Acute Respiratory Infection
BMJ	British Medical journal
SEARO	South East Asia Regional Office
et al	Et alii (and others)
vol.	Volume
CHD	Coronary Heart Disease
GHPS	Global Health Professional Survey
CDR	Central Development Region
SD	Standard Deviation
UK	United Kingdom
%	Percent
TV	Television
BCC	Behavior Change Communication

PEP	Peer Education Program
ARI	Acute Respiratory Infection
ASH	Action on Smoking and Health
CDC	Center for Disease Control and Prevention

CHAPTER I
INTRODUCTION

1.1 Background

Tobacco use is responsible for considerable number of morbidity and mortality in the world. It is one of the most important preventable risk factor of most non-communicable diseases. The tobacco smoke contains more than 4000 substances that are detrimental to health. Among these 4000 substances, at least 43 are carcinogenic. Based on current smoking trends, tobacco will soon become the leading cause of death worldwide, causing more deaths than HIV/AIDS, maternal mortality, automobile accidents, homicide and suicide combined.[1]

The use of tobacco in any form is a major preventable cause of premature death and disease. Globally, nearly 5 million persons dies every year from tobacco-related illness, with disproportionately higher mortality occurring in developing countries. The global burden of deaths attributable to tobacco use each year is estimated to double from 5 million in 2005 to 10 million in 2020[2].

Tobacco products have no safe level of consumption, and are the only legal consumer products that kill when used exactly as the manufacturer intends. Researchers have rated nicotine as even more addictive than heroin, cocaine, marijuana or alcohol. The Tenth Revision of the International Classification of Diseases reserves classification for tobacco dependence syndrome. Yet tobacco products continue to be aggressively marketed by tobacco companies. The result is that global tobacco consumption has doubled since medical science conclusively proved, 30 years ago, that these products were unrivalled killers and consumption is still increasing in many areas of the world[3].

Tobacco is cultivated in the many regions around the world and can be legally purchased in all countries. The dry leaf of the plant *nicotine tabacum* is used for smoking, chewing, or snuff. Comparable data on the prevalence on the smoking are not widely available and are often inaccurate especially when age-specific data are required. More importantly, current prevalence of smoking poor proxy for the cumulative hazards of smoking, which depend on several, including the age at which smoking began, duration of smoking number of cigarette per day, degree of inhalation and cigarette characteristics such as tar and nicotine content or the type of filter. To overcome this problem the smoking impact ratio which estimates excess lung cancer in smoking in developing countries, especially among males, over the last part of the 20th century[4].

Tobacco is usually smoked. Sometimes tobacco leaves are ‘dipped’ or ‘chewed’ so the nicotine is absorbed via the gums. When a person smokes a cigarette, the body responds immediately to the chemical nicotine in the smoke. Nicotine causes a short-term increase in blood pressure, heart rate, and the flow of blood from the heart. It also causes the arteries to narrow. Carbon monoxide reduces the amount of oxygen the blood can carry. This, combined with the effects produced by nicotine, creates an imbalance in the demand for oxygen by the cells and the amount of oxygen the blood is able to supply. It is now well documented that smoking can cause chronic lung disease, coronary heart disease, and stroke, as well as cancer of the lungs, larynx, esophagus, mouth, and bladder. In addition, smoking is known to contribute to cancer of the cervix, pancreas, and kidneys. Researchers have identified more than 40 chemicals in tobacco smoke that cause cancer in humans and animals[5].

Chewing tobacco is a smokeless tobacco product. Chewing is one of the oldest ways of consuming tobacco leaves. Smokeless tobacco contains 28 cancer-causing agents (carcinogens). It is a known cause of human cancer, as it increases the risk of developing cancer of the oral cavity. Oral health problems strongly associated with smokeless tobacco use are leukoplakia (a lesion of the soft tissue that consists of a white patch or plaque that cannot be scraped off) and recession of the gums[6]

Smokeless tobacco and cigars also have deadly consequences, including lung, larynx, esophageal, and oral cancer. The harmful effects of smoking do not end with the smoker. Women who use tobacco during pregnancy are more likely to have adverse birth outcomes, including babies with low birth weight, which is linked with an increased risk of infant death and with a variety of infant health disorders. The health of nonsmokers is adversely affected by environmental tobacco smoke (ETS). Each year, exposure to ETS causes an estimated 3,000 non-smoking Americans to die of lung cancer and causes up to 300,000 children to suffer from lower respiratory-tract infections. Evidence also indicates that exposure to ETS increases the risk of coronary heart disease[5].

The current global trends indicate that the use of tobacco is declining in developed countries as control measures take effect. Thus tobacco companies are stepping up marketing in developing countries. As a result, the use of tobacco is increasing especially among adolescents of developing countries. Ignorance about the negative health effects of tobacco use, big budget allocation for promotional activities by tobacco companies and glamour attached to smoking in the media and in advertisements has further exacerbated the problem.

Tobacco is unquestionably the substance responsible for the most persistent and most widespread drug dependence, far ahead of alcohol, marijuana, heroin and cocaine. More alarming is the exponential rise in tobacco consumption and the corresponding deaths, with age, income and gender being no barrier[7]

Smokers who have taken up the habit in adolescence and continue to smoke regularly have a 50% chance of dying from tobacco-related disease. Half of those persons will die in middle age, thereby losing nearly 22 years of normal life expectancy. With prolonged smoking, smokers have a death rate about three times higher than non-smokers at all ages, starting from young adulthood[8]

Undoubtedly, the most significant persuading factor in the increasing number of young tobacco users worldwide is tobacco advertising. It effectively influences teenagers to start using tobacco, and it encourages them to continue. Tobacco advertising often feeds on the fact that many teens look up to actors, musicians and/or athletes. Smoking is perceived as an adult behavior by young people, and teenagers often start smoking in order to appear more mature. A sense of social acceptability and belonging typically is a priority for young people. Peer pressure may drive a young person from experimentation with tobacco to addiction.[9]

The term adolescence is defined by the World Health Organization (WHO) as the age group 10–19 years. The meaning of adolescence as a cultural construct is understood in different ways in different societies. In general, it is considered a time of transition from childhood to adulthood during which there are physical changes associated with puberty.

1.2Justification of the study:

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 5 million deaths each year). If current smoking patterns continue, it will cause some 10 million deaths each year by 2020. Half the person that smoke today that is about 650 million people will eventually be killed by tobacco[10]. Most people begin using tobacco before the age of 18. Recent trends indicate that the smoking prevalence rate among adolescents is rising and age of initiation is becoming younger.[11]

Every year about 16,000 people in Nepal die due to smoking and consumption of tobacco. Fifty-five per cent Nepalese use tobacco related things, among them 48 per cent are over 15 years. Nepal is the top list of tobacco consuming countries in the world[12].Prevalence of tobacco use in adults was 68.4% in rural Nepal, 37.0% in urban Nepal 54.7% in Terai region and 77.7% in mountain region[13].

Adolescence is characterized by a feeling of invincibility and a sense of curiosity. Young people experiment with different behaviors without giving thought to the long-term

consequences of their actions. Many adolescents underestimate the addictiveness of nicotine and its serious health risks.

25% of high school males use smokeless tobacco.36% of high school students' smoke. Every day 6,000+ kids have their first cigarettes; 3,000 of them will become regular smoker. Students are more likely to be influenced by tobacco advertising by peer pressure.[9]

According to the situation of tobacco consumption, it is important to take account the image that adolescent consume tobacco as a combat stress in future prevention strategies and campaigns. The study can be helpful to make the future plan from the side of Government and non-government level. Concern authority should take the concrete step to prevent the future morbidity and mortality related to tobacco consumption.

1.3 Study objectives:

1.3.1 General Objective:

To assess the current status of tobacco consumption and its socio economic impact among Adolescent students of Sarlahi District, Nepal

1.3.2 Specific objectives:

1. To describe the socio demographic and cultural characteristics of adolescent students of Sarlahi, Nepal
2. To determine the type of tobacco use among the adolescent students of Sarlahi, Nepal
3. To identify the factors related to tobacco consumption among the adolescent students of Sarlahi, Nepal
4. To find out the association between socio-demographic factor and tobacco consumption among the adolescent students of Sarlahi, Nepal
5. To find out the association between knowledge and attitude with tobacco consumption among the adolescent students of Sarlahi, Nepal.

1.4 Operational definition:

Tobacco: Leaves of the tobacco plant dried and prepared for smoking or ingestion. Tobacco is also chewed, "dipped" (place between the cheek and gum) and consumed as finely powdered snuff tobacco, which is sniffed into the nose.

Tobacco consumption: It denotes that the adolescent student use any form of the tobacco product especially cigarette/Bidi, chewable tobacco like Surti, Parag, Hukka or Chillim

Adolescent: In general, terms it is considered a time of transition from childhood to adulthood during which there are physical changes associated with puberty.

In this study, adolescent define as student of grade 7, 8, 9 and 10 of both government and private school within the age of 10 to 19 years from Sarlahi District.

Demographic: The basic classification variables: sex, race, age, education, marital status, and income, religion that characterize an individual.

Attitude: In this study, attitude denotes Respondent's own opinion on tobacco consumption

Awareness: Awareness is the perceived knowledge and conducive behavior of a person it is clear and certain mental perception, understanding the facts, knowing the facts, familiarity with the information related to the study questions .In this study awareness referred to level of awareness on tobacco.

Perception towards tobacco use:

The perception of the adolescent student was measured in the 5-point scale ranging from Strongly agree to strongly disagree on the given statements. For simple analysis, strongly agree and agree were merged to agree and strongly disagree and disagree were merged to disagree. Finally, categories for analysis of perceptions were Agree, Can't say, Disagree

Habit: Habit is an accustomed way of doing thing or more commonly practiced customs.

IEC materials: The published or hand made materials which provide the information and education regarding the reproductive and sexual health

Type of tobacco user: In this study, type of tobacco user is defined as in table given below:

<table>
<tr><th colspan="5">Tobacco user</th></tr>
<tr><td colspan="4">Ever user</td><td>Never user</td></tr>
<tr><td colspan="2">Current user</td><td rowspan="2">Experimental user</td><td rowspan="2">Past user</td><td rowspan="2"></td></tr>
<tr><td>Regular user</td><td>Occasional user</td></tr>
</table>

Consumes/Uses Any form of tobacco Products at least once a day.	Consumes/Uses any tobacco products at Least once a week but not everyday.	Consumed any tobacco product at any time but not more than 10 units.	Formerly regular or occasional user but presently does not consume tobacco.	Never used any form of tobacco Products as of the day of completing the questionnaire.

Knowledge: In this study, the knowledge on hazardous effect of tobacco consumption is defined as following way:

Knowledge on harmful effects of tobacco use		
Good Knowledge	Average Knowledge	Poor Knowledge
Recall at least two major health	Recall at least one major health	Recall none of the major health

Illiterate: Those who can neither read or write

Literate: Those who participate in informal education/ simply they can write and read.

Primary education: Level of education that has been passed 1 to 5 grades.

Lower Secondary education: Level of education that has been passed 6 to 8 grades.

Secondary education: Level of education that has been passed 8 to 10 grades.

Higher education: Level of education that has passed intermediate or high.

Culture: It is the system of sharing ides and feelings that determined people's the way of living. All cultures are learned but not transmitted or inherited from generation to generation.

1.5 Limitations of the study:

The outcomes of the study were only applicable in similar situation of Nepal and neighborhood countries. The study could not explore many things, as only limited areas were covered.

The self-administered questionnaire was used, so there was a possibility of reporting false information. However, every effort was made to motivate respondents to provide true information. The study was covered only the Sarlahi thus; it might not represent the situation of adolescent students of the country as a whole.

1.6 Research Question:

What is the current status of tobacco consumption and its Socio Economic impact among the Adolescent students of Sarlahi District, Nepal?

CHAPTER II
LITERATURE REVIEW

2.1 Global Scenario:

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 5 million deaths each year). If current smoking patterns continue, it will cause some 10 million deaths each year by 2020. Half the person that smoke today that is 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 sickness.[10]

At present, World Health Organization (WHO) estimates 1.1 billion smokers in the world today; the number is expected to rise to 1.64 billion by the year 2025. About 4.9 million people die each year from tobacco use. If the current trends continue, this figure will reach more than 10 million by the early 2030s, with over 70 percent of those deaths occurring in developing countries.[1]

The use of tobacco in any form is a major preventable cause of premature death and disease. Globally, nearly 5 million persons dies every year from tobacco-related illness, with disproportionately higher mortality occurring in developing countries. The global burden of deaths attributable to tobacco use each year is estimated to double from 5 million in 2005 to 10 million in 2020[2].

WHO estimates that there are about 1100 million regular smokers in the world today. About 300 million (200 million males and 100 million females) are in the developed countries, and nearly three times as many (800 million: 700 million males and 100 million females), in developing countries. In developed countries, 41% of men are regular smokers, as are 21% of women. Half the men living in developing countries are smokers, compared with about 8% of women.[3]

At the beginning of the 21st century, tobacco use among young people is already well established in many parts of the world. Nearly 20% of 13–15 year olds use some type of tobacco product, and among those who smoke cigarettes, nearly 25% smoked their first

cigarette before the age of 10 years. The determinants of youth tobacco use are many and varied. Cultural and religious norms, availability of different types of tobacco products, tobacco control strategies, and, perhaps most importantly, tobacco industry behaviors to promote tobacco use and undercut tobacco control strategies are determining factors. While we do not fully understand all the factors that contribute to the decision to use tobacco, which quickly leads to addiction and eventual adverse health outcomes, we do need to understand better the patterns of use, how the determinants of use interact, and how they differ among countries and cultures. Systematic global surveillance of youth tobacco use is the essential first step in attempting to prevent the projected epidemic
of death and disease that smoking will cause in the 21st century. The GYTS was developed to enhance the capacity of countries to design, develop, implement, and evaluate their tobacco prevention and control programs.[14]

The World Health Organization estimates that there are around 1.3 billion smokers in the world, of which almost 1 billion are men. This represents about one third of the global population aged 15 and over and the vast majority of these people, around 84% or 1 billion people live in developing countries. In China alone, there are about 350 million smokers (60% men and 3% women), more than the entire population of the United States of America. If the current smoking patterns in China continue, around 100 million Chinese men now aged 0-29 will die as a result of their tobacco use.[23]

By 2030, tobacco is expected to be the single biggest cause of death worldwide, with an estimated 10 million people world wide dying of tobacco related causes. Around 3 million of these will occur in the developed world and 7 million in developing countries. Since the 1950s, more than 70,000 scientific articles have shown that prolonged smoking causes premature death and disability worldwide. Overall, one in two smokers will die prematurely, with one quarter dying in middle age, losing 20-25 years of life. Smoking alone is estimated to have caused 21% of deaths from cancer worldwide.[23]

A report estimated that the use of tobacco resulted in an annual global net loss of US$ 200 thousand million, a third of this loss being in developing countries. Tobacco and poverty are inextricably linked. Many studies have shown that in the poorest households in some low-income countries as much as 10% of total household expenditure is on tobacco. This means that these families have less money to spend on basic items such as food, education and health care. In addition to its direct health effects, tobacco leads to malnutrition, increased health care costs and premature death. It also contributes to a higher illiteracy rate, since

money that could have been used for education is spent on tobacco instead. Tobacco's role in exacerbating poverty has been largely ignored by researchers in both fields. Experience has shown that there are many cost-effective tobacco control measures that can be used in different settings and that can have a significant impact on tobacco consumption. The most cost-effective strategies are population-wide public policies, like bans on direct and indirect tobacco advertising, tobacco tax and price increases, smoke-free environments in all public and workplaces, and large clear graphic health messages on tobacco packaging. All these measures are discussed on the provisions of the WHO Framework Convention on Tobacco Control.[10]

The health consequences of the smoking epidemic in developed countries have been quantified by WHO, in close collaboration with the Imperial Cancer Research Fund's Cancer Studies Unit at the University Of Oxford, UK. A major report giving detailed estimates of the numbers and rates of smoking-attributed deaths for over 50 countries or groups of countries has been published. Between 1950 and 2000, it is estimated that smoking will have caused about 62 million deaths in the developed countries (12.5 % of all deaths: 20% of male deaths and 4% of female deaths). More than half of these deaths (38 million) will have occurred at ages 35-69 years. Currently, smoking is the cause of more than one in three (36%) male deaths in middle age, and about one in eight (13%) of female deaths. Each smoker who dies in this age group loses, on average, 22 years of life compared with average life expectancy. During the 1990s, the report estimates that almost 2 million people a year will die from smoking in developed countries (1.44 million men and 0.48 million women).[3]

An analysis of trends in cigarette consumption for WHO regions indicates that the two regions with the highest average per capita (adult) consumption in 1990-1992 were Europe (2290 cigarettes per adult per year) and the Western Pacific (2000). The lowest consumption was observed in the African Region (540). For the developed countries as a whole, per capita adult consumption is currently about 2400 cigarettes, which is still significantly greater than the average consumption in the developing world (1370 cigarettes)[3].

In 1970-1972, consumption per adult in the developed countries was 3.25 times higher than in the developing world. By 1980-1982, this ratio had narrowed to 2.38, and by 1990-1992, to 1.75. During the last decade, per capita consumption has declined by an average of 1.4% per year in developed countries, but has risen by 1.7% annually in

developing countries. If these trends were to continue, consumption of cigarettes per adult in the developing world will exceed levels in the developed world some time between the years 2005 and 2010.There have been very noticeable differences in trends among WHO regions. Over the last decade, the fastest decline in per capita consumption occurred in the Americas. This entirely due to declines in consumption in Canada and the United States of America; excluding those two countries, per capita consumption in the Region still declined by an annual average of 1.7%. On the other hand, the increasing consumption in the Western Pacific (2.2%) and South-East Asia (1.8%) is primarily due to the trends in China and India respectively. From 1983, per capita (adult) consumption in China rose by 3.9% per year to reach 1990 cigarettes in 1990-1992. In India, where about 90% of cigarettes are consumed in the form of bidis (traditional hand-rolled cigarettes), adult consumption has risen by about 2% per year over the last decade and now exceeds 1200 cigarettes (including bidis) [3]

As regards cigarettes the health consequences of tobacco use are much more difficult to estimate in developing countries owing to lack of data. Currently, it is estimated that tobacco causes about 1 million deaths a year in developing countries, but there is substantial uncertainty about this figure. If current trends continue, and if the risks of death from tobacco use are similar in developing countries to those that have been observed in the industrialized world, then the annual toll of mortality from tobacco will rise dramatically to around 7 million deaths per year in the 2020s or early 2030s. The chief uncertainty is not whether, but rather when, these deaths will occur if current trends in tobacco use persist.[3]

The overall median per cent of students who had ever smoked cigarettes, even one or two puffs, was 33.0%. The highest per cent who ever smoked cigarettes was in the Northern Mariana Islands (79.8%), and the lowest in Tamil Nadu, India (3.4%). Over 70% of students reported having ever smoked cigarettes in three of the 75 sites (Santiago, Chile; Kiev, Ukraine; and Northern Mariana Islands) and 50% reported having ever smoked in 18 sites. Only five sites reported ever smoking rates less than 10% (four states in India and Nepal) [25].

Percent of students who ever smoked cigarettes, who smoked their first cigarette before age 10 years, was 23.9%. Manipur, India (87.8%) had the highest rate of smoking initiation before age 10, and the lowest was Buenos Aires, Argentina (6.1%). A total of eight sites, all in India, reported that of the students who smoked, more than half smoked their first cigarette before the age of 10 years. Only five sites reported a prevalence of fewer than 10% for students smoking their first cigarette before the age of 10 years. The overall median percent of current use of any tobacco product (smoked cigarettes or used other tobacco

products on one or more days in the 30 days preceding the survey) was 18.7%.The highest per cent currently using any tobacco product was in the Nagaland, India (62.8%), and the lowest in Goa, India (3.3%). Over 50% of the students reported current use of any tobacco product in six states in India; Northern Mariana Islands; and Palau. Less than 10% of the students currently used any tobacco product in nine of the 75 sites (Virgin Islands (Am.); three states in India; Nepal; Sri Lanka; Shandong and Tianjin, China; and Singapore).[25]

The forces of globalization have led the tobacco industry to expand ever further in search of new markets in developing countries. In response to the globalization of the tobacco epidemic, WHO's Member States unanimously adopted WHO's first global treaty, the WHO Framework Convention on Tobacco Control (WHO FCTC), in May 2003. The treaty has entered into force on 27 February 2005. On 29 June 2004 the WHO FCTC was closed for signatures. As on 2nd April 2007, 168 countries signed and 146 countries ratified the WHO FCTC. Out of 11 SEAR countries, 10 have signed and ratified the WHO FCTC.

Meanwhile, a vicious link has been established between tobacco and poverty. Tobacco contributes to the continuing poverty of low-income households and countries because money is spent on tobacco instead of food, education, and health care.[28]

2.2 Nepal Scenario:

A study done in different ecological regions of Nepal indicated that prevalence of tobacco use in adults was 68.4% in rural Nepal, 37.0% in urban Nepal 54.7% in Terai region and 77.7% in mountain region. It was interesting to note that in the mountain region, the female smoking rate was 71.6%, which is one of the highest reported in the world[13].

A national survey on tobacco economics showed that smoking rate increases with age; among the 16-19 years old it was about 30%. It was unveiled that the household share of expenditure on tobacco product is more than 3.5%[16].

Another cross sectional survey of students of grade 4-9 was recently conducted in a private school of Kathmandu. 47% of the students were of the age group 13-15 years. In contrary to the findings from other studies, the prevalence of tobacco use in this particular study was quite high. A regular smoker (smoking at least one cigarette per day) was 7.8%. The percentage of students using tobacco in forms other than smoking was 42.4% (n=924, coverage rate 95%). However, this included the students using these products daily and occasionally as well as only during festivals. A substantial portion of the occasional smokers (57.2%) expressed their wish to quit smoking[17].

The recently published Global Youth Tobacco Survey (GYTS) report on Tobacco Use among Youth: A Cross Country Comparison revealed that 186 million populations were

estimated to be in the age group 13-15 out of the world population of 6.2 billion. The GYTS studies covers 140 countries around the world, including Nepal. Out of the 186 million, 34.8 million were estimated to be currently using some form of tobacco and 25.8 million were currently smoking cigarettes. The use of any form of tobacco by 13-15 year old students was found to be more than 10%. Current smokers in this age group was less than 10% around the world [18].

Nepal has very high prevalence rate of chronic obstructive lung disease (COLD) varying from 20-40% in persons above the age of twenty years. This was found to be significantly associated with tobacco smoking[13, 1]. Acute respiratory infection is the second biggest killer of infants and children in Nepal and positive correlation between tobacco smoking by parents and ARI in infants have been shown in a study conducted in Nepal[19]

A cross-sectional survey of a representative sample of 2,340 female participants aged 15 years and above was conducted in Dhahran municipality of Eastern part of Nepal. The finding was that 12.9% were cigarette smokers and 14.1 % were smokeless tobacco users. The smoking habit had a significant relationship with the habit of tobacco chewing. About 50% of the smokers had been continuously smoking for more than 20 years. Smokers aged 50 years and above were more likely to smoke more than 10 cigarettes per day than those at the reproductive age (15-49 years)[20]

There is evidence that among the patients with myocardial infarction and acute coronary syndrome, more than 80 % were smokers. The female smoking rate is highest in Nepal than any other part of the world accounting for 73 % in the hilly region. Smoking is a leading and one of the most preventable risk factor for coronary heart disease (CHD) and sudden cardiac death. Although the prevalence of tobacco use and the tobacco-dependent population of Nepal have not been studied extensively, a few studies have shown that prevalence of smoking in Nepal among the age group varying from 15 to 30 is more than 70%[21]

A cross-sectional survey of 1157 young individuals between the ages of eight and 19 years living in a rural community of the hill region of Nepal was carried out with the help of the WHO standardized smoking survey questionnaire for young people. There was a very high response rate (96.1 per cent). The survey was carried out by a health assistant especially trained in smoking survey techniques for young people. Special care was taken in interviewing the younger boys and girls to overcome the problems of concealment of information and inhibition in reporting the smoking habit. The overall prevalence of daily smoking was found to be 12.6 per cent (17.3 per cent for boys and 6.7 per cent for girls).

The prevalence increased with age for both sexes. In addition, there were a large number of weekly and experimental smokers especially in the younger age groups. Young persons who are not in school constituted a vulnerable group. Education was found to be beneficial and helped to form a favorable attitude including public action against smoking. A major deterrent factor seemed to be strong peer pressure in school. Attitudes of parents, siblings, and friends were also assessed, and results indicated that peer pressure had more influence against smoking on non-smokers than on smokers.[15]

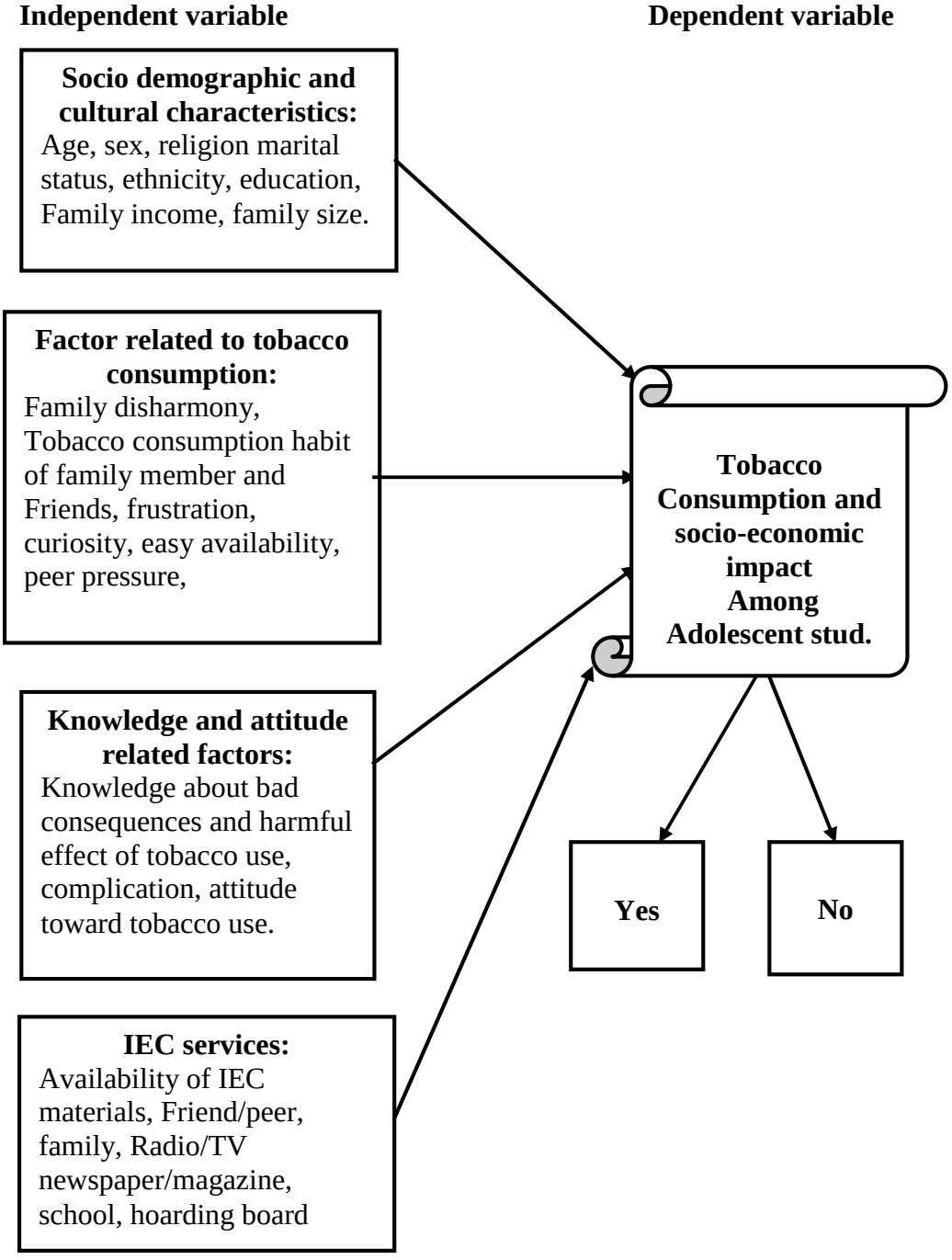
The survey carried out by Global Health Professional survey (GHPS) in Nepal found more than 1 in 10 (17.4 %) dental students and about 2 in 10 (23.6%) medical students reported that they were current cigarette smokers. Male medical and dental students were significantly more likely than their female peers to be current smokers (41.3 % versus 7.7 % in dentistry and 34.1 % versus 5.4 % in medical). As far as nicotine dependency among medical and dental students is concerned, around 6 in 10 dental students and more than 4 in 10 (43.5 %) medical students showed a desire to smoke within 30 minutes of awaking in the morning. Around 2 in 10 (19.1 %) dental students and more than 1 in 10 (15.0%) medical students reported that they currently used chewing tobacco products like Khaini, Gutka, Pan-masala with Zarda or Pan with Zarda. A higher proportion n of male dental students (44.4 %) used chewing tobacco products than their female peers (6.4 %) showing statistically significant difference. Among medical students, male were more likely to use chewing tobacco products than female students (19.7 % versus 6.1%).[23]

A cross-sectional survey of students in grade 8-10, conducted in 49 secondary schools of Central Development Region (CDR) of Nepal in 2001. A two-stage cluster sample design was used to produce representative data for the region. Overall 16.3% of the students ever used tobacco product in any form. Percentage of current users of any form of tobacco product was 11.6% and the rate among boys was significantly higher (15.3%) than among girls (6.4%). The overall percentage of cigarette smoking was 4.1%. Majority, (77.7%) of the students were taught about the dangers of smoking, its effect as a part of lesion in the class. Perhaps, as a consequence, a vast majority (76.8%) of the current smokers expressed their desire and also made an attempt (77.7%) to stop tobacco use.[26]

CHAPTER III

RESEARCH METHEDOLOGY

3.1 Conceptual framework:



3.2 Study design:

This study design was followed by descriptive cross-sectional Study conducted to assess the current status of tobacco consumption its socio economic impact among the Adolescent students of selected schools within Sarlahi District of Nepal**.**

3.3 Study Population:

The study population was the adolescent students of class7, 8, 9 and 10 from secondary schools within Sarlahi District of Nepal.

3.4 Study Area and Site:

For the study purpose, Sarlahi District was selected as study area. This is situated in the central development region. There are more than 58 secondary and higher secondary schools in Sarlahi District. But the study was carried out within Sarlahi District.

3.5 Study Period:

The study period was April 2008 to December 2008. Data was collected in May 2008.

3.6 Sample Size:

Sample size was taken based on following formula,

$$\text{Sample size (n)} = \frac{z^2_{\alpha}\, p\, q}{d^2}$$

z = the standard normal deviate set at 1.96 which corresponds to the 95 % CI.

P = the proportion of the adolescent student who consume tobacco product was unknown therefore, it was taken as taken as 50 % (0.5)

q=1-p= 0.5

d = allowable error = 0.05

$$\text{Sample size (n)} = \frac{(1.96)^2 X\ 0.5 X 0.5}{(0.05)^2}$$

$$384.16 \sim 385$$

3.7 Inclusion and exclusion criteria:

3.7.1 Inclusion:

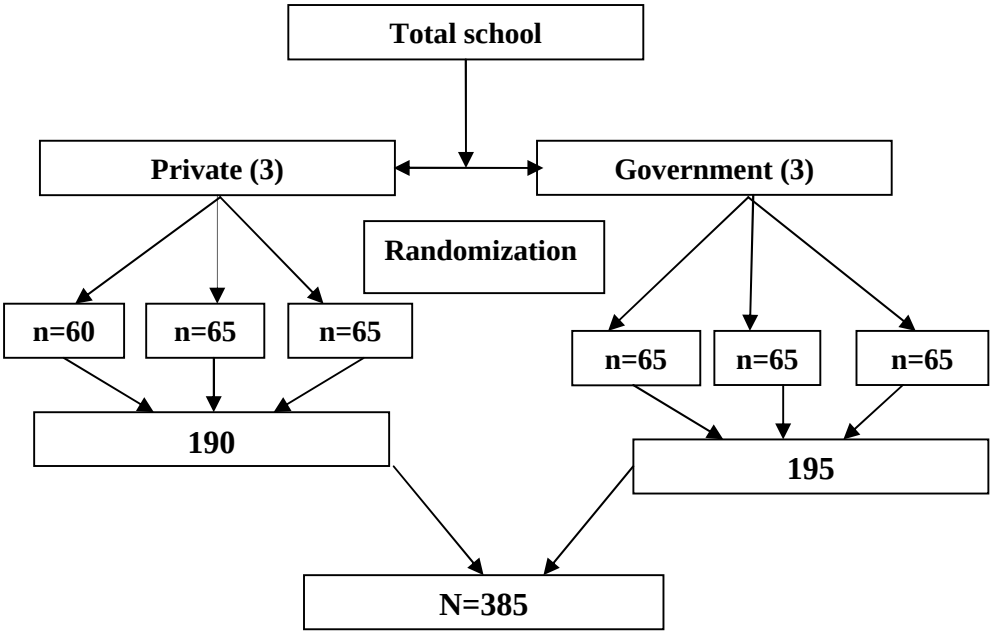
- The students of age 11-19 years and willingly participates to fill up questionnaire.
- Respondents were taken only from Sarlahi District of Nepal.

3.7.2 Exclusion:

- The person refusing to give informed consent, disagree to participate in the study.
- The person, mentally disturbed, was excluded from the study.
- Those students of age 20 years and above was not included in this study.

3.8 Sampling Technique:

The Study was followed by stratified random sampling technique. From the government school 195 and 190 sample was taken for the study. Total six schools (private three and government three) was included for the study.



3.9 Data Collection Tools:

Data was collected by using self-administered questionnaire. Informed verbal Consent from the school authority was obtained after explaining the purpose of the study. The self-administered questionnaires were distributed to the students of selected classes after explaining the purpose of the study and the instructions to fill in the questionnaire. Considering the sensitivity of the issue, the school authority was requested not to be present in the class during the filling in of the questionnaire.

Self-administered questionnaire in *Nepali* language was used to collect the information. The questionnaire was pre-tested in Public Higher Secondary School,

Malangwa. Following the pre-test, some modification was done in questions and terminology made in the final questionnaire.

3.10 Data Management and analysis Plan:

- The study was based on primary data with descriptive cross-sectional design filled directly with the help of respondents.
- The collected data was edited by checking and re checking. The data was analyzed by using the software SPSS.
- The analyzed data were presented in tables, graphs, charts and bars to meet the specific objectives. Descriptive statistics were used for the interpretation of the data base.

3.11 Quality control and quality assurance:

Pre test of the questionnaire was taken in the similar situation in Terai District. During data collection was monitored and after collection checking and editing was done on the scientific base. Double entry data system was followed for better quality. Data analysis was done by SPSS.

3.12 Ethical consideration:

All ethical issues related to research involving human subjects were addressed according to the Nepal Health Research Council (NHRC) and ethical review committee of WHO.

The proposed participants were given free opportunity to summary information of study in writing before giving consent and taking part of the interview of research. Participants were given opportunity to refuse and withdraw from the study at any time. Privacy of the participants was maintained.

CHAPTER IV

RESULTS

This descriptive cross sectional study was carried out among the 385 students of secondary level in Sarlahi District of Nepal. It was conducted to assess the current status of tobacco consumption among adolescent students of selected secondary school. The collected data was analyzed by using the statistical package SPSS/11.5.

This particular chapter contain following aspects of the study;

1. Distribution of the respondents according to Socio Demographic characteristics.
2. Distribution of the respondent according to tobacco consumption.
3. Type of tobacco consumption among the respondent
4. Factors related to tobacco consumption among the Adolescent students.
5. The association between socio-demographic factor and tobacco consumption.
6. The association between knowledge and attitude with tobacco consumption among the respondents.

4.1 Socio demographic Characteristics:

Demographic characteristics play an important role in the process of development of a nation. A demographic characteristic contains in all aspects mainly age, sex population, family structure, marital status, economical condition and educational status etc. The result with every variable is presented with the help of tables, chart, graphs etc.as required for output.

4.1.1 General characteristics of the Respondent:

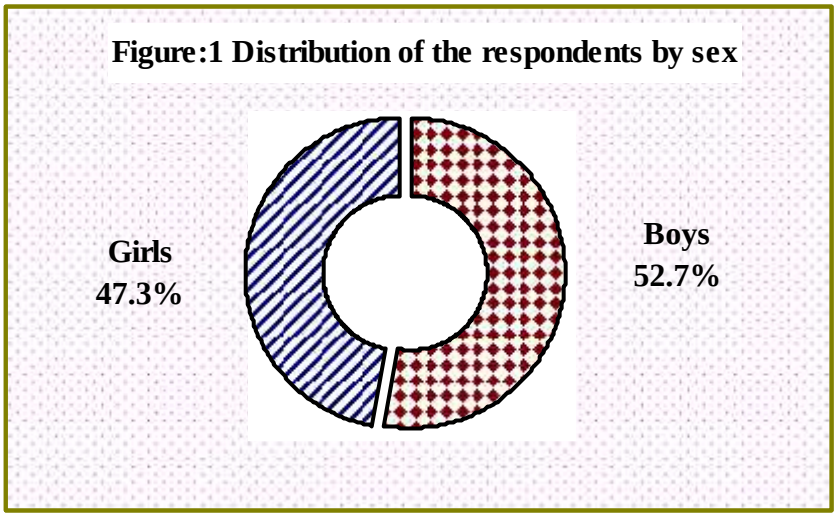
Age: The respondents were the age between 11 to 19 years. Among them, majority (60.5 %) of the respondent were age group 14 – 16 years and more than one fifth(21.6%) of

the adolescent student were at the age group 17-19 years followed by nearly 18% of them were age group 11-13 years. The mean age of the adolescent was 15.01± SD1.61 years.

Educational level of students: The grade distribution of the respondent was more or less same though 26.8% of them were from grade ten followed by 26.0% from nine, 24.8% from eight and from seven grades was 22.3%

Sex: Among the total 385 respondents, majority of the respondents (52.7%) were boys

Figure:1 Distribution of the respondents by sex



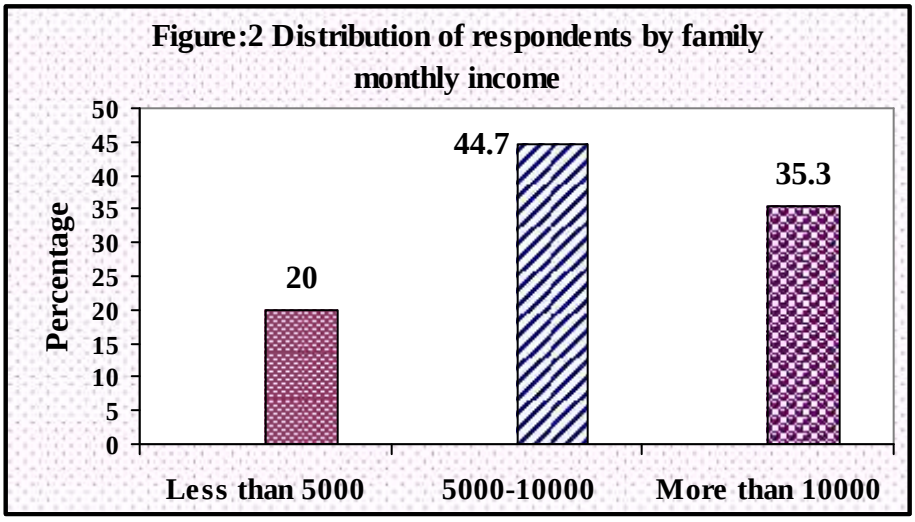
Followed by 47.3% girls. Among them 58.1% of boys were from private school and 41.9% from govt. school followed by 39.6% of girls were from private school and 60.4% from Government school.

Religion: More than 4/5th (86.5%) of the adolescent student were from Hindu religion and few 8.1% were Buddhist followed by Christian (3.1%) and Muslim (2.3%)

Caste/ Ethnicity: More than one fourth (28.6%) of the respondents were from Chhetri and the proportion of Bramin was 23.24%. Other includes kalwar (14.5%) followed by Newar (13.0%), Dalit (10%), Rai/Limbu (6.0%) and other (4.4%).

Type of family: Among the total 385 respondents more than two third (67.8%) were from nuclear family and nearly one third (32.2 %) were from joint family.

Monthly family income: Regarding the monthly family income of the respondents, the Nepali currency Rs less than 5000 covered only 20 % and the highest was more than



35.3%. Rs.10000 that covers only. Majority of the respondent (44.7%) have family income between Rs. 5000 to 10000. The median income was around Rs.10000. The minimum income was 3500 followed by maximum income 50000.

Marital status: Among the total respondents majority (95.1%) were unmarried and very few (4.9 %) of respondents were married. It shows that marriage in teen age is less.

Family size of the respondent: Nearly half (47.5%) of respondent were found having below five members family and 40.5% were having 5-7 family members. Remaining 6.8% respondents were having 8-10 members and only 5.2% have family member more than ten.

Relationship with Parents: Majority of the respondent (69.4%) claimed that they have friendly relationship with parents and other family member (i.e. sister, brother) and more than one fourth (26%) of them noted fair relationship to them. Very few (4.7%) of the student found the relation was Quarrelsome to the family member.

Activity of the respondent: Students were asked whether they were involved in any organization. Among them 31.7% of the total respondent were involved in organization like sporting club, Social organization (Red-Cross, Reyukai or Scout etc) and Youth club.

Education status of Parents: Regarding the percentage distribution of the respondent's parents, their fathers were found to be more educated than their mother. Only 5.2% of fathers group were illiterate, 31.2% had primary education, 27.3% completed secondary education, and majority of them were had college and above, On the other hand, , majority(47%) of mother group completed their primary education, 20% of them found illiterate, followed by 21.6% secondary education and 11.4% college or above.

Table 1 Frequency distribution of the respondent according to socio demographic characteristics (n=385)

Characteristics	Frequency	Percentage
Education level of the Student		
Seven	86	22.3
Eight	96	24.9
Nine	100	26.0
	103	26.8
Age of the student:		
11-13 years	69	17.9
14-16 years	233	60.5
17-19 years	83	21.6
Mean age: 15.01 Std. Deviation : 1.61 Std. Error of Mean: 0.802		
Sex of the student		
Male	203	52.7
Female	182	47.3
Marital status:		
Unmarried	366	95.1
Married	19	4.9
Religion of the respondent		
Hindu	333	86.5
Buddhist	31	8.1
Muslim	9	2.3
Christian	12	3.1

Caste/ Ethnicity		
Bramin	90	23.24
Chhetri	110	28.6
kalwar	56	14.5
Newar	50	13.0
Dalit	29	10.1
Rai / Limbu	23	6.0
Other	17	4.4
Type of School		
Government	195	50.6
Private	190	49.4

Characteristics	Frequency	Percentage
Family monthly income		
Less than 5000	77	20.0
5000-10000	172	44.7
More than 10000	136	35.3
Type of Family		
Nuclear	261	67.8
Joint	124	32.2
Family size		
Less than 5 member	183	47.5
5 to seven	156	40.5
8 to Ten	26	6.8
More than Ten	20	5.2
Relationship with family member		
Friendly	267	69.4
Fair	100	26.0
Quarrelsome	18	4.7
Involve in any org.(n=385)*	122	31.7
Sporting club(n= 125)	60	48
Social organization(n=123)	54	43.9
Youth club(n=123)	23	18.7
**Multiple Responses*		

Figure: 2 Education Status of respondent's parents:

Education Level	Father		Mother	
	Frequency	Percentage	Frequency	Percentage
Illiterate	20	5.2	77	20
Primary education	120	31.2	181	47
Secondary education	105	27.3	83	21.6
College or above	140	36.4	44	11.4

Information related factor (heard about Tobacco):

Regarding the information getting about any form of the tobacco product; nearly 100% of the respondent noted they were heard about any form of tobacco product. Nearly 98% of the respondents were familiar with cigarette/Bidi, nearly 63% of them were heard about smokeless tobacco product (Surti /Khaini, Gutkha/Pan Masala) and few 42.5% heard about Hukka/Chilim as comparison to other.

Expose to Media for information by adolescent:

Majority of the respondent (73%) noted that they received the information on tobacco product from TV/Radio. Followed by Newspaper/ Media (65.6%), Family /School (58.3%) and 46.5% in Peer/Friend.

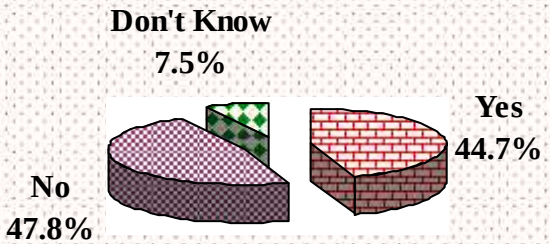
Table 3 Frequency distribution of the respondent according to source of information on tobacco (n=381)

Characteristics	Frequency	Percentage
Know heard about any form of tobacco:		
Yes	382	99.2
No	3	0.8
Expose to media:		
Peer/Friend (n=381) *	177	46.5
News paper/Magazine (n=381)	250	65.6
TV/Radio (n=381)	278	73.0
Family / School (n=381)	245	58.3
** Multiple Response*		

Tobacco use habit among the respondent's parents:

According to the information given by the adolescent student, tobacco consumption habit of parents found as 44.7% whereas 47.8% of the respondent never use any form of tobacco product but 7.5% of the respondent didn't know about that habit.

Figure:3 Distribution of the respondent's Parents according to tobacco consumption



Tobacco use habit of the Adolescent student:

Among the total (n=385) respondent 16.4% of the respondent reported that they were using any form of the tobacco product. Among the tobacco consumer (n=63), 69.8 %of the student were boys and only 30.2% were girls. But the overall percentage of tobacco consumption was 21.7% in boys followed by 10.4% in girls. Among the student of government school student the percentage was more (22.1%) than that of the student of private school.

Figure:4 Distribution of respondents based on Tobacco consumption

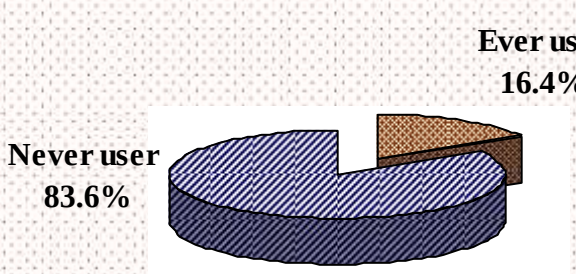


Table: 4 distribution of the respondent according to tobacco consumption

(Using any form of tobacco product, n=385)

4(a) Distribution by sex:

Characteristics	Frequency	Percentage
Boys *(n=203*)	44	21.7
Girls*(n=182)*	19	10.4
Total(n=385)	63	16.4

4(b) Distribution by type of school

Characteristics	Frequency	Percentage
Government (n=195)	43	22.1
Private(n=190)	20	10.5
Total(n=385)	63	16.4

Type of tobacco user:

Among the tobacco user, Majority (41.0%) of the respondent were occasional user, 29.5% of the respondent were regular user followed by (13.1%) past user and (16.4%) experimental user. Among boys majority (36.3%) were regular user and in girls majority was (47.4%) in occasional user. In total study population, 15.3% of boys were found as current user (regular and occasional), on the other hand only 6.5% of girls belong to current user.

Table: 5 Proportion of the respondent based on type of tobacco user:

5(a) Among the tobacco user (n=63)

Category	Current user		Experimental user	Past user
	Regular user	Occasional user		
Boys	36.3	34.1	18.2	11.4

Girls	15.8	47.4	2.7	1.1
Total	29.5	41.0	16.4	13.1

5(b) Among total study population (n=385)

Category	**Current user**		**Experimental user**	**Past user**
	Regular user	Occasional user		
Boys	7.9	7.4	3.9	2.5
Girls	1.6	4.9	2.7	1.1
Total	4.9	6.2	3.4	1.8

Type of Tobacco product consume by adolescent:

Among the total respondent majority (10.1%) of the respondent reported that they used to take Cigarettes/Bidi and 9.9 % of them were using smokeless tobacco (Pan Masala and Gutkha) followed by using Surti and Khaini (5.2%).

Smoking in private school was higher than in government school whereas surti/khaini consumption was high in Government school and that of Pan Masala and Gutkha user were high in private school student. Regarding the sex distribution, majority of the boys found to consume Cigarettes/Bidi but the proportion of using Pan Masala was high in girls.

Table: 6 Proportion of the respondent according to type of Tobacco consume

6(a) among total study population (n=385)

Category#	Cigarettes/Bidi	Smokeless Tobacco	
		Surti/Khaini	Gutkha/Pan Masala
Girl	4.4	2.7	6.6
Boys	15.3	7.4	12.8
Government school	14.9	7.2	13.8
Private school	5.3	3.2	5.8
Total	10.1	5.2	9.9

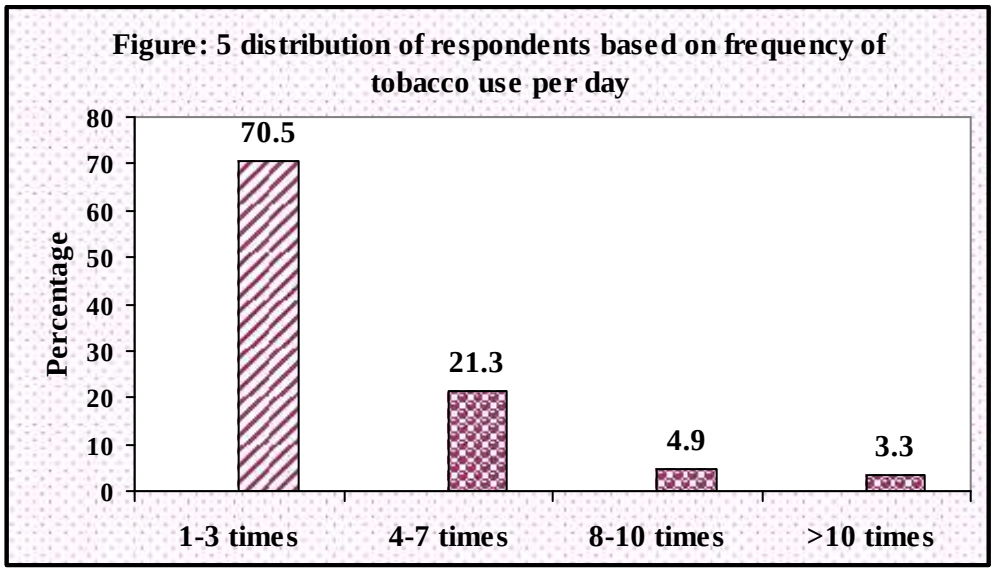
 # Multiple response

6(b) among the tobacco user (n=63)

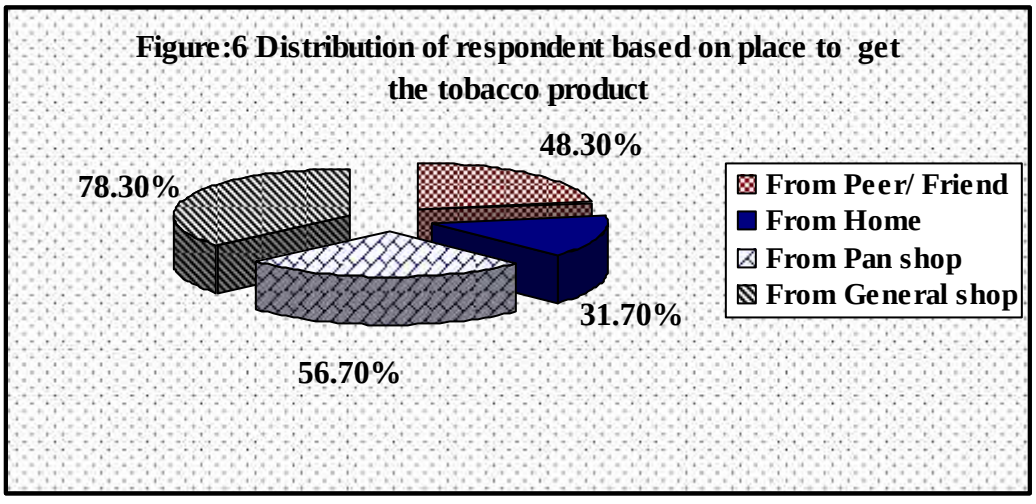
Category#	Cigarettes/Bidi	Smokeless Tobacco	
		Surti / Khaini	Gutkha/Pan Masala
Girl	44.4	27.8	61.1
Boys	70.5	34.1	59.1
Government school	79	33.3	61.9
Private school	50	30	55
Total	62.9	32.3	59.7

Frequency of tobacco taking behavior per day:

Nearly 3/4$^{th\ of}$ the tobacco consumers were consumed any form of tobacco 1-3 times/ day. And only 21.3% of them reported the frequency four to seven times/day followed by nearly 5% for 8-10 times and only 3.3% more than 10 times consumed the tobacco product. The mean frequency of tobacco use was 1.4 with standard deviation 0.739 and SE of mean 0.095



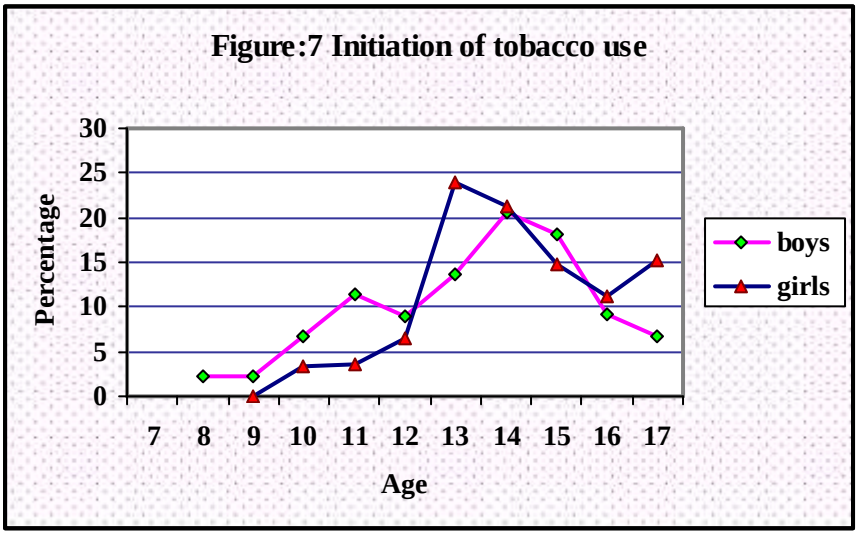
Place to get Tobacco product: Majority (78.3%) of the adolescent student reported that they got tobacco product from general shop. Another alternative was from peer/friend (48.3%) followed by battle (pan) Shop (56.7%) and home (31%).



Initiation of Tobacco use:

The mean age of initiating tobacco use was 13.24 years. The mean age for boys was 12.8 and for girl found 13.39 years. Some students reported initiation of tobacco use as early as 7 years of age and 6.3% of the respondent were started tobacco before 10 years. 1/5th (22.2%) of ever tobacco users initiated tobacco between 10-12 years of age.

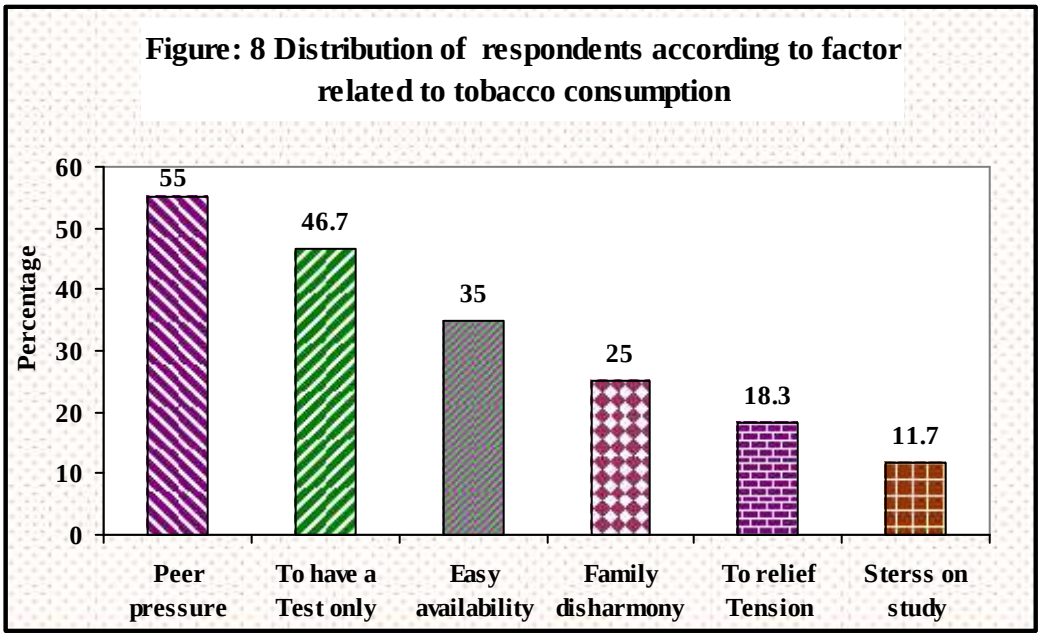
Among boys, one fifth of them initiated tobacco at 14 years of age but one fourth of girl started at 13 years of age. The line chart show the initiation of tobacco was in boys was earlier than that of boys.



4.2 Factor related to Tobacco consumption:

Another important objective of this research was to find out the factor related to tobacco consumption. As per information given by the adolescent student, the main cause of the tobacco initiation was peer pressure. Majority (55%) of the respondent reported it as a main cause. The second factor for the tobacco use was to have a test only. Nearly 47% of the respondent noted for that reason. More than one third (35%) of the respondents were consuming tobacco related product as easy availability of the tobacco product. One fourth of

the respondent were started to take tobacco because of family disharmony followed by 18.3% to relief tension and stress on study was only 11.7% among the tobacco consumer.

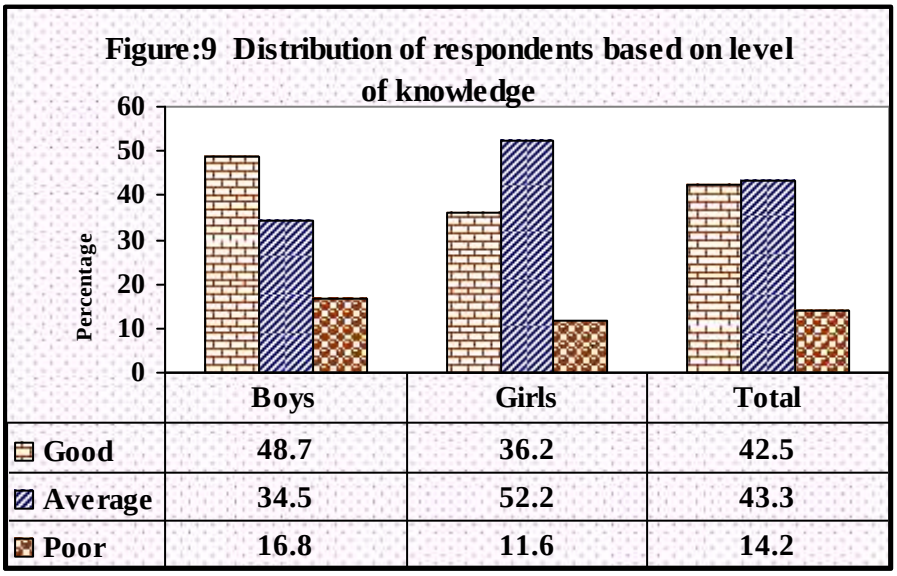


4.3 Knowledge related factor:

Knowledge on hazardous effect of Tobacco use:

Students were asked if they were aware of the harmful effects of tobacco use. Among the total respondents, adolescent (80.7%)) students claimed that they have knowledge about the bad consequence of tobacco use of tobacco use. Among the students who reported to have knowledge about the health hazards of tobacco use, (16.5%) were tobacco consumer and (83.5%) have never used any form of tobacco product.

As mentioned in the questionnaire, Adolescent student were asked to report the bad effect of tobacco use. Among those who mentioned the effects, (42.5%) reported two or more hazardous effects (respiratory problem like Asthma, Cough /Heart disease, mouth ulcer and or Cancer).43.3% of the respondent mentioned only one hazard (i.e. cancer or heart disease or Asthma). Some of the students reported that bad effect like bad smelling, teeth problem etc.



	Boys	Girls	Total
Good	48.7	36.2	42.5
Average	34.5	52.2	43.3
Poor	16.8	11.6	14.2

Regarding the level of knowledge on bad consequences of tobacco use those who reported two or more than two hazardous effect (42.5%) are categorized as have Good Knowledge. The majority of student (43.3%) mentioned only one hazard (Some knowledge) followed by only (14.2%) didn't reported any of the hazardous effect as Poor knowledge (Figure 10).Comparatively, among total respondent nearly half (48.7%) boys have good knowledge than that of girls(36.2%). On the other hand more than half (52.2%) of the girls have some knowledge. The proportion of poor knowledge is low in girls (11.6%) than in boys (16.8%).

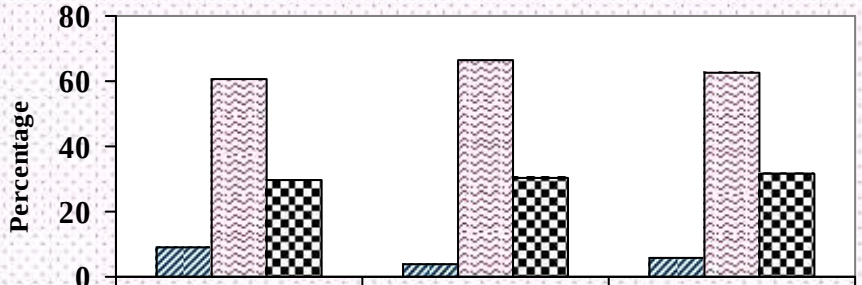
Attitude towards tobacco use:

Adolescent student were asked to open their feeling towards tobacco use (i.e. tobacco consumption is appropriate or not).Regarding this issue, among total study population, very few (5.7%) of the respondents reported tobacco consumption is appropriate. Nearly 3/4th of the total respondents were mentioned as tobacco consumption not appropriate and nearly 1/3rd (31.5%) of them were neutral on that question.

Among the tobacco consumer, (n=63), the proportion was bit different. More than 1/5th (21.2%) of boys and very few (5.6%) of girls were on the favor of the tobacco consumption.

More than half of the boys (52.7%) and nearly 3/4th (72.2%) of girls mentioned that tobacco consumption is not appropriate.

Figure: 10 Distribution of adolescent based on attitude on tobacco use



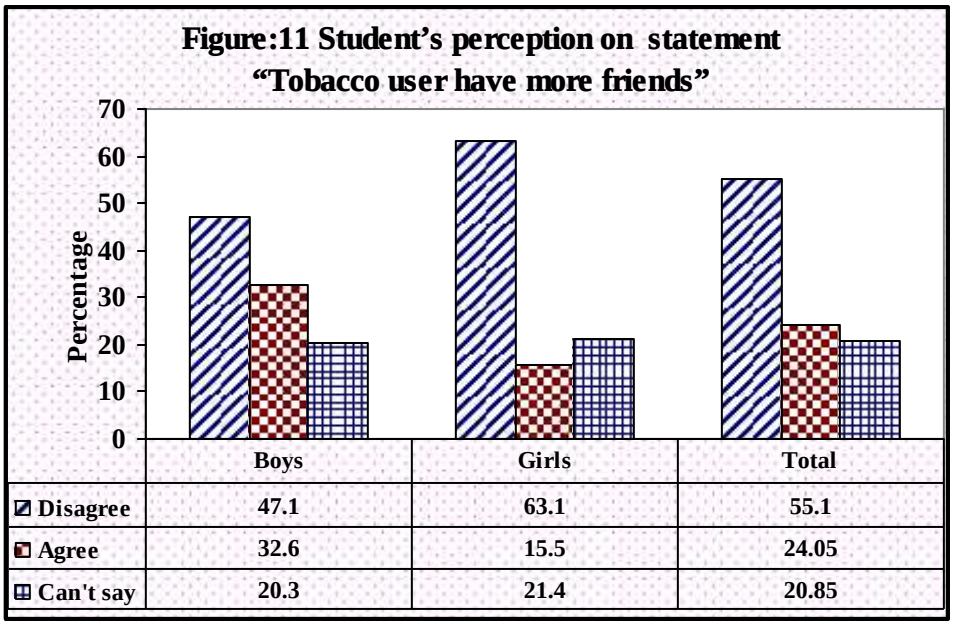
	Boys	Girls	Total
Appropirate	9.3	3.8	5.7
Not appropirate	60.9	66.5	62.8
Can't say	29.8	30.4	31.5

Perception towards tobacco use:

The perception of the adolescent student was measured in the five-point scales ranging from strongly agree to strongly disagree on the given statements. For simple analysis, strongly agree and agree were merged to agree and strongly disagree and disagree were merged to disagree. Finally, categories for analysis of perceptions were Agree, Can't say, Disagree.

More than half (55.1%) of total population expressed their view on disagree on the statement "Tobacco user have more friends" and nearly one fourth 24% of them reported agree whereas one fifth of the population can't say..

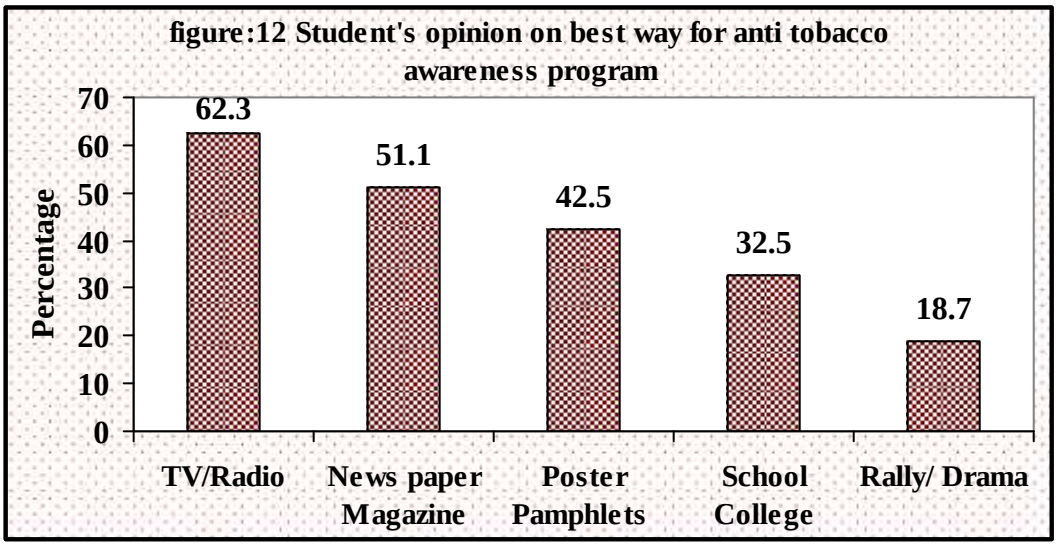
Among the tobacco user, three fourth 72.5% of students were agreed to the statement and only 12.9% of tobacco users were disagreed to the statement.



	Boys	Girls	Total
Disagree	47.1	63.1	55.1
Agree	32.6	15.5	24.05
Can't say	20.3	21.4	20.85

Student's opinion on Best way for Anti-tobacco awareness program:

Regarding the student's opinion on best media for ant tobacco awareness program, more than nearly 2/3rd (62.3%) of the respondent put their opinion that best media as TV/ Radio and more than half of them expressed their view on newspaper/ magazine followed by 42.5% for poster /pamphlet, nearly 1/3rd for (32.5%) and few of them (18.7%) on rally/drama for the anti tobacco awareness program.



4.4 Association between Socio Demographic characteristics and Tobacco consumption:

The association with demographic characteristics includes sex, age, religion, grade,

Caste/ ethnicity, type of school etc.

Sex: Regarding sex of the adolescent student, boys were 2.3 times more likely to have tobacco than girls. (21.7% and 10.4% respectively). It was highly significant with p value <0.01.

Age: From the age group of the respondent, it was seen that majority 26.9% (16-19years) of the student were tobacco user than 10.8% age group 11-15 years. Students of ages between 16-19 were more likely to have tobacco than other age group.

It was also highly significant with p value <0.01.

Religion: Majority of the respondent were tobacco consumer those who were from Hindu origin so it was compared to other religion like Buddhist, Muslim, and Christian

Caste/Ethnicity Tobacco consumption habit among different caste was statistically not significant between Brahmin/ Chhetri and other caste. The result shows majority of the adolescent were from other caste those who were tobacco user.

Grade: Majority of the tobacco user were from class 9and 10 (18.7%) as compared to class 7and 8 (13.7%)

Tobacco use habit of parents: From the information collected by student , those parents used tobacco product were more likely to have tobacco .more than one fourth of the adolescent were tobacco consumer as their parents consumed than few (17%) of non consumer .It was also highly significant (p value <0.01)

Type of school: More than one fifth (22.1%) of the tobacco user were from Government school followed by only one tenth from private school. It was seen statistically significant (p value <0.01)

Association between knowledge and Attitude to tobacco consumption:

Knowledge on bad consequence of tobacco use: The knowledge on hazardous effect of tobacco consumption was categorized into three form (poor, average and good knowledge.) as mentioned above. Adolescent student who have average /poor knowledge (those who reported one or less than two hazardous effect) were found more (17%) tobacco consumer on the other hand, than that of having good knowledge (12.3%).

Attitude toward tobacco use: Among those students who believe tobacco consumption is appropriate were more likely to have tobacco consumed as compared to those who reported tobacco consumption as not appropriate/can't say. It was statistically significant (p value <0.01

Table : 7 Association between socio demographic characteristics to tobacco consumption:

Category		Tobacco consumption		X^2 value	OR	p value
		Yes	No			
Sex	Boys	44(21.7%)	159(78.3%)	8.85	2.37	<0.01
	Girls	19(10.4%)	163(89.6%)			
Age (Years)	11-15	27(10.8%)	224(89.2%)	16.564	3.04	<0.01
	16-19	36(26.9%)	98(73.1%)			
Religion	Hindu	56(16.8%)	277(83.2%)	0.37	1.30	0.543
	Other	7(13.5%)	45(86.5%)			
Caste / Ethnicity	Brahmin &Chhetri	28(14%)	172(86%)	1.69	1.432	0.122
	Others	35(18.9%)	150(81.1%)			
Grade	7- 8	25(13.7%)	157(86.3%)	1.741	1.44	0.118
	9-10	38(18.7%)	165(81.3%)			
Tobacco user habit of Parents	Yes	46(26.7%)	126(73.3%)	24.47	4.209	< 0.01
	No/don't	17(8.0%)	196(92.0%)			

	know					
Type of school	Private	20(10.5%)	170(89.5%)	9.340	2.40	<0.01
	Government	43(22.1%)	152(77.9%)			
Involved in Organization	Yes	23(19%)	98(81%)	0.9.2	1.314	0.342
	No	40(15.2)	224(84.8%)			

Table: 8. Association between Knowledge and attitude and tobacco consumption:

Category		**Tobacco consumption**		**X^2**	**OR**	**p value**
		Yes	**No**			
Level of knowledge	**Poor /Average**	52(17%)	253(83%)	0.394	1.38	0.172
	Good	11(12.3%)	79(87.7%)			
Attitude towards tobacco use	**Appropriate**	12(60%)	8(40%)	29.351	9.23	<0.01
	Not appropriate/ Don't know	51(14%)	251(86%)			

CHAPTER V

DISSCUSSION

Tobacco use is responsible for considerable number of morbidity and mortality in the world. It is one of the most important preventable risk factor of most non-communicable diseases. The tobacco smoke contains more than 4000 substances that are detrimental to health. Among these 4000 substances, at least 43 are carcinogenic. Based on current smoking trends, tobacco will soon become the leading cause of death worldwide, causing more deaths than HIV/AIDS, maternal mortality, automobile accidents, homicide and suicide combined.[1]

This cross sectional study was carried out among the 385 students of secondary level in Kathmandu metropolitan city of Nepal. The aim of this study was conducted to assess the current status of tobacco consumption among adolescent students regarding factor influencing tobacco consumption.

Socio demographic characteristics of study population:

The study population comprises the students of age 11-19 years from the selected secondary school of Kathmandu metropolitan city of Nepal. Mean age of the respondents. Students were selected from 7, 8, 9 and 10 grade. The mean age of the student was 15.01 years and majorities (60.5 %) of the respondent were at age group 14 – 16 years. The proportion of respondent by sex was more or less same (52.7% boys and 47.3% girls). The ratio of student from private and Government was nearly 1:1(49.4% &50.6% respectively). 95.1% of total student were unmarried and very few (4.9 %) of respondents were married. It showed that marriage in teen age is less in headquarter; it may be due to the more educated family and awareness on the people of urban area.

Prevalence of tobacco use: ***complete correction***

Nearly one-fifth (16.4%) of the adolescent student were ever user of any form of tobacco use. The study was also focused on factor associated with tobacco and type of tobacco consumption. Boys were 2.37 (21.4% boys and 10.4% girls) times more likely to use tobacco product than that of girls.

Above finding is more similar with the study conducted by GYTS in Nepal. Overall 16.3 percent of the student ever used tobacco product in any form, the boys were Significantly higher than girls. Percentage, of current users of any form of tobacco product is 11.6 percent; however, the rate in the boys was significantly higher (15.3%) as compared to girls (6.4%). The overall percentage of cigarette smokers was 4.1, boys 6.3 % and girls 0.6 %, the difference was statistically significant[26.]

This finding is also similar with the research done by Niraula S.J.,(2004).[20] A cross-sectional survey of a representative sample of 2,340 female participants aged 15 years and above was conducted in Dhahran municipality of Eastern part of Nepal. The finding was that 12.9% were cigarette smokers and 14.1 % were smokeless tobacco user.

It is also resembles with the survey carried out by Global Health Professional survey (GHPS) in Nepal found more than 1 in 10 (17.4 %) dental students and about 2 in 10 (23.6%) medical students reported that they were current cigarette smokers. Among medical students, male were more likely to use chewing tobacco products than female students (19.7 % versus 6.1%).[23] The proportion of tobacco use in boys was higher than that of girls. It may be due to the more freedom given to boys.

The students of Government school were 2.4 times more likely to have tobacco products than students of private school. It may be due more leisure time ,more freedom and less discipline in Government school as compared to Private school.

Adolescent student from other community (kalwar/Newar/Gurung/Dalit) were found more than that as compared to Brahmin /Chhetri community. The difference may be due to more restrict in Brahmin /chhetri culture.

Among tobacco user high proportion (38.0%) of the respondent were occasional user, 30.2% of the respondent were regular user followed by (20.6%) past user and (11.1%) experimental user. Among boys majority (36.3%) was regular user and in girls majority was (47.4%) in occasional user.

Tobacco use habit of parents:

As per information given by students 44.7% of the parents were ever user of tobacco product. It is bit lower than the survey conducted in Nepal that 55% of Nepalese use tobacco related things, among them 48 per cent are over 15 years.[12] It is also comparable to the research done in Nepal. It showed the prevalence of tobacco use in adults was 68.4% in rural Sarlahi, 37.0% in urban Sarlahi 54.7% [13].

Factors related to tobacco consumption:

Majority (55%) of the respondent reported peer pressure as a main cause. A survey conducted in Nepal also showed students are more likely to be influenced by tobacco advertising by peer pressure.[9]

Nearly 47% of the respondent the influencing factor to have a test only. As a group adolescence is characterized by a feeling of invincibility and a sense of curiosity. Young people experiment with different behaviors without giving thought to the long-term consequences of their actions, so it may be major factor for tobacco consumption. The third factor was found easy availability of the tobacco because anybody can purchase tobacco product legally from general shop. Other influencing factor were family disharmony, tension relief etc.

Initiation of tobacco use: The mean age of initiating tobacco use was 13.24 years. The mean age for boys was 12.8 and for girl found 13.39 years. Some students reported initiation of tobacco use as early as 7 years of age and 6.3% of the respondent were started tobacco before 10 years. $1/5^{th}$ (22.2%) of ever tobacco users initiated tobacco between 10-12 years of age. The finding is nearly equal to the research done by Paudel,D.(2003).[25] That study showed the average age of initiating tobacco use was 12.64 years. Initiation of tobacco use was earlier by a few months among girls

(12.40 yrs) than boys (12.76 yrs).

The initiation of tobacco use may be influenced by different factors like peer pressure, following the parents habits, easy availability etc.

Type of tobacco product: Among the total respondent majority (10.1%) of the respondent reported that they used to take Cigarettes/Bidi and 9.9 % of them were using smokeless tobacco (Pan Masala and Gutkha) followed by using Surti and Khaini (5.2%).

This output is also resembles with the GYTS (2003)[27]. According to GYTS in Nepal, 11.2% of students had ever smoked cigarettes, 12.9% currently use any tobacco product and 9.2% currently use tobacco products other than cigarettes. i.e smokeless tobacco products like Pan Masala Gutkha Surti Khaini etc.

Knowledge on hazardous effect of tobacco use:

Among the total respondents, adolescent (80.7%)) students claimed that they have knowledge about the bad consequence of tobacco use of tobacco use. Among the students who reported to have knowledge about the health hazards of tobacco use, 16.5% were tobacco user and 83.5% never used any form of tobacco product.

This finding is bit different to the research conducted by Paudel, D. (2003)[25]

In that study among 2032 sample, (91.4%) adolescent students reported to have knowledge about the hazards of tobacco use. Among the students who reported to have knowledge about

the health hazards of tobacco use, 846 (46.5%) have ever used tobacco and 993 (53.5%) have never used tobacco. The knowledge on hazard of tobacco use was more or less same but proportion of tobacco consumption was much different. The variation may be due to sample size and place.

Perception toward tobacco use:

More than half (55.1%) of total population expressed their view on disagree on the statement "Tobacco user have more friends" and nearly one fourth 24% of them reported agree. This finding is also resemble with the research conducted by GYTS[27].According to that research, 48.8% of boys and 28.9% of girls who smoke tobacco have more friends.

CHAPTER VI

CONCLUSION AND RECOMMENDATION

6.1 Conclusion:

This cross-sectional study of tobacco use among adolescent students of Sarlahi District explored their tobacco consumption behavior, knowledge on hazardous effect and influencing factors for initiating tobacco use. The above finding explored the current status of tobacco consumption among adolescent student.

The overall prevalence of the tobacco was seen 16.4% for any type of tobacco product. The prevalence of tobacco consumption was 21.7% among boys and lower (10.4%) in girls. Among ever user, more than 2/3rd (69.8 %) of the student were boys and only 30.2% were girls. The overall prevalence was significantly higher in student of government school than private school. The prevalence increased with age for both sexes. Among tobacco user, there was a large proportion (41.0%) of occasional user. Among boys majority (36.3%) were regular user and in girls majority was (47.4%) in occasional user.

Most of the ever-users initiated tobacco use by 13.24 years of age (for boys 12.8 and for girl found 13.39 years) and 6.3% of the respondent were started tobacco before 10 years. More than One-fifth (22.2%) of ever tobacco users initiated tobacco between 10-12 years of age.

The main cause of the tobacco initiation was peer pressure. More than half (55%) of the student reported initiating factor as peer pressure. Nearly 47% of the respondent noted to have a test only. Tobacco use by parents was also influencing factors for tobacco use of adolescent students. A substantial proportion of adolescent students were exposed to the tobacco use behavior of parents.

Regarding the level of knowledge on bad consequences of tobacco use, it was satisfactorily. (42.5%) were categorized as have good knowledge. majority (43.3%) were seen to have

average knowledge and only (14.2%) were found poor knowledge on hazardous effect of tobacco use. The existence of wrong perception of school students about tobacco use was also evident from the findings. Nearly one fourth 24% of student reported agree toward the statement “Tobacco user have more friends”. Among ever user, nearly three fourth 72.5% agreed to the statement and only 12.9% disagreed to the statement. Those students who belief tobacco consumption is appropriate were more likely to have tobacco consumed as compared to those who reported tobacco consumption as not appropriate/can’t say.

Form above finding adolescent student initiated tobacco not only by peer pressure but also by exposed to the parents. Starting tobacco from childhood increases the risk of addiction to tobacco related things. There is increasing resistance to advertisement in the developed world but the young adolescents in the developing countries are more vulnerable. Adolescent students have knowledge on hazardous effect of tobacco use although they are still using tobacco product, it may be due to low awareness level and lack of positive attitude to their own health. Another reason may be that they are following the fashionable world.

6.2 Recommendation:

Recommendation based on study finding:

- ⇨ Prohibiting tobacco use at school and other public places and monitoring the high-risk behaviors of adolescents in school is necessary.
- ⇨ Health education programs and parents counseling should be provided to adolescent students to raise the level of awareness of the hazards of tobacco use and to change their perceptions.

- ⇨ A national level research is necessary to find out the current status on tobacco consumption targeting adolescent student.

Recommendations for program implication:

- ⇨ By announcing schools and other public places as tobacco-free places will help to minimize the exposure to tobacco. It also helps to change social norms and ultimately to minimize the use of tobacco
- ⇨ School based educational programs focusing on all forms of tobacco (both smoked and smokeless) should be planned and implemented.
- ⇨ Behavior change communication (BCC) and Peer Education Program (PEP) should be started by focusing the target group.
- ⇨ There is a need for strong anti-tobacco legislation and strict implementation of the legislation to ban tobacco smoking in public places.

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APPENDIX A

INFORMED CONSENT

I, Mr./Mrs./Miss..... have read or have had read out for me all the statements in the consent form and I do here by agree to voluntarily participate as a subject in the study on "**Current Status of Tobacco consumption and its Socio-Economic impact among the Adolescent Students of Sarlahi, Nepal"**

I have understood that it is a research work for the benefit of college student. I have clear idea of this research including its purpose, duration, and the procedures to be followed. I have understood that all information will be kept confidential. My name will not be published in the study report and I will not be entertained with any financial benefits or incentives.

I have been given opportunity to ask questions concerning research procedures and for further questions I may contact the research workers. I have also been given information on the risk and discomforts for participating in this research.

I understood that I have the right to leave or cancel my consent and withdraw myself from the study at any time for any reason without penalty. I have been informed that I shall be given a copy of the signed consent to keep.

I, the undersigned, certify that I have signed this document willingly to participate in the said research work myself or in presence of the following witness.

.....	.....
Volunteer signature	Witness signature
Name:	Name:
Address:	Address:
Date:	Date:

Investigator's signature

APPENDIX B

BIRENDRANAGAR MULTIPLE CAMPUS, BIRENDRANAGAR

DEPARTMENT OF SOCIOLOGY/ANTHROPOLOGY

DATA COLLECTION FORM

QUESTIONNAIRE

Dear participants,

I am **Bachcha Lal Mahto**, a Postgraduate student of **Birendranagar Multiple Campus, Surkhet**. As a part of my course, I am conducting a research. My research topic is **"Current status of Tobacco consumption and its Socio-Economic impact among the Adolescent students of Sarlahi, Nepal".** This is purely **academic**. I would like to ask you some questions related to this topic. Please know that all information provided by you will be kept strictly confidential, it will be used only for research purposes. I will be highly obliged if you co-operate me in answering these questions. Thank you in advanced.

SECTION I: SOCIO DEMOGRAPHIC INFORMATION

1. Age: ……years

2. Sex:

1. Male
2. Female

3. Marital Status:

1. Married
2. Unmarried

4. What is your religion?

1. Hindu 2. Buddhist

3. Islam 4. Christian

5. Other (specify)……..

5. What is your Cste/ Ethnicity?

1. Brahmin 2. Chhetri

3. Newar 4. Gurung /Magar

5. Rai/Limbu 6. Dalit

7. Other

6. What is your Education status? Please specify your class …….

7. What is your Education status of Father?

1. Illiterate 2. Literate

3. Primary education 4. Secondary education

5. College or above 6.Other (specify) ……..

8. What is your Education status of Mother?

1. Illiterate 2. Literate

3. Primary education 4. Secondary education

5. College or above 6.Other (specify) …….

9. Family type

1. Nuclear 2.Joint

10. Number of person in family ……..

11. Family income (monthly)……..

SECTION II: FACTOR RELATED TO TOBACCO CONSUMPTION

12. How is your relationship with your family member?

1. Friendly 2. Fair

3.Quarrelsome

13. Do you spend your own money on use of tobacco consumption?

1. Yes 2.No

14. If yes, how much money do you spend on use of tobacco consumption per month?

…….

15. Do you know/heard about Tobacco? (If no go question no.28)

1. Yes

2. No

16. If yes, which of the following have you heard?

1. Cigarette 2. Bidi

3. Khaini 4. Surti 5. Gudkha

6. Hukka / Chilim 7. Other (specify)…….

17. How did you know about Tobacco?

1. Friend/peer 2. TV/Radio

3. Family 4. Newspaper

5. Other (specify)…….

18. Do your Parents consume tobacco?

1. Yes

2. No (If no go question no.20)

19. If yes, which of following they used to take?

1. Cigarette 2. Bidi

3. Khaini 4. Surti 5. Gudkha

6. Hukka / Chilim 7. Other (specify)…….

20. Have you ever take any form of tobacco?

1. Yes

2. No (If no go question no.28)

21. If yes, how frequently do you consume the tobacco product?

1. Regularly 2.Occasionally

3. Past user 4.Other

22. Which of the following did you take?

1. Cigarette/ Bidi 2. Khaini/Surti

5. Gudkha 6. Hukka / Chilim

7. Other (specify)…….

23. How do you get tobacco?

1. Friend/peer 2. Pan Pasal

3. Family 4. General Shop

5. Other (specify)…….

24. Why did you start to take tobacco?

1. To have a test only 2. To relief tension

3. Frustration on study 4. Family disharmony

5.. peer pressure 6. Easy availability

7. Other (specify)…….

25. How old were you when you first tried to take any tobacco product?

……years.

26. How many times have you taken per day?

1. One 2. Two to five

3. Six to Ten 4. More than ten

27. Are you willing to quite your habit?

1. Yes

2. No

SECTION II: KNOWLEDGE AND ATITUDE FACTOR

28. Did you know /hear about consequences of tobacco?

1. Yes

2. No (If no go question no.30)

29. If yes, what are the consequences of tobacco?

1. Circulatory /Heart disease 2. Respiratory disease / lung disease

3. Shortness of breath 4. Mouth ulcer

5. Cancer 6. Other (specify)…….

SECTION: IV IEC RELATED FACTOR

30. Would you like to contribute anti-tobacco awareness programs?

1. Yes

2. No

31. In your opinion, how to contribute anti-tobacco awareness programs?

1. TV/Radio 2. Newspaper /Magazine

3. Poster/Pamphlet 4. School/college

5. Other(specify)…….

32. In your opinion, is tobacco consumption is appropriate?

1. Appropriate 2. Not appropriate

3. Don't know

33. Provide your perception on following statement;

"Tobacco users have more friends"

1. Strongly agree 2. Agree

3. Can't say 4. Disagree

5. Strongly disagree.

….THANKS FOR YOUR KIND COOPERATION….