CHAPTER: I
INTRODUCTION

1.1 Background of the Study

Tobacco is one of the leading eight causes of death in the world. Tobacco is the largest agent killing 100 million people in 20th century and it is estimated that around eight million people will die of tobacco every year 2030 A.D. accounting for one death every three seconds. Eighty per cent of the people among estimated eight million to die by 2030 likely will belong to the developing countries. It is also predicted that tobacco will be one of the major causes both for mortality as well as disability adjusted life years (DALY) in the 21st century. Most of the smokers begin smoking by early adolescents and generally continue smoking in adult life also. Most of the chronic adverse health effects may take three to four decades for a full manifestation. As a result, those who continue smoking have a 50% chance of dying from tobacco-related disease, and regular smokers have about three time's higher death rate than non-smokers at all ages (from young adulthood). (WHO 2008)

Worldwide, tobacco consumption is not just one of the leading cause of preventable deaths (accounting for more than seven million deaths per year or one death every second) its global economic burden is estimated to be around 1.4 trillion US Dollars together with lost productivity (WHO). In 2015, more than 1.1 billion people smoked tobacco; and rate of smoking in WHO Eastern Mediterranean Region and African Regions is said to be on the rise. Around 22% of the 15 years and old persons worldwide are reported to be current smokers. Male generally smoked more than the female (WHO, 2015).

Nicotine has been consumed in many forms; chewing (e.g. Khaini, Paan, Gutkha), smoking (e.g. self-prepared bidi from leaves in rural areas of Nepal, commercial bidi, filtered and non-filtered cigarettes, hookah) and lately nicotine patches, lozenges or chewing gums as replacement therapy. Mostly, people use as a recreational drug in the beginning and become habitual in later part of their consumption. It is widely available throughout the country and most of them probably learn to use it from their surroundings. From the beginning of the human history nicotine use has existed side by side. However, its negative consequences on health began to come to notice after the publication of medical dangers of tobacco by Benjamin Rush in 1798.

In Nepal, between 2009 and 2010 around 2491 tonnes of tobacco leaf were produced; and cigarette production increased from 9970 million sticks in 2006-2007 to 11130 million sticks in 2008-2009. Prevalence of tobacco use or smoking in Nepal was reported to be 56.5% in men and 19.5% in women (NDHS, 2006). This is higher than in other countries. The 2007 survey carried out by World Health Organization (STEPS) showed that the prevalence of smoking among adult females in Nepal was 15%, which is one of the highest in the World Health Organization South-East-Asia Region. Poor and illiterate sections of the society are more affected by tobacco use. Eighty six per cent of male smokers and 52% of female smokers smoked manufactured cigarettes. (WHO STEPS Survey 2007).

As an active participant in Global Tobacco Surveillance System (GTSS), Nepal conducted three major studies; Global Youth Tobacco Survey in 2007 (GYTS, 2007), Global School Personnel Surveys in 2007 (GSPS, 2007), and Global Health Professions Students' Survey in 2006 (GHPSS, 2006). The Global Health Professions Students' survey showed that 17.4% of dental and 23.7% of medical students were smoking cigarettes actively. Around one third of the 434 third students surveyed from three dental and five medical students used other tobacco products as well besides smoking. The Global Youth Tobacco Survey was a cross-sectioned study carried out in 49 sampled secondary schools among the students aged 13-15 years using the global standard protocol. This study reported that 5.7% of the boys smoked cigarettes and 1.9% of girls smoked cigarettes respectively. Besides smoking cigarettes, 15.5% used other tobacco products. Additionally, students were exposed to second-hand-smoke at home (35.3%), in public places (47.3%) and more than half of the students asserted that smoking should be banned from public places. The Global School Personnel Survey was conducted in the same schools in which GYTS was conducted and this study all personnel of the schools were eligible participants. This survey revealed that 37.7% smoked cigarettes ever in their lives, 17.5% smoked bidi ever in their lives ad 26.8% chewed tobacco ever in their lives respectively.

In Nepal, among the total population of 26.6 million there are 6.4 million adolescents (which make up about 24% of the total population) as per census done in 2011. People aged 15 years to 24 years are 5.3 million accounting for 20% of the total population. The annual population growth rate was estimated around 1.4%. More than

83% of the total population lived in rural area. The average household size was 4.7. The crude birth rate was 22.17 and the crude death rate 6.8% per thousand populations. Life expectancy at birth was 64.1 years (64.5 years for females and 6.3 years for male).

In our neighbouring countries, the age-standardized prevalence of current smoking in male (15 years and older) in 2015 is more than the world figure (22%) except in India where it is are ported to be 20.4%. Pakistan and China have prevalence of 41.9% and 47.6%. In Nepal it is reported to be around 37.1% (WHO).

Nepal is also a party to the World Health Organisation Framework Convention on Tobacco Control (WHO FCTC). In accordance to its requirement, Nepal also has adopted the following policies: Pictorial warnings in tobacco product package, establishment of a tobacco control ad regulatory committee, prohibition of sale of tobacco to and by minors, prohibition of smoking in public places, ban on all forms of tobacco advertisement (promotion or sponsorship) etc. Likewise, Nepal has been trying to follow the tobacco control activities like MPOWER policy of World Health Organisation. MPOWER is a policy package to reverse the tobacco epidemic and it stands for: Monitor tobacco use and prevention policies; Protect people from tobacco smoke; Offer help to quit tobacco use; Warn about the dangers of tobacco; Enforce bans on tobacco advertising and promotion; and Raise taxes on tobacco products. (Brief Profile on Tobacco Control in Nepal, Ministry of Health and Population, Government of Nepal)

Adolescence is a period of vulnerability to start smoking cigarettes or other recreational substances of abuse. The term adolescence refers to individuals between ten to nineteen years of age (WHO). It is a time of hormonal surge, more affiliation with the peers and a transitional phase from dependence to independence. There are many kinds of changes that happen including physical, mental, physiological or emotional. There is a growing recognition that because of a combination of biological, psychological, and social factors adolescents face many challenges and health risks such as unprotected sex, accidents, violence and as well as substance abuse including cigarette smoking. According to Census of Nepal (2011), there are 6.4 million adolescents, making up about 24% of the total population. Therefore, it is important that studies related to adolescents should regularly happen as a need to control tobacco or other preventive aspects.

1.2 Statement of the Problem:

Smoking is a big problem in adolescent worldwide including Nepal. Smoking is known to negatively affect many aspects of the health, academic performance, self-esteem, cost etc. There are data about its prevalence in the world and few data in Nepal but published literature from Itahari could not be found. Research findings show some consistent and some inconsistent findings. Broadly in age ranges there is consistency, however, some of the areas of inconsistencies are: some study points towards maternal role more (some paternal), discrepancies in the initiation of smoking or factors cited for use, prevalence of smoking etc. Findings from the local setting are important for planning effectively at a local level. Furthermore, level of dependence is still not extensively discussed in the literature, and from Nepal in these targeted students published studies could not be obtained. So, it is hoped that this study would serve as the baseline data about the prevalence of ever-smoker and current-smokers, the mean age of initiation of smoking, and association of exposure (at home/school/peers) with status of smoking in public high schools of Itahari.

1.3 Objectives of the Study:

Objectives of any study are one of the key elements in research as many things are described, identified, investigated or evaluated around it. The objectives of a study are related to the main research questions asked. Objectives can be general objective and specific objectives. The general objectives broadly summarize the prospects of the study in general terms and specific objectives follow logically from general objectives, which is measurable and realistic. The general objective of this thesis is to study the prevalence of smoking in secondary students in public secondary schools in Itahari with risk factors and dependence level in this population. The specific objectives of this thesis are outlined below.

1. To determine the prevalence of ever-smoking and current-smoking in public secondary school students in Itahari
2. To determine the mean age of initiation of smoking in these students
3. To study the factors (parental/siblings/teachers/peer smoking) and level of dependence of smoking

1.4 Significance of the Study:

The Significance of this study can be stated as follows:

1. This study will give a baseline data about few selected variables about smoking in public secondary school students and additionally give a percentage of the students who have a dependence on tobacco consumption.
2. This information will help to observe the similarities and differences in smoking behaviour from other places and guide us as a pilot study to plan tobacco control activities in future.
4. Furthermore, it may help to compare the findings from Itahari to findings from other places.

1.5 Delimitation of the Study:

The study is mainly focused in Itahari timed, area, financial aspect and research materials are marked based on the research. The limitations of the study are on follows:

1. First and foremost, it is a cross-sectional study limiting its usefulness with regards to causation links.
2. It has not covered all the possible students to be represented in the sample because those students who would be absent on the day of data collection was not enrolled.
3. For this type of study, the sample size is small. All the relevant factors for the risk of smoking have not been included.
4. Participants were selected from 11 & 12 students of five public secondary schools:

a) Janta secondary school, Itahari
b) Janasahayog secondary school, Tarahara
c) Rastiya secondary school, Aapgaachi
d) Mahendra secondary school, Tarahara

e) Sharda secondary school, Khanar

1.6 Operational Definition of Key Terms:

Smoking: Inhalation of bidi or cigarette

Current-Smokers: Those 11 & 12 students who have smoked in the last one month (any amount)

Ever-Smokers: Those 11 & 12 students who has smoked ever in their life time

Dependent-Smokers: As per the Fagerstorm Test, who score five or more.

PSSS: Public secondary school students; those students in public school who are studying in class 11 and class 12

CHAPTER: II

REVIEW OF RELATED LITERATURE

Review of literature literally means understanding the knowledge from its inception, evolution and current concepts in the identified problem together with the methods by which the knowledge was generated. Through literature review we come to know what is known in the field, what is well established, and what are the areas of inconsistencies or inconclusiveness in the field? If something is well known and established there is no need to conduct in the same areas, for example, cigarette smoking significantly increases the chances of cancer. Review of literature also informs us where there is deficiency or controversy or what is still not known, and hence it helps to find the useful area to be researched. It also helps to familiarize the investigator with different methodologies used in the past with its merits and demerits as well as it also might indicate what methodologies need to be used to generate the evidence to the required level. The literature review in this thesis highlight briefly about the historical aspect of the medical aspect of smoking, smoking in adolescence, theoretical literature on smoking, empirical studies on smoking around the globe in secondary students, and studies on smoking from Nepal.

2.1 Theoretical Literature:

The history of smoking probably begins from the antiquity, however, Benjamin Rush, who was a United States physician, first published the medical dangers of tobacco in 1798. By 1960s, there were enough evidences that tobacco use, or smoking causes multiple health harms. The rise of smoking in the beginning of 20th century has been attributed to promotion of tobacco by companies or influencing the policies through politicians and giving free cigarettes to army personnel as a moral boost. It is reported to be declining subsequently because of awareness in people of both health hazards as well as misleading information by the tobacco companies, and subsequent law-suits against them (Cancer Counsil).

World Health Organization (WHO) defines adolescence as a period from 10-19 years of age. This period is neither childhood nor adulthood. There is some maturity compared with earlier phase however full maturity, responsibility, defined roles, control issues, peer pressure etc. are of special importance. Well handled, they have a potential to be a fully responsible and mentally healthy individual and if gone astray,

it can also impair the future development. This is also the period when most adolescents experiment drugs including smoking (UNICEF).

This is based on the theoretical literature provided by the Flay, Petraitis & Hu (1999). It states that any behaviour, including smoking of cigarette, arises in a broad cultural or social environment with an immediate context where the tendency of the person in that given situation to perform a certain kind of behaviour and the nature of the behaviour itself all interact among themselves. All social, attitudinal and intrapersonal factors may influence at *immediate level* (decision or intention to smoke or trial to smoke), *proximal level* (beliefs in society about normalcy of smoking, belief about advantage/disadvantage of smoking, or belief about oneself to be able to avoid smoking), *distal level* (more attachment to peer group who smoke than to family, less commitment to conventional values like religion or social alienation, low self-esteem) and *ultimate level* (lack of parental warmth or supervision, negative evaluation from teachers or influence of media, genetic susceptibility or emotional instability). Social factors may include strain at home or parental separation, negative evaluation from parents, unconventional values among peers etc. Attitudinal factors may include the norms in the neighbourhood or in peers, media and advertising depictions of smoking, low tobacco taxes etc. Intrapersonal factors may include genetic susceptibility, lack of impulse control, risk-taking behaviour, and looking for sensations mostly, external locus of control etc. Reviewing the literature, the authors have proposed this 'Theory of Triadic Influence' emphasizing a need to look at all these factors more comprehensively and have pointed out the major limitations in the theories of smoking. In their own words, "Most theories and cross-sectional, prospective, and casual process studies have contained major limitations: a) most addressed only small portions of the total picture; b) most mediator studies did not test for interactions and most moderation studies are based on limited theory; and c) most theories did not discuss how the causal processes might be different for males and females or for different ethnic groups."

2.2 Empirical Literature:

Jamal et al. (2017) reported 20.2% high school students surveyed from 2011-2016 were tobacco users and 47.2% of the high school students used more than two types of tobacco. In Poland, the rates of tobacco smoking rose from 15% in 2009 to 24% in 2011 among secondary school students; and for many the initiation of smoking was

between 12-15 years (Wojtyła-Buciora et al., 2017).

In Sri Lanka, 19% ever use of tobacco and 10% of smoking (with prevalence of current smoking by 16% male and 1% female) was reported by students in a survey of 390 students among nine schools. This study further stated that current smoking status was independently associated with gender and presence of smoker at home (De Silva & Ekanayake, 2017).

In Greece, 927 high school students between the ages of 15-18 years were examined using a questionnaire. The mean age of initiation of smoking was 14.4 (± 1.9) years for boys and 14.9 (± 1.6) years for girls. Nearly one third of boys and slightly more than one fourth of girls were smokers. Social standard and parental smoking were cited as main determinants of smoking (Heras, Kritikos, Hatzopoulos, Kritikos, & Mitsibounas, 2008).

In Saudi Arab, among 819 high school students aged more than 15 years, 20% were current smokers; mean age of starting smoking was 13.8 years; and influence of friends (58%) as well as having a smoker in the family were two important factors that influenced the rate of smoking. Among current users, 61% had tried to quit but were not successful (Wojtyła-Buciora et al., 2017).

Olumide et al. (2014) studied the predictors of substance use among vulnerable adolescents (aged 15-19 years) in five cities who were in vulnerable environments (n=2332). Prevalence of current cigarette smoking was 32.5% in Johannesburg versus 3.7% in Delhi. Mean age of first use of cigarette was 14.4 (± 2) years. Adolescents who were not going to school were more likely to be current smokers. In Johannesburg, adolescents currently working for pocket money, absence of a father figure, and higher peer support were associated with current smoking. In Shanghai and Baltimore, low scores for caring mother figure predicted cigarette use.

In Zimbabwe, among 650 students with mean age of 16 years, multivariate analysis showed that smoking was statistically associated with friends smoking cigarette, being involved in physical fights, alcohol use, marijuana use and having a sexual intercourse. Other findings were: most of the students started smoking before 13 years of age, Asians students had less prevalence of smoking compared with Caucasian & African origin, and prevalence of ever-smoking was more in private school students compared with government school students in age groups 16-19

years; however, in age groups between 13-15 years, prevalence of ever-smoking in government school was more (40%) compared with private schools (17%) (Bandason & Rusakaniko, 2010).

In India, a cross-sectional school-based study done among 4786 students, it was said that the chances of tobacco use were significantly increased if someone used tobacco at home or by friends; and if the student were involved in buying tobacco for teachers, brothers, father/relatives, there would be nearly 11-fold, six-fold and three-fold increased chance of using tobacco by that student respectively (Narain, Sardana, Gupta, & Sehgal, 2013). Mahalakshmi (2015) conducted a cross-sectional study on knowledge on harmful effects of tobacco use among 100 school going adolescents at rural areas of Tiruvallur district of India. It showed that knowledge score was higher in females and belonging to nuclear family, 4.3% ever smoked tobacco and higher intake of tobacco with a history of parental tobacco use.

In China, Zhang, Wang, Zhao, & Vartiainen (2000) found that smoking onset was most prevalent at 10-14 years of age and it increased with increasing age. It was done among students of 10-19 years of age (n= 3519) students in four secondary schools in Henan region using a self-reported questionnaire. It also listed having peers, teacher and mothers' smoking were significantly associated with likelihood of tobacco use.

Associated risk factors for initiation or continuation of smoking has been reported by other studies as well: Parental smoking, peer smoking and marketing strategies by tobacco companies (Gupta, Sharma, Thakur, Thakur, & Mazta, 2014); (in adults) Male gender, Bramhan and Chhetri Caste, lack of education, occupation like farming, poor socioeconomic status (Sah, Pradhan, Subedi, Karki, & Jha, 2016); Authoritarian and unsupervised parenting (Thomas, Baker, & Lorenzetti, 2007); and smoking scenes in motion pictures (Sohn & Jung, 2017).Sabnis et al. (2016) suggested that students from urban areas has increased prevalence of smoking compared with the students from rural area, however, students from rural areas seemed to use more smokeless tobacco than the students from urban areas.

Studies from Nepal

Nepal was a signatory in February 5, 2007 to the WHO Framework Convention on Tobacco Control. Under this framework, Nepal has prohibited smoking in public places, has implemented the policy of covering 90% of most of the areas in tobacco

packaging and labelling, passed the 'The Tobacco Product Act 2010'etc (Nepal Details - Tobacco Control Laws). Under the MPOWER programme, monitoring of the use of tobacco is also the primary objective. Several studies can be considered taking place within this framework (MoHP Ministry of Health and Population, 2008).

"A smoker in Nepal would have to spend 3.6% of the national median income to purchase 10 of the cheapest cigarettes to smoke each day." About 36.6% of men and 16.7% of female smoke in Nepal; 5.5 % of boys and 0.8% of girls smoke cigarettes in Nepal; and 10.7% of men and 9% of women die in Nepal due to tobacco (THE TOBACCO ATLAS).

Uprety et al. (2014) conducted a cross-sectional study in two village development committees in Jhapa among 200 participants with a semi-structured questionnaire. It revealed that 63% of the participants started smoking between 10-19 years of age; males, illiterate, unemployed and those people who were below poverty line were more than otherwise. Kabir & Goh (2014) studied a comparative study in Nepal and Sri Lanka regarding the determinants of tobacco use in students aged between 13-15 years. In Nepal, the average age of initiation of smoking was 10.2 years. Individual characteristics, friends using tobacco, having someone smoke at home or public places, free tobacco products and lessons about negative effects of tobacco use was significantly associated with tobacco use. Dahal, Subedi, Maharjan, & Maharjan (2014) conducted a study in three randomly selected colleges of Kathmandu district in adolescents regarding smoking behaviour and their view towards government's ban on smoking in public places. It was reported that 22% were ever-smokers. Those who received more amounts of pocket money, poor academic performance, frequent dispute with teachers and having a family member as a smoker were ever-smokers. Positive view about smoking and negative about smoking significantly associated with smoking or not smoking respectively. Dahal, Maharjan, Subedi,& Maharjan (2015) studied the role of media provoking cigarette smoking among adolescents in urban Nepal. It was done in 394 adolescent students in three randomly selected colleges of Kathmandu. Seeing cigarettes advertisement, reading fashion magazine, attending musical programmed sponsored by tobacco companies, watching movies in cinema hall, liking heavy metal music, watching television and desire to smoke if favourite artists smoke were statistically significantly associated with smoking status.

Overall, there are more of cross-sectional studies using self-administered

questionnaire, with few longitudinal studies and very few reviews.

2.3 Implication of Literature Review:

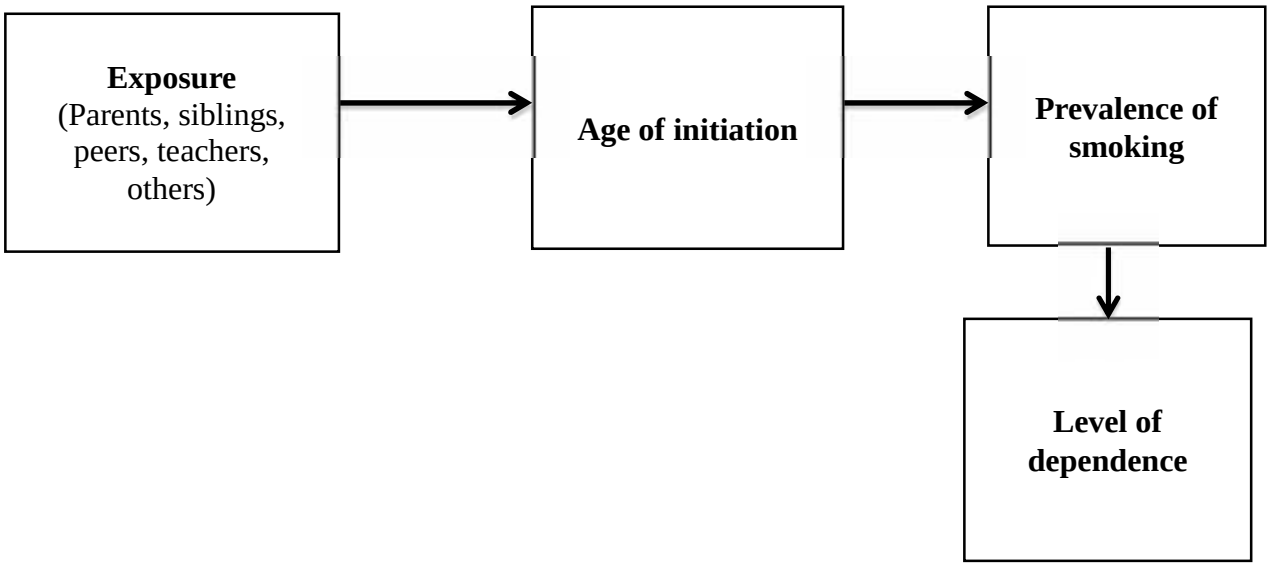
Reviewing the literature is a continuous process. It begins before a research problem is finalized and continues until the report is finished. Literature review helps to formulate the research problem. Reviewing the literature involves number of steps: searching for existing literature in study area, reviewing the selected literature, using it to develop theoretical frame work for investigation. Overall the implication of literature review can be stated as:

i. It provides theoretical background for the study.
ii. It enables to contextualise the findings in existing problems.
iii. It helps to bring clarity and focus to research problem.
iv. It improves research methodology.

So, the literature reviewed should be thematic in nature, that is based on main themes, the sequence of these themes in the write-up should follow a logical progression.

2.4 Conceptual Framework

A study has some basis on which it is done. Mostly, it is based on certain theories or theoretical frameworks. Health related behaviours, social and organizational aspect of the study in which how an individual, society, and health systems interact are generally based on the theoretical framework of the Health Belief Model. Health Belief Model also can different theories under it specific to the studied problems. A conceptual framework is usually drawn from certain theories to suit the nature of the study in consideration. It differs from methodology in that theoretical framework is more related to the ways of gaining knowledge whereas methodology is more about the process of conducting the research per se. This study is partially based on the theoretical literature provided by Flay, Petris and Hu (1999).



In this study, main emphasis is put on the exposure of smoking either at home or at school. The mean age of smoking of cigarette smoking was also be noted. The prevalence of ever smoking as well as the prevalence of current smoking was recorded. The level of dependence was obtained from a simple, reliable and valid tool, the Fagerstorm Nicotine Dependence Test. The population was the 11& 12 students of public secondary school in Itahari.

CHAPTER: III

RESEARCH METHODOLOGY

Research methodology comprises of overall plan of conducting the research and it tries to solve in a systematic way. Broadly, research methodology may be qualitative or quantitative. The qualitative studies are generally done to explore certain problems, explain quantitative data, perception and thinking of human beings etc. and are usually expressed textually or verbally. Quantitative research may also be observational or experimental and further statistical analysis is usually possible in such type of studies. The quantitative research give quantitative data and are usually expressed as numbers or categories. The present study is an observational (quantitative) study to find the baseline characteristics of students in public secondary schools and has both numerical as well as categorical variables. The research methodology of this study has been described in the following headings.

3.1 Design and Method of Study

A research design is a plan, structure and strategy of investigation so conceived as to obtain answers to research questions or problems. The plan is the complete scheme or programme of the research. It includes outlines of what the researchers was from writing the hypothesis and their operations to the final analysis of data.

So, this research was designed to carry out on the basis of cross sectional and descriptive type of research method to identify the condition of smoking in school students regarding decision making of the life.

3.2 Population of the Study

This study was conducted in 200 students of public secondary schools in Itahari, Janta secondary school Itahari, Rastriya secondary school Aapgachhi, Janasahayog secondary school Tarahara, Mahendra secondary school Tarahara, Sharada secondary school Khanar.

3.3 Sampling Procedure and Strategy

Among seven public secondary schools with classes in Itahari, five of the schools were randomly selected with lottery method. Among those five randomly selected, one among eleven classes (minimum of twenty students) and one among twelve classes (minimum of twenty students) was again randomly selected through lottery

method. The researcher approached principals of the selected five schools with information about the research and request for the permission to conduct the study; all the queries answered. After permission from the school authorities, researcher was approach all 11 & 12 classes as selected by the lottery method. Each class was briefed about the study and also be told about the voluntary nature of participation as well as provision of confidentiality. Informed verbal consent was taken from the participants. Approval from the college would be taken prior to undertaking of the research in different schools.

3.4 Data Collection Tools and Techniques

Two Self-reporting questionnaires used. One contain the socio demographic variables (except name) and questions pertaining to the exposure of smoking by the students. Second tool was Fragerstrom Test for Nicotine Dependence for smoking.

3.5 Data Collection Procedures

After taking permission for research and allotment of each class in rotation, the researcher was again explaining about the study to the participating students (including confidentiality). The questionnaires would be distributed to the students giving half an hour time. Authorities from school during the questionnaire filling and collection time would be requested to be out of the classroom so that participants can write without fear.

3.6 Data Analysis and Interpretation Procedures

All the data in questionnaires was transferred to Microsoft Excel Sheet, which in turn would be transferred to Statistical Package for Social Sciences (SPSS 11.5 version) software. Mean age of initiation of smoking and frequency of different exposure risk factors was calculated. The association of parental smoking/sibling smoking/teacher smoking/peers smoking with current smoking and was calculated.

Fagerstrom Test for Nicotine Dependence (FTND)

This screening tool has been used in many researches in people who regularly consume tobacco because of its ease of using and it has a reliability of 0.88. It contains six items. This is a self-administered scale and anyone who can read or write can easily apply it. It gives a score between 0-10. The score of 0-2 is labelled as very low dependence, 3-4 is labelled as low dependence, 5 as medium dependence,

6-7 as high dependence, and 8-10 as very high dependence. It gives a tentative idea about who needs immediate help. It has been attached in the **APPENDIX II**.

CHAPTER – IV

ANALYSIS AND INTERPRETATION OF DATA

In this chapter details with the analysis and interpretation of data, which had been collected from field survey are tabulated in different titles and are analyzed and interpreted on the basis of percentage to make the presentation more clear and meaningful.

4.1 Ever smoking, current smoking and 1st cigarette smoking

4.1.1 Ever – Smoking by students

The habit of smoking begins with the first puff of smoke one takes and it was important to find out how many students had ever-tried to smoke.

Table No. 1: Ever smoking by students

Ever-Smoking	No. of student	Percentage
Yes	33	16.5
No	167	83.5
Total	200	100

Table 1 shows that among 200 students of 11th and 12th classes, 33 students (16.5%) tried smoking in lifetime and majority (83.5%) did not.

4.1.2 Current smokers among students

Among those who ever-tried smoking during their lives, some may continue smoking and some may discontinue. Students who continue will have more negative health consequences compared with who quit after tasting it.

Table No. 2: Current smokers among students

Current Smokers	No. of student	Percent
Yes	29	14.5
No	171	85.5
Total	200	100

Table 2 shows that among 200 students, 29 students (14.5%) smoked cigarettes in last month. Around 86% did not smoke in last one month.

4.1.3 Age of 1st smoking by students

Earlier the age of first smoking more likely for that students to continue smoking as a habit later in life.

Table No.3: Age of 1st smoking smoking by students

Age of 1st smoking (Years)	No. of Student	Percentage
10	1	3.0
13	1	3.0
14	4	12.1
15	9	27.3
16	9	27.3
17	8	24.2
18	1	3.0
Total	33	100

Table 3 shows that among students who ever-tried smoking around 79% of them tried between 15 to 17 years of age. Twelve percent started smoking at the age of 14 years. Three percent started smoking at the ages of 10, 13, and 18 years each.

4.2 Demographic Profile

Demographic characteristics contain all section like respondent's age, ethnicity, faith in religion, gender, class, faculty etc.

4.2.1 Current Age of students

Current age reflects the vulnerable population where the smoking habit may be initiated or continued.

Table No. 4: Current age of students

Age (Years)	No. of student	Percentage
16	24	12.0
17	69	34.5
18	71	35.5
19	36	18.0
Total	200	100

Table 4 shows that the current ages of students in years with 35.5% of the students were 18 years of age and 34.5% were of 17 years of age. Eighteen percent were of 19 years of age and 12% were of 16 years of age.

4.2.2 Ethnicity of students

Ethnicity may inform about the culture of the students. It might possibly affect how the body of different ethnic groups handles the smoking.

Figure No. 1: Ethnicity of students

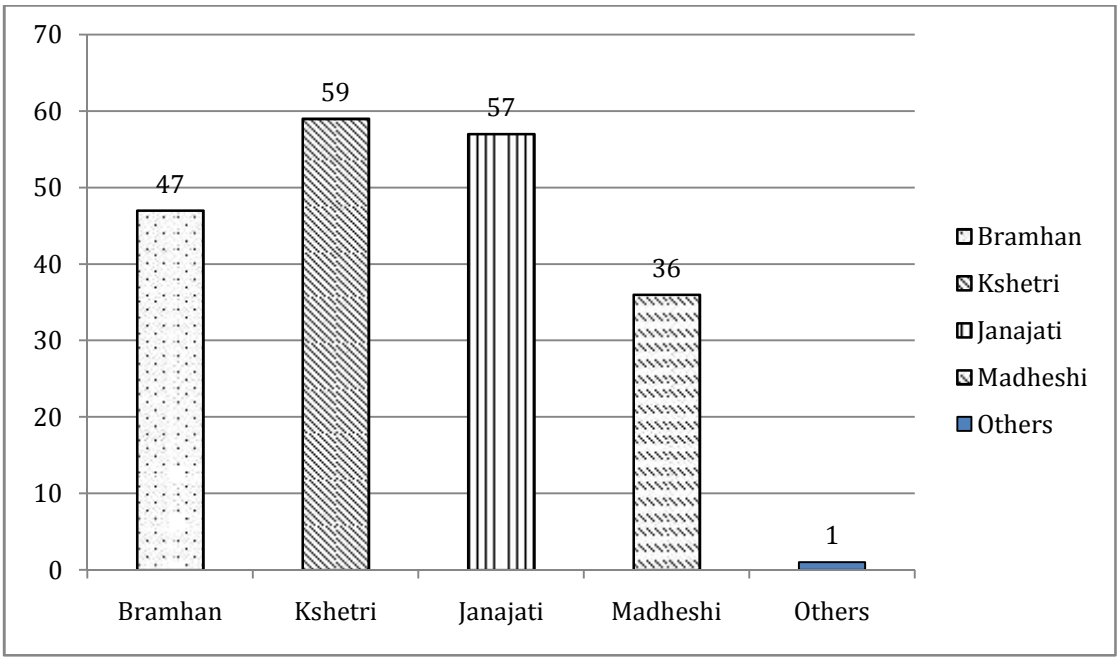


Figure 1 shows that among respondent students 29.5% were Kshetri, 28.5% were Janajati, 23.5% were Bramhan, 18% were Madhesi and less than one percent were others.

4.2.3 Faith in religion of students

Most religions prohibit the use of substances like cigarette smoking. Therefore, faith in religion might play a protective role in smoking.

Table No. 5: Faith in religion of students

Faith in religion	No. of student	Percent
Yes	162	81.0
No	38	19.0
Total	200	100

Table 5 shows that among all respondent students, 81% had faith in religion and 19% did not.

4.2.4 Gender of students

Most of the literature suggests that males smoke cigarettes more than females. Male

gender has been cited as a risk factor for smoking.

Figure No. 2: Gender of students

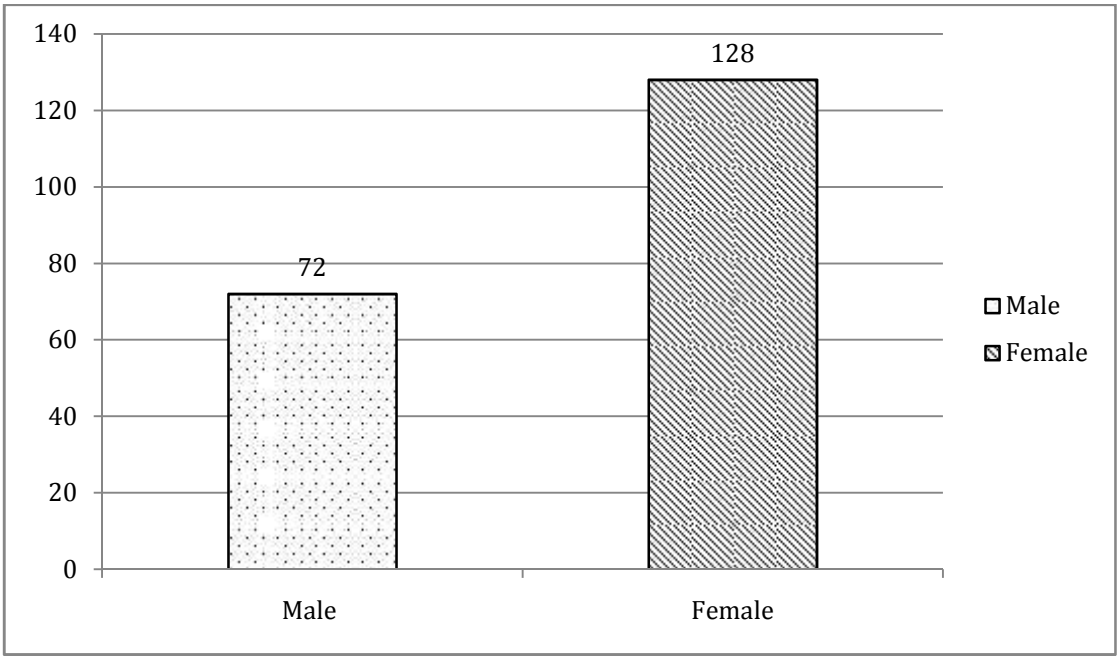


Figure 2 shows that 64% of the participants were female and 36% were males. Majority of respondents were female.

4.2.5 **Classes of students**

There were two classes in ten-plus-two classes, class 11 and class 12. Students were sampled from both classes.

Table No. 6: Classes of students

Class	No. of student	Percent
11	100	50.0
12	100	50.0
Total	200	100

Table No. 6 shows that there were 50% participants from class 11 and 50% participants from class 12. Fifty percent respondents were from class 11 & class 12 each.

4.2.6 Faculty of students

Among the schools chosen, these had four faculties, namely, Education, Management, Science, and Humanities. It reflects here only the available courses running in the selected colleges.

Table No.7 Faculty of students

Faculty	No. of student	Percent
Education	81	40.5
Management	80	40.0
Science	20	10.0
Humanities	19	9.5
Total	200	100

Table 7 shows that there were around 40% of students selected from Faculties of Education and Management each, and around 10% each from Faculties of Science and Humanities.

4.2.7 Family type of students

Joint family, if there is a good harmony, will have more people to support students including guidance in remaining abstinence from smoking, however, if family members smoke, it increases the exposure to more people at home for smoking.

Figure No. 3: Family type of students

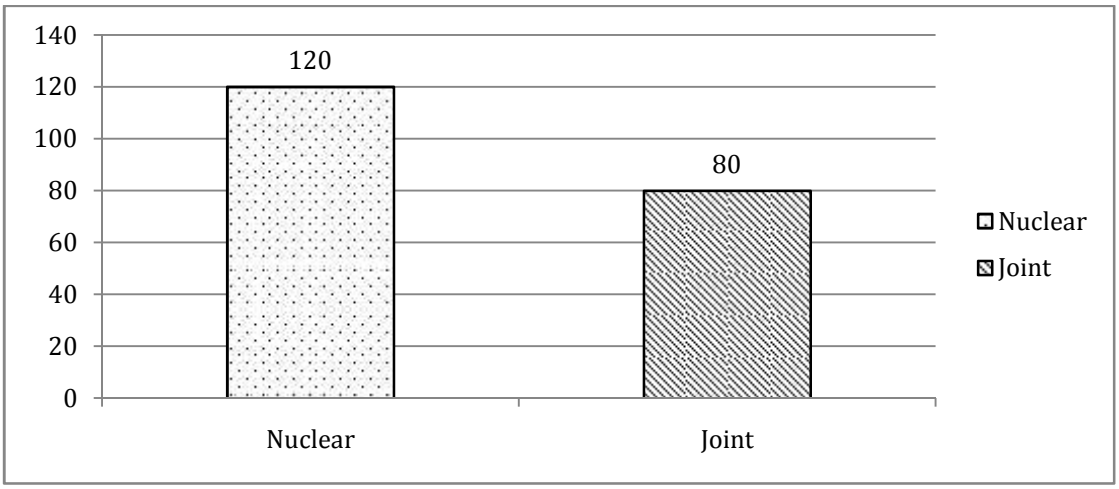


Figure 3 shows that 60% of students belonged to nuclear family and 40% belonged to joint family.

4.2.8 Who students lived with?

Living alone during adolescence may keep them out of sight from parental discipline that may encourage them to start smoking especially if peers smoke.

Table No. 8: who Students lived with ?

Living with	No. of student	Percent
Alone	15	7.5
With only one parent	66	33.0
With both parent	91	19.0
With relatives	19	9.5
With friends	9	4.5
Total	200	100

Table 8 shows that 33% students lived with only one parent, 19% lived with both parents, 9.5% lived with relatives, 7.5% lived alone, and 4.5% lived with friends. Majority respondents lived with only one parent.

4.2.9 Father's occupation of students

Some literature has suggested that father's occupation as a risk factor for smoking of cigarettes and some has not shown any association.

Table No.9: Father's occupation of students

Father's Occupation	No. of student	Percentage
No work	9	4.5
Government work	27	13.5
Army or police	22	11.0
Private sector	26	13.0
Farmer	76	38.0
Others	40	20.0
Total	200	100

Table 9 shows that 38% of the fathers were involved in farming, 20% in others, 13.5% in government job (non-force), 13% in private sector, 11% in army or police, and 4.5% were unemployed. Majority of father's occupation was farming.

4.2.10 Mother's occupation of students

Some literature has suggested that mother's occupation as a risk factor for smoking of cigarettes and some has not shown any association.

Table No. 10: Mother's occupation of students

Mother's occupation	No. of student	Percent
No work	93	46.5
Government work	9	4.5
Army or police	0	0.0
Private sector	12	6.0
Farmer	54	27.0
Others	32	16.0
Total	**200**	**100**

Table 10 shows that 46.5% of students' mothers were unemployed, 27% were involved in farming, 16% in others, 6% in private sector, 4.5% in government job, and none of the mothers were working in army or police. Majority of the respondent's mother did not work.

4.2.11 Rural or Urban background of the students

Study suggested that students from urban background tend to smoke more compared with rural background, and students from rural background tend to use smokeless tobacco compared with the urban background.

Table No. 11: Rural or Urban background of the students

Times	No. of student	Percent
Rural background	107	53.5
Urban background	93	46.5
Total	**200**	**100**

Table 11 shows that 53.5% of the students were from rural background and 46.5% were from urban background. Slightly more than 50% came from the rural

background.

4.3 Family and friends smoking

Family member is the main and first part of the adolescent students and friends is the second part. Smoking by close friends and family members were strong influencing factors for tobacco use of adolescent students.

4.3.1 Smoker in family of the students

Presence of smoker in the family provides the early exposure to smoking to students.

Table No. 12: Smoker in family of the students

Smoker in family	No. of student	Percent
Yes	59	29.5
No	141	70.5
Total	**200**	**100**

Table 12 shows that 70.5% of the students did not have anyone smoking in the family and 29.5% had at least one member as smoker in the family.

4.3.2 Smoking by father of the students

Smoking by father provides a negative role model for students regarding smoking.

Table No. 13: Smoking by father of the students

Father smoke cigarette	No. of student	Percent
Yes	44	22.0
No	156	78.0
Total	**200**	**100**

Table 13 shows that majority of the students' fathers (78%) did not smoke and 22% of the students' father smoked father. Higher percentage of did not smoke student's father.

4.3.3 Smoking by mother of the students

Smoking by mother provides a negative role model for students regarding smoking.

Table No.14: Smoking by mother of the students

Mother smoke cigarette	No. of student	Percent
Yes	8	4.0
No	192	96.0
Total	**200**	**100**

Table 14 shows that almost all mothers of the students (96%) did not smoke except four percent of the mothers who smoked.

4.3.4 Presence or absence of smoking by Other Family member of the students

Smoking other than parents in the family also exposes the students to smoking behavior which is also a risk factor for the smoking of the students.

Table No. 15 : Presence or absence of smoking by Other Family member

Smoking by other family member	No. of student	Percent
Yes	50	25.0
No	150	75.0
Total	**200**	**100**

Table 15 shows that 75% of the other family members (other than parent) did not smoke cigarettes and 25% smoked cigarettes.

4.3.5 Smoking by the relatives of the students

As the number of smokers increases in the family, there is more exposure to smoking. Smoking by respected members as well as brothers and sisters may give the impression to the students that smoking is an acceptable behavior.

Table No. 16: Smoking by the relatives of the students

Characteristics	Categories	No. of student	Percentage
Uncle	No	180	90.0
	Yes	20	10.0
Aunt	No	197	98.5
	Yes	3	1.5
Elder brother	No	186	93.0
	Yes	14	7.0
Elder sister	No	199	99.5
	Yes	1	0.5
Cousins	No	191	95.5
	Yes	9	4.5
Others	No	191	95.5
	Yes	9	4.5
	Yes	54	27

Table 16 shows that 90% of the uncles of the students did not smoke cigarettes and 10% did smoke. Nearly all aunts (98.5%) did not smoke cigarettes and 1.5% did not. Ninety three percent of elder brothers did not smoke cigarettes and three percent smoked. Almost all elder sisters (99.5%) did not smoke cigarettes. Among cousins (brothers and sisters) and others 95.5% did not smoke cigarettes each.

4.3.5 Smoking by close friends of the students

Adolescents are more influenced by friends, especially close friends, than parents. Smoking by close peers is a recognized risk factor for smoking during adolescence.

Table No. 17: Smoking by close friends of the students

Close friends smoker	No. of student	Percent
Yes	47	23.5
No	153	76.5
Total	**200**	**100**

Table 17 shows that 76.5% of the close friends did not smoke cigarettes and 23.5% smoked. Majority of the friends did not smoke.

4.3.6 Number of smoker friends of the students

As the numbers of friends increase so the chances of more peer influence increase. Lesser the number of friends who smoke, probably less influenced a student would be.

Table No. 18: Number of smoker friends of the students

Characteristics	Categories	No. of student	Percentage
Number of friends who smoked	1	5	9.3
	2	15	27.8
	3	19	35.2
	4	7	13.0
	5	4	7.4
	8	1	1.9
	10	1	1.9
	12	1	1.9
	13	1	1.9

Table 18 shows that 35.2% students had three friends who smoked, 27.8% had two

friends who smoked, 13% had four friends who smoked, 9.3% had one friend who smoked, and 7.4% had five friends who smoked. Nearly 2% students had 8, 10, 12, and 13 friends each who smoked cigarettes.

4.3.7 Close friends offering cigarettes to students

If a student is offered a cigarette compared with no one offers him, there may be increased chances of starting smoking. When a close friend offers cigarettes, a student might find it difficult to reject that offer not to lose the friendship, which puts the students at higher risk.

Table No. 19: Close friends offering cigarettes to students

Offered cigarette smoking	No. of student	Percent
Yes	32	16.0
No	168	84.0
Total	**200**	**100**

Table 19 shows that 84% of the students were not offered cigarettes by close friends and 16% were offered cigarettes by close friends. Close friends did not offer many respondents cigarettes.

4.3.8 Smoking by teachers of the students

Teachers are very important role models in schools. When a student sees a teacher smoking who is supposed to guide him towards more healthy behavior that may adversely affect the students' behavior.

Table No. 20: Smoking by teachers of the students

Smoking by teacher (seen)	No. of student	Percent
Yes	39	19.5
No	161	80.5
Total	**200**	**100**

Table 20 shows that 80.5% of the students did not see their teacher smoking and 19.5% saw their teacher smoking.

4.4 Others history of smoking

4.4.1 Types of smoking by students

People have different preferences for smoking that is influenced by availability, cost, and what is mostly being practiced in the locality.

Table No. 21: Types of smoking by students

Types of smoking	No. of smoker	Percent
Cigarette	24	82.8
Bidi	0	0.0
Cigar	1	3.4
Other	4	13.8
Total	**29**	**100**

Table 21 shows that most of the students smoked cigarettes (82.8%) and none of the students smoked bidi. One student (3.4%) smoked cigar and four students (13.8%) smoked other types.

4.4.2 Ease of getting cigarettes by students

Easy access to cigarettes is a known factor that contributes in difficulty in controlling cigarette use. A student may continue cigarette smoking if it is easily available.

Figure No. 4: Ease of getting cigarettes by students

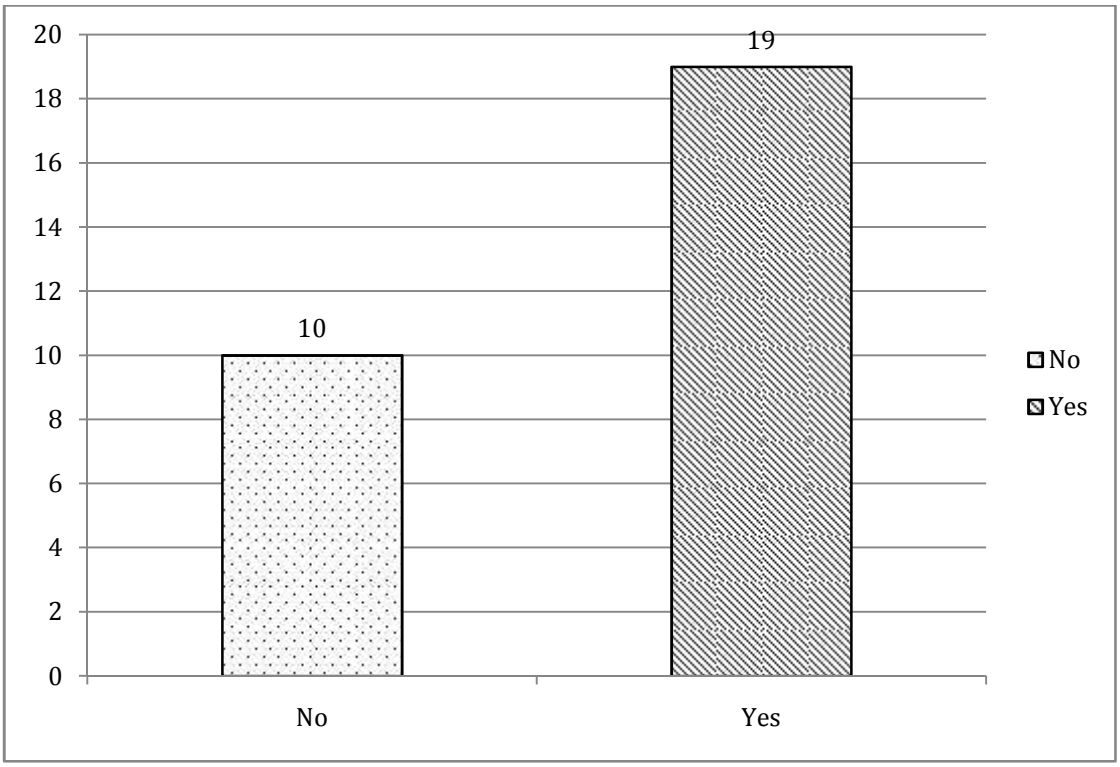


Figure No. 4 shows that 65.5% students had easy access to cigarettes and 34.5% had difficulty in getting cigarettes.

4.4.3 way of obtaining cigarettes by students

Those students who smoke have to obtain it from one or the other ways. Some may buy or receive from others.

Table No. 22: way of obtaining cigarettes by students

Smoking cigarette usually	No. of smoker	Percent
I buy them from a shop	17	58.62
My friends give it to me	9	31.01
I get it from family	1	3.44
Others	2	6.89
Total	**29**	**100**

Table 22 shows that 58.6% of the students bought cigarettes from a shop, 31% of the

students were offered by friends, 3.4% got it from family and 6.8% obtained it by other means.

4.4.4 Cigarette buying habit of students

Those students who smoke, some may buy in small amounts at a time or in large quantities. Those students who are more habitual may buy in large amounts.

Table No. 23: Cigarette buying habit of students

Buying a cigarette	No. of smoker	Percent
I buy in a pack	12	41.4
I buy per stick	13	44.8
I buy in a carton	0	0.0
I have never bought it by myself	3	10.3
Others	1	3.4
Total	29	100

Table 23 shows that 44.8% of the students who were current smokers bought one cigarette at a time, 41.3% bought in packs, 10.3% never bought cigarettes, and 3.4% did not reply to this question in a specific way.

4.4.5 Fights in family of the students

Constant fights at home reduce students' self-esteem and frustration that might lead to smoking problem. If the home environment is harmonious, a student finds it easier to share his problems in studies or other areas.

Table No. 24: Fights in family of the students

Fights in family	No. of student	Percent
Yes	70	35.0
No	130	65.0
Total	**200**	**100**

Table 24 shows that 65% of the total students who participated in the study reported no fights in the family and 35% reported fights in the family.

4.4.6 Feelings of students about how parents raised them

Research has shown that children or adolescents do best when parenting style is neither too strict nor loose but optimum (firm in limit setting but understanding and supportive mostly).

Figure No. 5: Feelings of students about how parents raised them

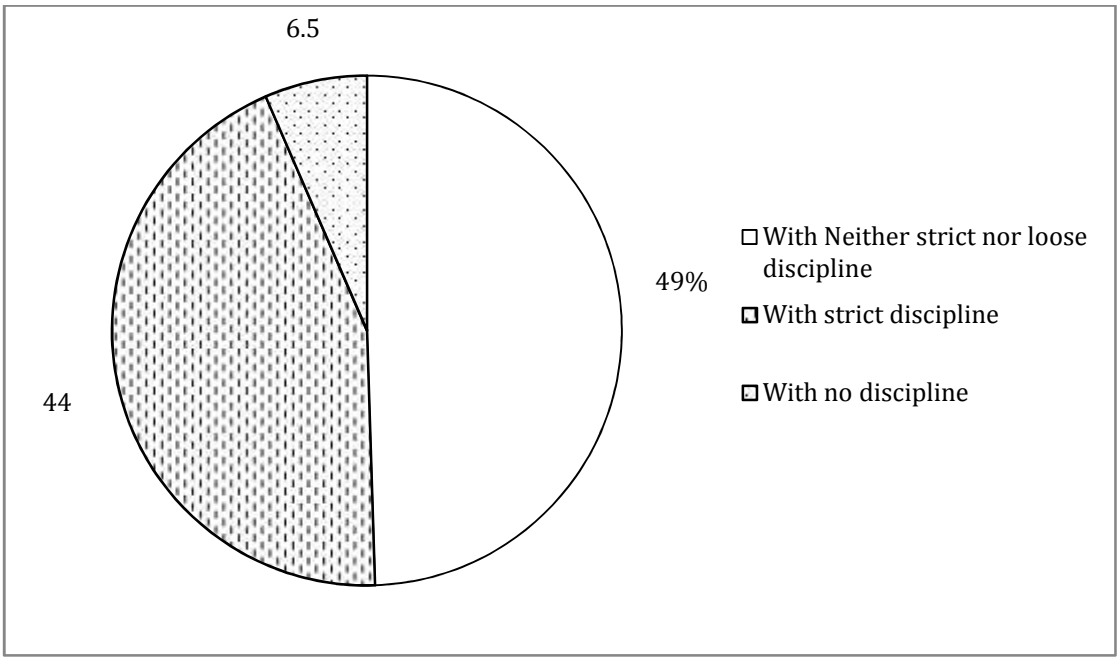


Figure No. 5 shows that 49.5% students perceived that their parents raised them with optimal discipline, 44% perceived that their parents raised them with strict discipline, and 6.5% perceived that their parents did no ensure discipline.

4.4.7 Every day ever smoked cigarette for last 30 days by students

Smoking may be occasional to begin with but gradually with continued use, one may begin to smoke daily.

Table No. 25: Smoking of cigarettes every day in last 30 days by students

Every day ever smoked cigarette in last 30 days	No. of smoker	Percent
Yes	29	14.5
No	171	85.5
Total	**200**	**100**

Table 25 shows that all of the current smokers who smoked at least one cigarette in last 30 days continued to smoke daily; it was 14.5% of the total respondent students.

4.4.8 Place of smoking by students

Students smoke in different places like at home, school, houses, in social events or places.

Table No. 26: Place of smoking by students

Place of smoking (n=200)	No. of smoking	Percent
I do not smoke	171	85.5
I smoke	29	14.5%
Total	200	100
Among Smokers (n=29)		
At home	4	13.8
At school	4	13.8
At friends houses	12	41.4
Sports events, parties other social events	5	17.2
In public places	4	13.8%
Total	29	100

Table 26 shows that among current smokers, 41.4% of students smoked at friends' house and 17.2% smoked in sports events, parties or other social events. Students smoked at home, at school, and in public places 13.8% each.

4.4.9 Students wanting to stop smoking

Some the current smokers want to quit smoking. The desire to quit smoking is an important finding because if students can be attended during this period there is more probability of motivational intervention being effective than other period.

Table No. 27: Students wanting to stop smoking

Want to stop smoking	No. of smoker	Percent
Yes	18	62.1
No	11	37.9
Total	**29**	**100**

Table 27 shows that 62.1% of the current smokers wanted to quit smoking and 37.9% of the current smokers did not want to quit smoking.

4.4.10 Reason for starting smoking by students

Smokers have different reasons for starting smoking. Some of them start after having problem either at school or at home or due to stress. In the early phase of smoking, if the reason for which smoking was started can be addressed, it is helpful in quitting smoking.

Figure No. 6: Reason for starting smoking by students

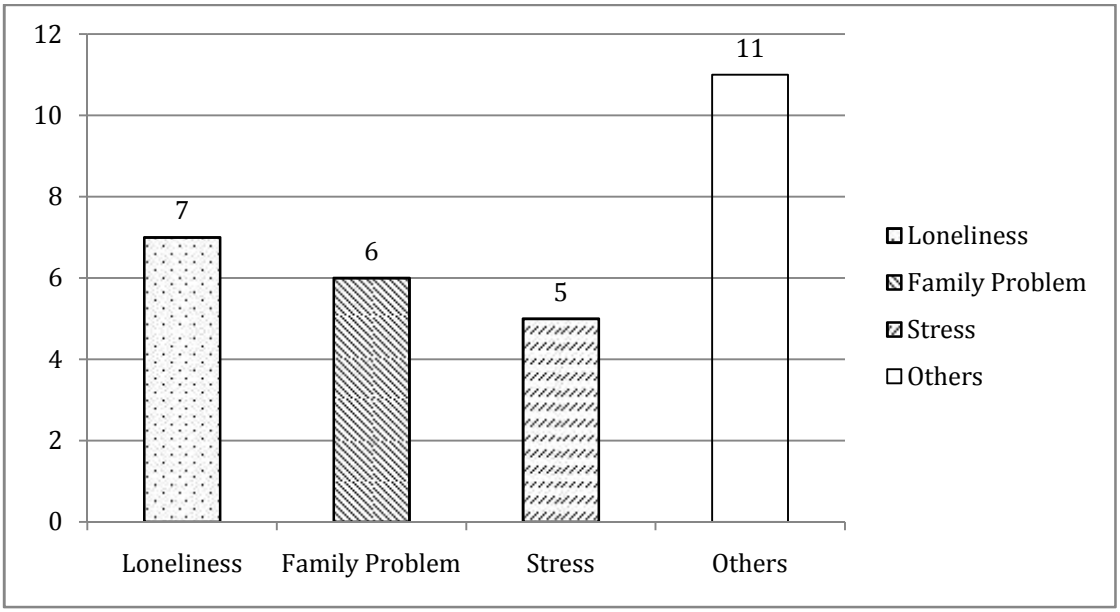


Figure No 6 shows that nearly 38% could not report exact reason for starting smoking, 24.1% cited loneliness, 20.6% cited family problems, and 17.2% cited stress as reasons for starting smoking respectively.

4.4.11 Reported health problems of smoking by students

Health hazards of smoking are a well-established scientific fact. At different level of smoking different health hazards may be experienced. It is better to quit at the earliest in ay case.

Table No. 28: Reported health problems of smoking by students

Health problems of smoking	No. of smoker	Percent
Coughing	7	24.13
Feeling of not getting enough air	7	24.13
Tiredness	1	3.44
Premature wrinkles	1	3.44
Other (please specify)	13	44.82
Total	**29**	**100**

Table 28 shows that among current smokers nearly 45% of students reported other health problems (however students did not specify the symptoms in Performa) caused by smoking. Nearly one fourth each reported coughing and feeling of not getting enough air, and 3.4% each reported tiredness and premature wrinkles as health problems caused by smoking.

4.4.12 Exposure of students to media of cigarette smoking

Printed, audio, visual, and audio-visual media are also important sources of exposure to cigarette smoking. One study done in Nepal also has shown that exposure to smoking through reading or listening in media also adversely affects students.

Table No. 29: Exposure of students to media of cigarette smoking

Read or listen to advertisement media exposure to smoking	No. of student	Percent
Yes	183	91.5
No	17	8.5
Total	**200**	**100**

Table 29 shows that 91.5% of all students were exposed to media involving cigarette smoking either in reading form or listening form.

4.4.13 Mediums of exposure of smoking to students

There may be more than one source of exposure in media about cigarette smoking, for example, magazines, newspaper, television, radio etc.

Figure No. 7: Mediums of exposure of smoking to students

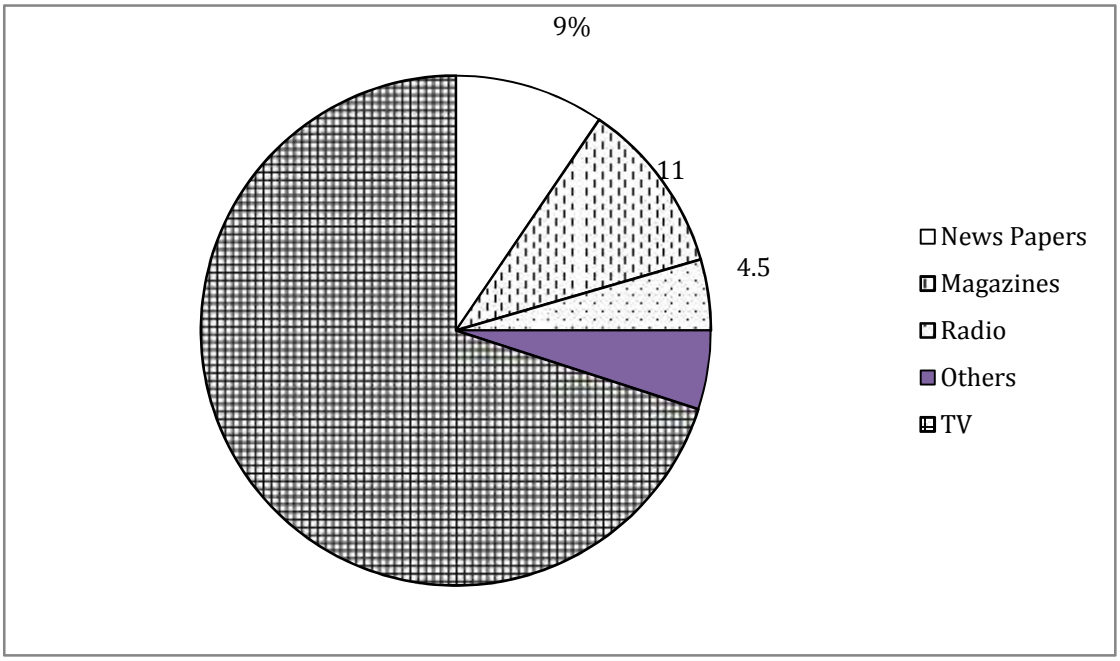


Figure No. 7 shows that 70% of the total students had exposure to cigarette smoking by television, 11% had exposure through magazines, 9.5% had exposure through newspaper, 4.5% had exposure through radio, and 5% had exposure through other means.

4.4.14 Perception of students regarding Smoking makes lose weight

Some smokers have a belief that smoking causes weight loss, and especially if these smokers have more than desired weight, they may erroneously continue smoking.

Table No. 30: Perception of students regarding Smoking makes lose weight

Smoking makes think lose weight	No. of student	Percent
I definitely agree	44	22.0
I disagree	40	20.0
I agree	45	22.5
I definitely disagree	23	11.5
Total	**200**	**100**

Table 30 shows that of the total students, 22.5% agreed and 22% definitely agreed that smoking makes lose weight, however, 20% disagreed and 11.5% definitely disagreed that smoking makes lose weight.

4.4.15 Spending money on smoking per week by students

Smoking costs money. The more the number of cigarette smoking the more expenditure on smoking.

Table No. 31: Spending money on smoking per week by students

Spending of money per week	No. of smoker	Percent
I have never brought any money	9	14.5
Rupees.		
50	1	4.76
70	1	4.76
100	3	14.28
150	4	19.04
200	6	28.57
300	6	28.57
350	3	14.28
400	5	23.80
500	4	19.04
600	1	3.44
1000	2	9.52
2000	1	3.44

Table 31 shows that of the total students, per week 28.57% students each spent 300 rupees and 200 rupees, 23.8% students spent 400 rupees, and 19% each spent 500 rupees and 150 rupees on smoking. On smoking, around 14% students spent 350 rupees and another 14% students spent 100 rupees per week, 9.5% students spent 1000 rupees per week, around 9% spent between 50 to 70 rupees per week, and 3.4% students spent 2000 rupees per week. Around 15% students did not spend money on smoking.

4.4.16 Student's perception about effects of smoking on health

During childhood and adolescence, peer influence is high and many a time the perception that circulates in the friends' circle may not be accurate.

Figure No. 8: Student's perception about effects of smoking on health

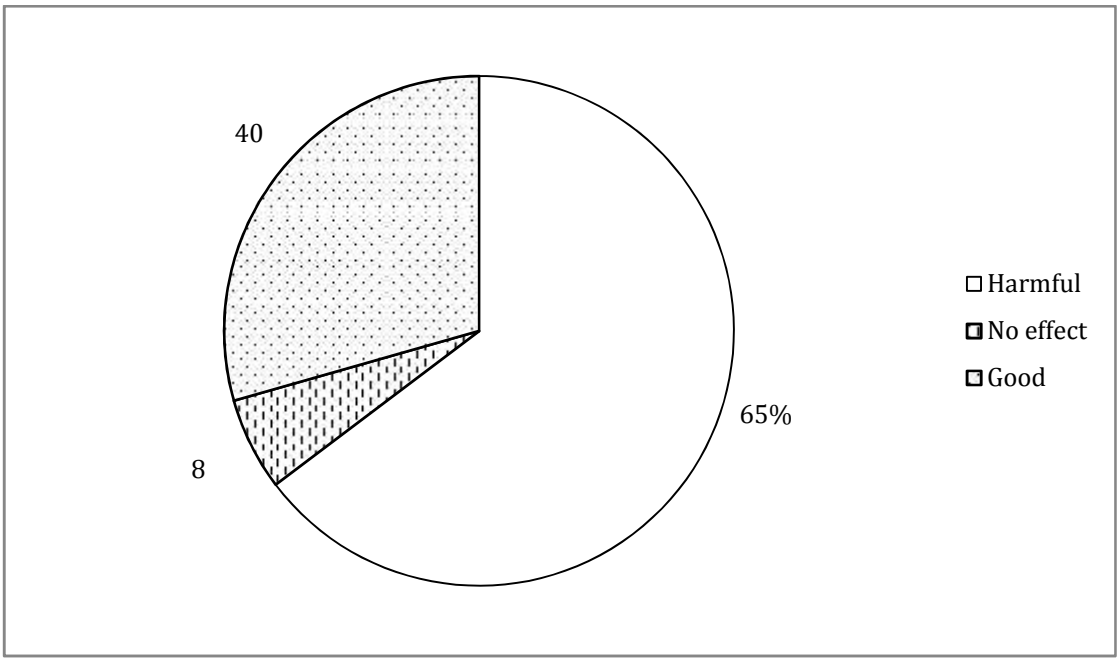


Figure No. 8 shows that of the total 200 students, 88% thought that smoking is harmful to health, 8% thought that smoking has no effect on health and four percent thought that smoking has a good effect on health.

4.5 FAGERSTORM TEST FOR NICOTINE DEPENDENCE

4.5.1 Minutes after waking to the 1st cigarette smoking

The shorter the time interval after waking to the first cigarette smoking, the more chances of habitual way of smoking. The longer the duration, better the control of smoking.

Table No. 32: Minutes after waking to the 1st cigarette smoking

Minutes after waking to the 1st cigarette smoking	No. of smoker	Percentage
Within 5 minutes (Score 3)	4	13.79
5-30 minutes (Score 2)	14	48.27
31-60 minutes (Score 1)	11	37.93
Total	**29**	**100**

Table 32 shows that among current smokers, 48.3% students smoked their first cigarette after five to thirty minutes, 37.9% smoked after 31-60 minutes after waking up, and nearly 14% smoked their first cigarette within five minutes after waking up.

4.5.2 Difficulty in refraining from smoking in forbidden places

If a person is not habitual in smoking, one can control the desire to smoking in forbidden places. The more one becomes habitual, the more difficult it becomes for that person to let go of smoking in forbidden places.

Table No. 33: Difficulty in refraining from smoking in forbidden places

Difficulty to forbidden places	No. of smoker	Percent
Yes	8	27.58
No	21	72.41
Total	**29**	**100**

Table 33 shows that 72.4% of current smokers did not have any difficulty and nearly 28% had difficulty in refraining from smoking in forbidden places like temple, schools etc.

4.5.3 Which cigarette would students hate to give up?

The more habitual the person is on smoking, the more difficulty they experience in giving up cigarette smoking in the morning than at other times.

Table No. 34: Which cigarette would students hate to give up?

Hate to give up cigarette	No. of smoker	Percent
The 1st in the morning (Score 1)	8	27.6
Any other	21	72.4
Total	**29**	**100**

Table 34 shows that 72% of the current smokers would rather give up smoking at other times, however, nearly 28% of the current smokers would hate to give up smoking in the morning.

4.5.4 Number of cigarettes smoked by students per day

More a person becomes dependent on smoking the more number of cigarettes one begins to smoke.

Table No.35: Number of cigarettes smoked by students per day

Amount of cigarette	No. of smoker	Percent
10 or less (Score 0)	27	93.10
11-20 (Score 1)	2	6.89
21-30 (Score 2)	0	0.0
31 or more (Score)	0	0.0
Total	**29**	**100**

Table 35 shows that 93% of the current smokers smoked ten or less than ten cigarettes a day and around 7% of the current smokers smoked between eleven to twenty cigarettes a day. None of the current smokers smoked more than twenty cigarettes a day.

4.5.5 Frequency of smoking in the morning by students

The more dependent a person is on smoking, the more frequently that person would smoke in the morning.

Table No. 36: Frequency of smoking in the morning by students

Frequently smoke in the morning	No. of smoker	Percent
Yes	12	41.4
No	17	58.6
Total	**29**	**100**

Table 36 shows that 58.6% of the current smoker students did not frequently smoke in the morning and around 41% of the current smoke students frequently smoked in the morning compared with other times of the day.

4.5.6 Smoking of cigarettes despite falling sick in bed by students

Generally, when a person is not dependent on smoking, one can give up smoking in difficult places or situations. However, if someone is dependent on smoking, they would find it difficult to give up smoking even when they are sick in bed.

Table No. 37: Smoking of cigarettes despite falling sick in bed by students

Sick in bed the smoking	No. of smoker	Percent
Yes (Score 1)	3	10.34
No (Score 2)	26	89.65
Total	**29**	**100**

Table 37 shows that nearly 90 % of the current smoker students could give up smoking if they fall sick in bed, however, around 10% current smoker students would not give up smoking even if they fall sick in bed.

4.6 Level of dependence of smoking

4.6.1 Level of dependence of smoking among students

The Fagerstrom Test for Nicotine Dependence gives the aggregate score used for screening of people with nicotine dependence with good reliability and validity. The higher the score the more likely it is for that person to become dependent for nicotine.

Table No. 38: Level of dependence of smoking among students

Level of dependence smoking	No. of smoker	Percent
Very low dependence (0-2)	14	48.50
Low dependence (3-4)	10	34.48
Median (5)	3	10.34
High dependence (6-7)	1	3.44
Very high dependence (8-10)	1	3.44
Total	**29**	**100**

Table 38 shows the dependence level of the students who are current smokers. Around three fourths of the students (48.5% of very low dependence and 34.5% of low dependence) were not at high risk for very habitual pattern of smoking and nearly seven percent (3.4% each from high dependence and very high dependence) need urgent counseling regarding smoking. Around 10% in the middle range would definitely benefit from counseling regarding smoking.

4.7 Summary of the study

The thesis was submitted to the Janata Multiple Campus and permission to conduct study was obtained. All the government schools in Itahari were listed and 3 schools were selected with lottery method. The selected government schools were approached for permission and introduction about the research was briefed. In each school, one 11 class and one 12 class were selected. All the students who were

present during the class were taken and to ensure confidentiality, the concerned personnel from that school were kept out of the classroom. In each class, the researcher introduced her and briefed about the study and explained about the voluntary nature of participation and confidentiality of their information. The Performa was distributed among the students and filled questionnaires were taken back. Researcher thanked the participants for their voluntary participation.

All the collected data were transferred into tabular figure form and interpreted. There was a total of 200 participants from all selected schools, 100 students from class 11 and 100 students from class 12. There were 81 students studying Faculty of Education, 80 students studying Faculty of Management, 20 students studying Faculty of Science, and 19 students studying Faculty of Humanities. Among 200 students, 128 students (64%) were female and 72 students (36%) were male. Participant students' age ranged from 16 to 19 years with 70% of the them being 16 and 17 years of age. Among respondent students 29.5% were Kshetri, 28.5% were Janajati, 23.5% were Bramhan, 18% were Madhesi and less than one percent were others. Sixty percent of students belonged to nuclear family and 40% belonged to joint family. Thirty three percent students lived with only one parent, 19% lived with both parents, 9.5% lived with relatives, 7.5% lived alone, and 4.5% lived with friends. There were 53.5% of the students from rural background and 46.5% from urban background. Thirty eight percent of the students' fathers were involved in farming, 20% in others, 13.5% in government job (non-force), 13% in private sector, 11% in army or police, and 4.5% were unemployed. There were 46.5% of students' mothers unemployed, 27% were involved in farming, 16% in others, 6% in private sector, 4.5% in government job, and none of the mothers were working in army or police. Nearly half of the students perceived that their parents raised them with optimal discipline, 44% perceived that their parents raised them with strict discipline, and 6.5% perceived that their parents did no ensure discipline. Sixty five percent of the total students who participated in the study reported no fights in the family and 35% reported fights in the family. Among all respondent students, 81% had faith in religion and 19% did not.

Among 200 students of 11^{th} and 12^{th} classes, 33 students (16.5%) tried smoking in lifetime and majority (83.5%) did not. Among 200 students, 29 students (14.5%) smoked cigarettes in last month. Around 86% did not smoke in last one month.

Those students who ever-tried smoking, around 79% of them tried between 15 to 17 years of age. Twelve percent started smoking at the age of 14 years. Three percent started smoking at the ages of 10, 13, and 18 years each.

Nearly 30 % of the 200 students had someone in the family who smoked cigarettes. Twenty two percent of the students' fathers, eight percent of the students' mothers, ten percent of the students' uncles, three percent of the students' aunts, seven percent of the students' elder brothers, around five percent of the students' cousins smoked cigarette. Less than one percent of the students' sisters smoked cigarette. Among 200 students, only 25% of the any other relatives other than parents smoked cigarette in the family. Nearly 24% of the close friends of the students smoked cigarette and 76% of students had between two to four friends who smoked. Sixteen percent of the participant students were offered cigarette by a close friend. Around 20% of the 200 students saw their teachers smoking cigarette.

Among 29 current smokers, most of the students (82.8%) smoked cigarettes and less smoked other types. Nearly 38% could not report exact reason for starting smoking, 24.1% cited loneliness, 20.6% cited family problems, and 17.2% cited stress as reasons for starting smoking respectively. The mean age of initiation of smoking was 15.56 years with standard deviation of 1.46 and range from 10 to 18 years. Nineteen students out of 29 current smokers (around 66%) reported that it was easy for them to get cigarettes; 58.6% of the students bought cigarettes from a shop, 31% of the students were offered by friends, 3.4% got it from family and 6.8% obtained it by other means. Among current smokers, 44.8% of the students bought one cigarette at a time, 41.3% bought in packs, 10.3% never bought cigarettes, and 3.4% did not reply to this question in a specific way. All the 29 current smokers among 200 participants smoked cigarette every day in last month; 93.1% students smoked two to five cigarettes per day, 6.9% smoked 11-20 cigarettes per day, and none of the students smoked more than 20 cigarettes per day. Those who were smoking, 41.4% of students smoked at friends' house and 17.2% smoked in sports events, parties or other social events. Students smoked at home, at school, and in public places 13.8% each. About 62% of the current smokers wanted to quit smoking and 38% of the current smokers did not want to quit smoking. Nearly 45% of students reported other health problems (however students did not specify the symptoms in Performa) caused by smoking; about one fourth each reported coughing and feeling of not getting enough

air, and 3.4% each reported tiredness and premature wrinkles as health problems caused by smoking.

Of the total students (200), 22.5% agreed and 22% definitely agreed that smoking makes lose weight, however, 20% disagreed and 11.5% definitely disagreed that smoking makes lose weight; 88% thought that smoking is harmful to health, 8% thought that smoking has no effect on health and four percent thought that smoking has a good effect on health. Of the total students, per week 28.57% students each spent 300 rupees and 200 rupees, 23.8% students spent 400 rupees, and 19% each spent 500 rupees and 150 rupees on smoking. On smoking, around 14% students spent 350 rupees and another 14% students spent 100 rupees per week, 9.5% students spent 1000 rupees per week, around 9% spent between 50 to 70 rupees per week, and 3.4% students spent 2000 rupees per week. Around 15% students did not spend money on smoking.

Near about 92% of all 200 students were exposed to media involving cigarette smoking either in reading form or listening form; 70% of the total students had exposure to cigarette smoking by television, 11% had exposure through magazines, 9.5% had exposure through newspaper, 4.5% had exposure through radio, and 5% had exposure through other means.

Around three fourths of the students among current smokers (48.5% of very low dependence and 34.5% of low dependence) were not at high risk for very habitual pattern of smoking and nearly seven percent (3.4% each from high dependence and very high dependence) need urgent counseling regarding smoking. Around 10% in the middle range would benefit from counseling regarding smoking.

CHAPTER – V

CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary of the study with its major findings, conclusion and recommendations for improvement and future research study.

5.1 CONCLUSION

Based on the objectives of this study, following conclusions can be drawn.

1. The prevalence of ever-smoking and current-smoking among 200 samples of students was 16.5% and 14.5% respectively.

2. The mean age of initiation of smoking was 15.56 years with standard deviation of 1.46 and range from 10 to 18 years.

3. In 30% of the 200 students someone smoked in the family. Twenty two percent of the students' fathers, eight percent of the students' mothers, ten percent of the students' uncles, three percent of the students' aunts, seven percent of the students' elder brothers, around five percent of the students' cousins smoked cigarette. Less than one percent of the students' sisters smoked cigarette. Among 200 students, only 25% of the any other relatives other than parents smoked cigarette in the family. Nearly 24% of the close friends of the students smoked cigarette and 76% of students had between two to four friends who smoked. Sixteen percent of the participant students were offered cigarette by a close friend. Around 20% of the 200 students saw their teacher smoking cigarette.

Overall the prevalence of ever-smoker and current-smoker is less than what is reported around the world and studies from Nepal. Around three fourths of the students among current smokers (48.5% of very low dependence and 34.5% of low dependence) were not at high risk for very habitual pattern of smoking and nearly seven percent (3.4% each from high dependence and very high dependence) need urgent counseling regarding smoking. Around 10% in the middle range would benefit from counseling regarding smoking.

5.2 Recommendation

The recommendation for improvement and future research area on the basis of

conclusions and findings were suggested as follows

5.2.1 Recommendation for policy related

1. The laws and regulations should be enforced therefore the shops near schools cannot sell cigarettes to students.
2. The number of shops distributing cigarettes should be controlled. Namely, not all the shops are allowed to sell cigarettes.
3. More public relations related to Tobacco Control Laws should be provided for people.
4. The responsible officers should pay more attention to the laws implementation and regularly check about the shops distributing cigarettes to the students aged below 18 years old.

5.2.2 Recommendation for practice related

1. Many channels should be established to help people quit smoking therefore theadolescents can be the good example of non-smoker to the students and family member.
2. The non- smoking family contest should be organized in each community.
3. The information derived from this research should be reported to the local government organizations therefore they can find the ways to prevent students from smoking.
4. More non-smoking area should be increased in each community.
5. The knowledge derived from this research should be acknowledged to communities through the national media.

5.2.3 Recommendation for further related

1. The cross sectional study should be conducted to compare the effectiveness of the non- smoking programmes.
2. The qualitative research or in-depth interview related to the accessibility of cigarettes of aged below 18 years should be conducted more.
3. Efforts should be made to legislate a complete ban of all direct and

indirect tobacco advertisements in the print and broadcast media. Restrictions should be made in sponsoring adolescent targeted activities by tobacco companies. In addition, students should be informed about the misinformation on tobacco use that is covered in the tobacco promotional advertisements.

References

Bandason, T., & Rusakaniko, S. (2010). Prevalence and associated factors of smoking among secondary school students in Harare Zimbabwe. *Tobacco Induced Diseases, 8: 12.*

Nepal Details - Tobacco Control Laws.

Dahal, S., Maharjan, S., Subedi, R. K., & Maharjan, J. (2015). Role of Media in Provoking Cigarette Smoking among Adolescents in Urban Nepal. *Health,7 (1), 98–105.*

Dahal, S., Subedi R. K., Maharjan, S., & Maharjan, J. (2014). Smoking behavior of adolescents and their view towards government's ban on smoking in public places in Kathmandu. *Nepal Journal of Medical Sciences, 3 (2), 94–100.*

De Silva, K., & Ekanayake, L. (2017). Tobacco use in late adolescence among rural Sri Lankans. *Community Dental Health, 34 (1), 41-45.*

Flay, B. R., Petraitis, J., & Hu, F. B. (1999). Psychosocial risk and protective factors for adolescent tobacco use. *Nicotine & Tobacco Research, 1 Suppl 1*(February), S59-65.

Gupta, A., Sharma, D., Thakur, A., Thakur, D., & Mazta, S. (2014). Prevalence of cigarette smoking and its predictors among school going adolescents of North India. *South Asian Journal of Cancer, 3 (4), 193-195.*

Heras, P., Kritikos, K., Hatzopoulos, A., Kritikos, N., & Mitsibounas, D. (2008). Smoking among high school students. *American Journal of Drug & Alcohol Abuse, 34 (2), 219-224.*

Jamal, A; Gentzke, A; Hu, SS; Cullen, KA; Apelberg, BJ; Homa, DM; King, B. (2017). Tobacco use among middle and high school students - United States, 2011-2016. *Morbidity and Mortality Weekly Report.*

Kabir, M., & Goh, K.-L. (2014). Determinants of tobacco use among students aged 13–15 years in Nepal and Sri Lanka: Results from the Global Youth Tobacco Survey, 2007. *Health Education Journal, 73 (1), 51–61.*

Mahalakshmi, T. (2015). Knowledge on harmful effects of tobacco abuse among

school going adolescents at rural areas of tiruvallur district of India. Journal of *Interdisciplinary and Multidisciplinary Research, 2 (8), 39–41.*

MoHP Ministry of Health and Population. (2008). Brief Profile on Tobacco Control in Nepal. *Ministry of Health and Population, Nepal.*

Narain, R., Sardana, S., Gupta, S., & Sehgal, A. (2013). Risk factors associated with tobacco habits among adolescents: A cross-sectional school-based study. *National Medical Journal of India, 26 (4), 197-202.*

Olumide, A. O., Robinson, A. C., Levy, P. A., Mashimbye, L., Brahmbhatt, H., &Lian, Q. (2014). Predictors of substance use among vulnerable adolescents in five cities: Findings from the well-being of adolescents in vulnerable environments study. *Journal of Adolescent Health, 55 (60), S39-47.*

Sabnis, R., Sahu, K., Thakur, D., Surana, S., Mazhar, H., & Pandey, S. (2016). Urban and rural disparity in tobacco use and knowledge about oral cancer among adolescents: An epidemiological survey on 12 and 15-year school going students. *Journal of International Society of Preventive and Community Dentistry, 6 (Suppl 3), S226-231.*

Sah, R. B., Pradhan, B., Subedi, L., Karki, P., & Jha, N. (2016). Epidemiological study of tobacco smoking behaviour amongst residents of the hill region of Nepal. *Kathmandu University Medical Journal, 14 (55), 215-220.*

Sohn, M., & Jung, M. Effect of Viewing Smoking Scenes in Motion Pictures on Subsequent Smoking Desire in Audiences in South Korea. *JMIR Public Health Surveill, 3 (3), e46.*

THE TOBACCO ATLAS. *Country Fact Sheet, Nepal.*

Thomas, R. E., Baker, P., & Lorenzetti, D. (2015). Family-based programmes for preventing smoking by children and adolescents. *The Cochrane Database of Systematic Reviews, 2015 (2), CD004493.*

Uprety, S., Poudel, I., Bhattarai, S., Ghimire, A., Singh, N., Poudel, M.,&Pokharel, P. (2014). Knowledge on health effects and practices of smoking among the smokers in the Eastern Terai Region of Nepal. *Journal of Chitwan Medical College, 4 (1), 22–25.*

WHO. (2015). *Prevalence of tobacco survey.*

WHO. (2015). *Tobacco control economics.*

WHO. (2015). *Global Health Observatory data.*

Wojtyła-Buciora, P. et al. (2017). Trends in smoking among secondary school and high school students in Poland, 2009 and 2011. *International Journal of Occupational Medicine and Environmental Health, 30 (5), 763-773.*

Zhang, L., Wang, W., Zhao, Q., & Vartiainen, E. (2000). Psychosocial predictors of smoking among secondary school students in Henan, China. *Health EducationResearch, 15 (4), 415-422*.

APPENDIX–I

TRIBHUVAN UNIVERSITY

FACULTY OF EDUCATION

JANTA MULTIPLE CAMPUS

HEALTH AND PHYSICAL EDUCATION DEPARTMENT

Itahari, sunsari

Questionnaire

A. Have you ever smoked cigarette in your lifetime? a) YES b) NO

B. Have you smoked in last one month? a) YES b) NO

C. If you have smoked, what was your age when you first smoked?.....Years

Demographic Profile

1. What is your current age ?
   a) 16 years b) 17 years
   c) 18 years d) 19 years
2. What is your ethnicity ?
   a) bramhan b) Kshetri
   c) janajati d) Mdhesi e) Others
3. Do you have faith in religion?
   a) Yes b) No
4. What is your gender?
   a) Male b) Female c) Third
5. Which class are you in now ?
   a) 11 b) 12
6. What is your faculty in school ?
   a) Education b) Management
   c) Science d) Arts
7. Your family is …….
   a) Nuclear b) Joint c) Others

8. You live…

a) Alone b) With only one parent

c) With both parents d) With relatives e) with friends

9. What is your father's occupation ?

a) No work b) Government work c) Army or police

d) Private sector e) Farmer f) Others

10 what is your mother's occupation ?

a) No work b) Government work c) Army or police

d) Private sector e) Farmer f) Others

11. Do you come from

a) Rural background b) Urban background ?

Family and friends smoking

1. Does anyone smoke in your family?

a) Yes b) No

2. Does your father smoke cigarettes?

a) Yes b) No

3. Does your mother smoke cigarettes?

a) Yes b) No

4. Do your other family members smoke cigarettes?

a) Yes b) No

5. Please tick all that apply, yes

a) Uncle b) Aunt c) Elder brother

d) Elder sister e) Cousin brother or sister or both f) Others

6. Do your close friends smoke cigarettes?

a) Yes b) No

7. If yes, specify the number of smoker……..

8. Have your close friend ever offered you a cigarette ?

a) Yes b) No

9. Have you seen your teacher smoking?

a) Yes b) No

Other history of smoking

1. How did you smoke ?

a) cigarette b) bidi c) Cigar d) Other……

2. Is it easy to get your cigarettes if you want it?

a) Yes b) No

3. When you smoke, how do you get your cigarettes usually?

a) I buy them from a shop b) My friends give it to me

c) I get it from family members d) Others

4. How do you buy your cigarettes?

a) I buy in a pack b) I buy per stick

c) I buy in a carton d) I have never bought it by myself

e) Other……..

5. Does a lot of fights happen at your home?

a) Yes b) No

6. How do you overall feel regarding how your parents raised you?

a) With strict discipline b) With neither strict nor loose discipline

c) With no discipline

7. Have you ever smoked cigarettes daily, that is at least one cigarette every day for 30 days

a) Yes b) No

8. Where do you smoke cigarette?

a) I do not smoke b) At home c) At school

d) At friends houses e) Sports events, parties or other social events

f) In public places

9. Do you want to stop smoking cigarettes?

a) Yes b) No

11. Why do you smoke?

a) Loneliness b) Family problem

c) Stress d) Others

12. What kind of health problem do you feel because of cigarette smoking ?

a) Coughing b) Feeling of not getting enough air c) Tiredness d) Premature wrinkles e) Other (please specify)……

13. Have you ever read or listen to cigarette advertisements in the last month (30 days)?

a) Yes b) No

14. Where did you ever read or listen to cigarette advertisements ?(You can choose more than one)

a) Magazines b) Newspaper c) TV d) Radio e) Others……

15.. Do you think that smoking makes you lose weight ?

a) I definitely b) I disagree c) I agree d) I definitely disagree

16. How much money do you spend in a week ? (only pocket money, not including for school goods)

a) I have never brought any money b) Rs……..

17. What did you think of the smoking's effect on health ?

a) Harmful b) No effect c) Good

APPENDIX–II

FAGERSTROM TEST FOR NICOTINE DEPENDENCE

1. How soon after waking do you smoke your first cigarette?

a. Within 5 minutes (Score 3)

b. 5-30 minutes (Score 2)

c. 31-60 minutes (Score 1)

2. Do you find it difficult to refrain from smoking in places where it is forbidden e.g. Church, Library etc?

a. Yes (Score 1)

b. No (Score 0)

3. Which cigarette would you hate to give up?

a. The first in the morning (Score 1)

b. Any other (Score 0)

4. How many cigarettes a day do you smoke?

a. 10 or less (Score 0)

b. 11-20 (Score 1)

c. 21-30 (Score 2)

d. 31 or more (Score 3)

5. Do you smoke more frequently in the morning?

a. Yes (Score 1)

b. No (Score 0)

6. Do you smoke even if you are sick in bed most of the day?

a. Yes (Score 1)

b. No (Score)