

A Comparative Study of Smoking Behavior
(A Case Study between Indigenous Tharu and
Migrated Brahmin People at Jhakanjhora
tole, Madhesha VDC of
Sunsari District)

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LETTER OF RECOMMENDATION

The thesis entitled “*A Comparative Study of Smoking Behavior (A case study between Indigenous Tharu and Migrated Brahmin People at Jhakanjhora tole, Madhesha VDC of Sunsari District)*” carried out by Dheejan Babu Kaphle (TU REG No. - 132906, Exam Roll No.: 2140421) for the fulfillment of the master's degree in education (Health education) Course No.: Ed. 598 has been completed under my supervision.

I recommend it for the examination and approval.

Rajendra Karki,
(Thesis Supervisor),

Approval Sheet

The thesis entitled “*A Comparative Study of Smoking Behavior (A Case Study between Indigenous Tharu and Migrated Brahmin People at Jhakanjhora tole, Madhesha VDC of Sunsari District)*” prepared by Dheejan Babu Kaphle (TU REG. No. – 132906-95, Exam Roll No.: 2140421) for the fulfillment of the master's degree in education (Health education) Course No.: Ed. 598 to the department of the education has been accepted and approved.

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(Internal Supervisor)

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(Head of the
Department)

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ACRONYMS

- AD - Anno Domini.
- BS - Bikram Sambat.
- CBD - Cannabidiol
- CBS - Central Bureau of Statistics.
- GO - Government Organizations
- INGO - International Non-Government Organizations
- KFN - Karuna Foundation Nepal
- LSD - Lysergic Acid Diethylamide.
- NGO - Non Governmental Organization
- PE - Probable Error.
- SCC - Sanitation Coordination Committee.
- SWC - Social Welfare Council
- THC - Tetrahydrocannabinol
- THCV - Tetrahydrocannabivarin
- UN - United Nation
- UNFPA - United Nations Fund for Population Education
- VDC - Village Development Committee.
- Vern: - Vernacular Terms.
- VSSCC - Vidhyalaya Samajik Sewa Children Club
- WHO - World Health Organization

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ABSTRACT

Smoking has become a form of social cancer that has become responsible for gradual loss of health status. People fall in smoking habit due to various psychological, sociological, cultural, and religious causes. There are various types of substances and apparatuses used in smoking. Some of the common substances are tobacco, marijuana, dhatura, and addictive drugs like hashish and heroin. Similarly, some common apparatuses are paper rolls, cigarettes, chilim, and hookah.

A non-experimental, quantitative, and descriptive research design has been used to carry out the research study. In the study area, total populations of Tharus and Brahmins are 432 and 256 living with 89 and 63 families respectively. The major objective of this study is to give different prospects of smoking behaviors of Tharus and Brahmins.

Tharus and Brahmins both belong to Aryan origin. Their languages, living areas, cultural and religious practices have various similarities. Their social integration in several parts of terrain areas shows peculiar characteristics of co-existences and harmony with each others. The smoking behavior is influenced by peoples' socio-cultural, religious, educational, and economic statuses. Though the substances and apparatuses used by Tharus and Brahmins are similar, there are remarkable differences between the smoking behaviors between Tharus and Brahmins. Majority of smokers smoke tobacco.

There is higher smoking rate among Tharus than Brahmins in the study area. Most of the smokers prefer tobacco with the readymade cigarette/bidi apparatus. The traditional apparatus like chilim and hookah is used more among Tharus. The usage rate of marijuana, dhatura, and other illegal substances was found very low. The trend of consumption of different substances for smoking purpose among Tharus and Brahmins is similar within their certain age group. The frequency of smoking goes on increasing with increase in age among both the populations under study. Correlation Coefficient between the Smoking Rates among Tharus and Brahmins is very high (0.95).

The findings are not only applicable for the study population but also for the other groups of populations having similar socio-economic, cultural and demographic compositions of populations.

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CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Smoking has been practiced in different forms since ancient times. Tobacco and other various hallucinogenic substances like marijuana, dhatara etc. were practiced in smoking all over the world as early as 5000 BC. Many ancient civilizations, such as Babylonians, Indians and Chinese practiced burning such substances' incense as a part of religious rituals. Hindu's God Shiva has been described to be well-habituated with marijuana, dhatara and other hallucinogens by their ritual holy literatures. In Ancient Greece, smoke was used as healing agent. The Greek historian Herodotos also wrote that the Scythians used cannabis primarily for ritual purposes and also for pleasure to some degree. (Codman, 1847).

Smoking has become a worldwide health problem. Numbers of smokers have been increasing day by day with growing population in almost all the countries of the world. According to World Health Organization, there are 1.2 billion smokers in the world while total world population in July of 2009 was about 6.8 billion. (WHO, 2010).

According to WHO, 47 percent of total males are smokers while only 17 percent of total female populations are smokers in 2010 AD worldwide. WHO has a statistics that 4 million deaths per year occur due to smoking-related problems. It has been estimated that this number will be increased to more than 8 million by 2020 AD. 11,000 people die per day currently, causing 12% of total deaths per year. Out of total smoking-related deaths, more than 70% deaths occur in the developing countries like Nepal. 6 million children living today will die prematurely if they decide to start smoking during adolescence. Smoking steals greater than 5 million years from the potential life span of those who have died. Smoking is the leading cause of preventable death. (WHO, 2010). Nepal is a poor country with low level of education and health awareness. People are poor with difficult survival. They still have many superstitious beliefs and do not have knowledge of even minor health-preservation techniques. Smoking is an example of preventable health problem because it can be quit and controlled with human effort. But,

due to lack of awareness, knowledge, or initiatives many people have become smokers and addicted in it.

Though, there are considerable rate of smoking-related diseases' occurrence. Smoking is increasing in Nepal and has become one of the major health problems. In Nepal, a large portion of the adult population smoke. According to statistics, 60.145% of male adults and 19.969% of female adults are smokers in Nepal. Similarly, 12.358% of youths under the age of 15 years smoke. Among the under-15-year young children, 6.037% are females and remaining are males. (UN Population Division, 2000)

1.1.1. Introduction to Tharu

Tharus pervade all along the east-west lowland Terai belt as well as in the inner Terai villages of Chitawan, Dang, Surkhet and Udayapur. They are considered the first native people of that part of Nepal. According to the regions of their inhabitation, each respective Tharu clan has its own ethnic identity, dialect and culture. Tharus have their own languages but the respective Tharu languages are influenced by Awadhi, Bhojpuri and Maithili languages, depending on the regions of their inhabitation. Because of their facial and physical features, they are considered Mongoloid. They mainly practice, Hinduism, Buddhism and Animism. The census of 1991 and 2001 place the Tharu population at 5.4% and 6.75% of the national total population of Nepal respectively. According to Census 2001, their population was 1,533,879. (CBS, 2001). Their main occupation is farming, and Tharus enjoy many similarities with the agro-based Jyapus of the Kathmandu Valley. Recently held census 2011 has not published its report till the preparation of this report.

Tharus are largely populated indigenous minority nationalities who have settled all over Nepal along the whole of the Terai belt and the adjoining Inner Terai, including Udayapur, Chitawan, Nawalparasi, Dang, Deukhuri and Surkhet Valley from ancient times. Culturally and linguistically Tharus are divided into subgroups. Culturally the Tharus of Jhapa, Morang and Sunsari are known as Morang Kochila, the Tharus living in Udayapur, Saptari and the area west to it are called Western Kochila, those living in central and Midwestern Terai are called Katharia, Dangaha (Dangoura, Dangaura) and

Desauri and those living in the far western region are known as the Rana Tharus of Kailali-Kanchanpur (Rajaure, 1995).

The language of the Tharus of Mongoloid stock is related to Indo-European family of languages. The language of the Tharus of the area east of Bagmati to Mechi is influenced by Maithili. The language of the Tharus living in the west from Bagmati to Tinau is influenced by Bhojpuri, the language of Tharus from Tinau to Mahakali rivers in the west is influenced by Awadhi and the language spoken particularly by Rana Tharus from Karnali river to Mahakali river is influenced by the Braja language or by Khadi Boli (Rajaure, 1995).

Tharus are rich in cultural heritage. Their verbally communicated literature is very rich. They have their own special costumes and dresses. Their ornaments have a unique style. They have handicrafts of their own style, which are prevalent in domestic use. Once the navel of a baby gets dried up completely, say in four or five days, the baby's mother takes bath on the banks of a river and goes to simple worshipping of gods to purify herself from contamination of giving birth to a baby. The ritual of first haircut is performed by the child's maternal uncle. Although marriages are traditionally arranged at an early age, some changes are seen in the marriage patterns nowadays. Marriage is either by arrangement or by elopement. Corpse of the dead is either cremated or buried. Tharus have their own community leader who is called Mahato.

Tharus are worshippers of nature heavily influenced by Hindus. They worship various spirits, gods and goddesses, including goddess of forest, rivers, streams and floods. A special type of priest, called 'guru', is employed to satisfy the gods and goddesses by worshipping them. The gurus are of two types: those who worship the gods and goddesses for protecting villages and grain fields are called ban guru and those who satisfy the ancestral deities and dead parents are called ghar guru (Muller-Boker, 1991)

Tharus are well-known peasant farmers of the Terai. The state, having considered the Tharus as the source of income from land, has granted special privileges to them from time to time. Besides agriculture, they are seen engaged in animal husbandry. Kamaiyas, however, live in the houses of their landlords, take loan from them and work

in their farms in return. The government of Nepal declared Kamaiya system illegal on 17 July 2000. (Meyer, 2000).

1.1.2. Introduction to Brahmin

A Brahmin (also Brahman) is a member of the priestly class in the Indian subcontinent including Nepal. According to ancient Hindu texts including the Manusmriti, there are four "varnas", or spiritual classes, among which Brahmins are superstitiously thought to be in the highest class.

Brahmins are the priestly class of Indo-Aryan origin, known as Bahuns in Nepal. Some scholars falsely argue that they emigrated to Nepal from different parts of India. Bahuns are from the Khas community of Nepal, who had no links with India before 19th century. They adopted Hinduism under the influence of great Khas kings of Western Nepal in the beginning of this millennium. They do not have any cultural semblance with the Indian Brahmins.

Brahmins living in Terai region of Nepal are not indigenous and had migrated from few decades before from the hilly region of Nepal. Nepalese Brahmins have high rate of education, perhaps due to the Hindu religious work division towards them for studying and teaching others.

Very often, one can identify Brahmins by their middle names like Dev, Nath, Mani, Raj, Prasad, Devi and Kumari. Some Brahmin family names are: Parajuli, Chapagain, Dahal, Rijal, Rishal, Rimal, Neupane, Koirala, Poudyal/Paudel, Niraula, Pokharel, Regmi, Siluwal, Adhikari, Aryal, Dhakal, Mishra, Subedi, Satyal, Humagai, Guragain, Sapkota, Banskota, Dhungana, Ghimire, Gaudel, Sigdel, Ratatimule, Oli, Atreya, Dulal, Gyanwali, Kafle, Fuyal, Lohani, Mainali, Shivakoti, Upreti, Ojha and Timilsina etc. (Kharel, 2003).

Total population of Brahmin in 2001 in Nepal was 12.74% of the total population of Nepal. (Kaphle, 2009).

1.1.3. Introduction to the Research Area

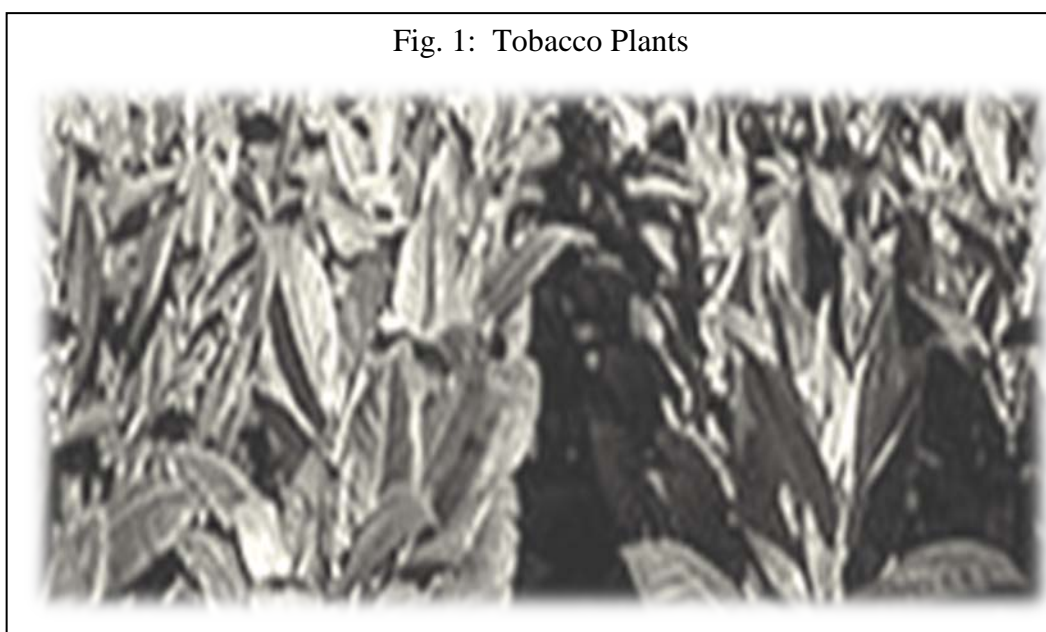
The study area is situated at the southern part of Madhesha VDC of Sunsari district in Koshi Zone of Nepal. It is situated at the north-east direction of Inaruwa municipality. According to legends, a brave Tharu named Jhakan Chaudhary deforestrated the dense jungle of this area during the decades of 1970s to 1980s BS and made the place suitable for human residence. Therefore, people named the place as 'Jhakanjhora' since the meaning of the term 'jhora' means 'to deforestrate' in Tharu language. Later, this area was set in Madhesha VDC of Sunsari district and named as 'Jhakanjhora tole'. When the VDC was divided into different wards, this area was merged into ward numbers 6, 7, and 8 of the village.

Geographically, it is situated at 26 degrees 33 minutes north latitude and the longitude of 87 degrees 15 minutes east. This village is situated at 500 feet altitude from the sea level. Total population of Madhesha VDC was 7023 in Aswin month of 2067 while the total population of Jhakanjhora tole was 1753 with 432 Tharus and 256 Brahmins at that time. (SCC, 2010).

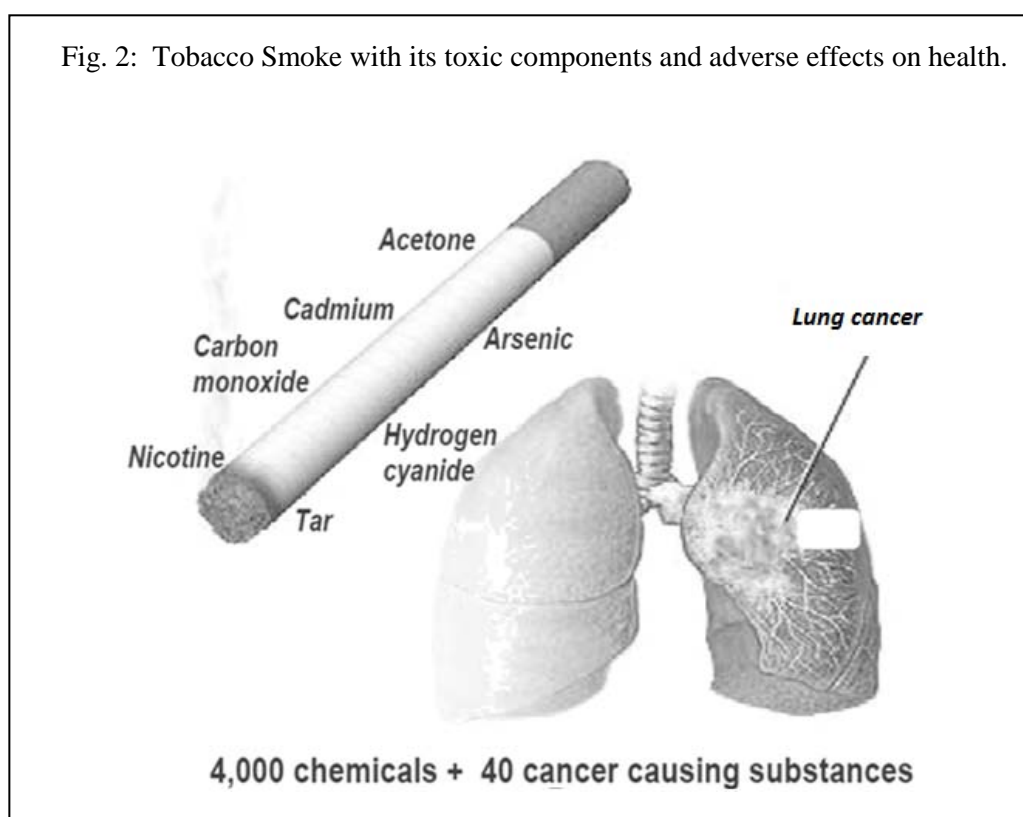
1.1.4. Smoking Substances

a) Tobacco

Tobacco is an agricultural product processed from the leaves of plants in the genus *Nicotiana*.



It can be consumed, used as an organic pesticide and, in the form of nicotine tartrate, used in some medicines. It is most commonly used as a recreational drug, and is a valuable cash crop for countries such as Cuba, China and the United States. In consumption it most commonly appears in the forms of smoking, chewing, snuffing, or dipping tobacco. Tobacco had long been in use as an entheogen in the Americas, but upon the arrival of Europeans in North America, it quickly became popularized as a trade item and a recreational drug. This popularization led to the development of the southern economy of the United States until it gave way to cotton. Following the American Civil War, a change in demand and a change in labor force allowed for the development of the cigarette. This new product quickly led to the growth of tobacco companies, until the scientific controversy of the mid-1900s (Taylor, 1994).



There are more than 70 species of tobacco in the plant genus *Nicotiana*. The word *nicotiana* (as well as *nicotine*) is in honor of Jean Nicot, French ambassador to Portugal, who in 1559 sent it as a medicine to the court of Catherine de Medici, a religious unit for healthcare at that time. (Jacobs, 2000)

Tobacco is consumed in many forms and through a number of different methods. Below are examples including, but not limited to, such forms and usage. Few of them are

Beedi, Chewing tobacco, Cigars, Cigarettes, Creamy snuffs, Dipping tobaccos, Gutka, Hookah, Roll-Your-Own, Snuff, Topical tobacco paste, Tobacco water, etc.

b) Marijuana

The English term *marijuana* comes from the Mexican Spanish word *marihuana*. According to the United Nations, cannabis "is the most widely used illicit substance in the world." Marijuana are also known as Cannabis refers to any number of preparations of the *Cannabis* plant intended for use as a psychoactive drug or for medicinal purposes. The typical herbal form of cannabis consists of the flowers and subtending leaves and stalks of mature pistillate of female plants. The resinous form of the drug is known as hashish or merely as 'hash'. (Torabi, 1993).

The major psychoactive chemical compound in cannabis is tetrahydrocannabinol (commonly abbreviated as THC). Cannabis contains more than 400 different chemical compounds, including at least 66 other cannabinoids (cannabidiol (CBD), cannabinol (CBN) and tetrahydrocannabivarin (THCV), etc.) which can result in different effects from those of THC alone.

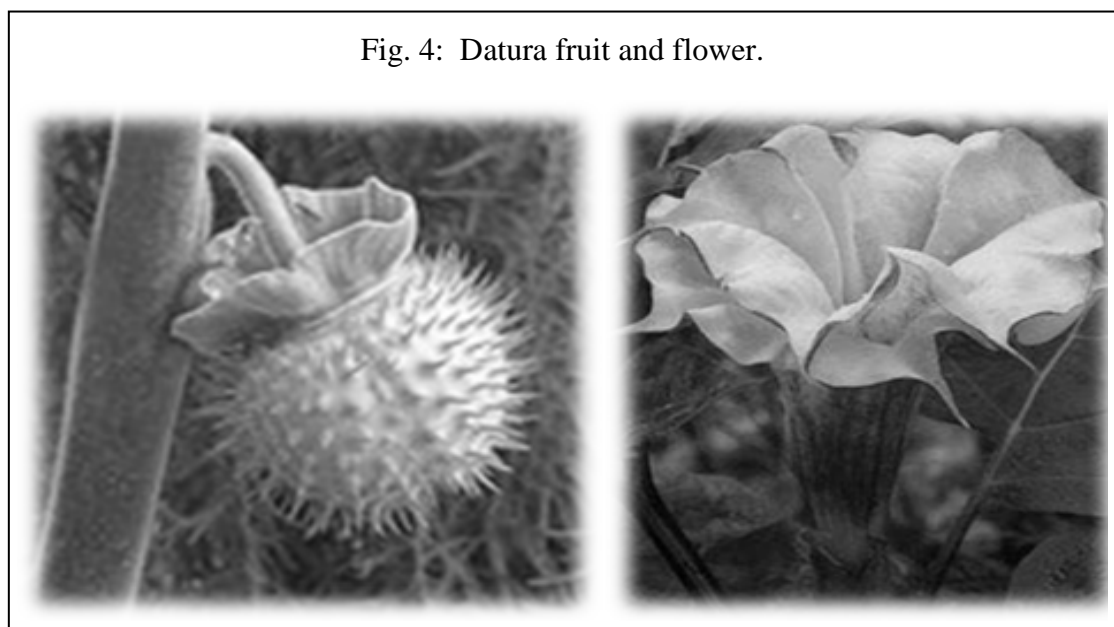


The United Nations estimated that in 2004 about 4% of the world's adult population (162 million people) use cannabis annually, and about 0.6% (22.5 million) use it on a daily basis. The possession, use, or sale of cannabis preparations containing psychoactive cannabinoids became illegal in most parts of the world in the early 20th century. (Torabi, 1993)

Cannabis is consumed in many different ways, most of which involve inhaling vaporized cannabinoids ("smoke") from with cigarettes, chilim, hookah, paper-wrapped joints or tobacco-leaf-wrapped blunts. A gateway hypothesis of cannabis claims that trying cannabis increases the probability that users will eventually use "harder" drugs. Another gateway hypothesis is that while cannabis is not as harmful or addictive as other drugs, a gateway effect may be detected as a result of the "common factors" involved with using any illegal drug. Because of its illegal status, cannabis users are more likely to be in situations which allow them to become acquainted with people who use and sell other illegal drugs. (Torabi, 1993). Some species of marijuana are *Cannabis sativa*, *Cannabis subsp. Cannabis indica* etc.

C) Datura

Datura is a genus of a type of flowering plants belonging to the family Solanaceae. Its precise and natural distribution is uncertain, owing to its extensive cultivation and naturalization throughout the temperate and tropical regions of the globe. Its distribution within Nepal is found mostly in hilly and terrain region.



Datura is herbaceous, leafy annuals and short-lived perennial plant which can reach up to 2 meters in height. The leaves are 10–20 cm long and 5–18 cm broad, with a lobed or toothed margin. The flowers are erect trumpet-shaped, 5–20 cm long and 4–12 cm broad at the mouth; colors vary from white to yellow, pink, and pale purple. The fruit is a spiny capsule 4–10 cm long and 2–6 cm broad, splitting open when ripe to release the numerous seeds. The seeds disperse freely over pastures, fields and even wasteland locations. . (Freye, 2009).

Datura belongs to the classic "witches' weeds," with several religious and cultural associations. Most parts of the plants contain hallucinogens. It was well known as an essential ingredient of love potion and witches' brew. In some religious books of Hindus, it is mentioned as one of the favorite item for lord Shiva.

Due to the potent combination of anti-cholinergic substances it contains, Datura intoxication typically produces effects similar to that of an anticholinergic delirium (as contrasted to hallucination): a complete inability to differentiate reality from fantasy; hyperthermia; tachycardia; bizarre, and possibly violent behavior; and severe mydriasis with resultant painful photophobia that can last several days. Pronounced amnesia is another commonly reported effect. (Freye, 2009).

d) Others

Except tobacco, marijuana, and datura, there are other substances that are rarely used for smoking in rural areas. Some of such items are hashish, heroin, different resins, and gums. Hashish is a product of cannabis plant. It is prepared by accumulation of marijuana plant's resin into semi-solid form. It is believed that hashish originated in West Asia, where the cannabis plant was widely available. The capital city of Nepal, Kathmandu was, once, famous for hashish in the last decades of 18th century because hashish was openly sold there. Several literatures reveal that the western people had named this ancient town as 'hashmandu' for the same. Northern Pakistan has a long social tradition in the production of hashish, known locally as Charas, which is believed to be the same plant resin. Its common form of intake is smoking it with tobacco, marijuana, or other smoking substances and also by inhaling its vapor from a vaporizing

device. Heroin is a drug that falls in morphine category. Its scientific name is diacetylmorphine hydrochloride. It is also known as diamorphine, diacetylmorphine, or morphine diacetate. It is a product of opium plant and found in white powdery form. It is particularly taken through inhalation of its burnt vapors (smoke) heated on a sheet of compact paper using a cigarette. It is very expensive and not so common in the rural areas except insignificant number of addicts who come from town areas for a short period of time. Besides smoking, it is also taken orally or intravenously through injection.

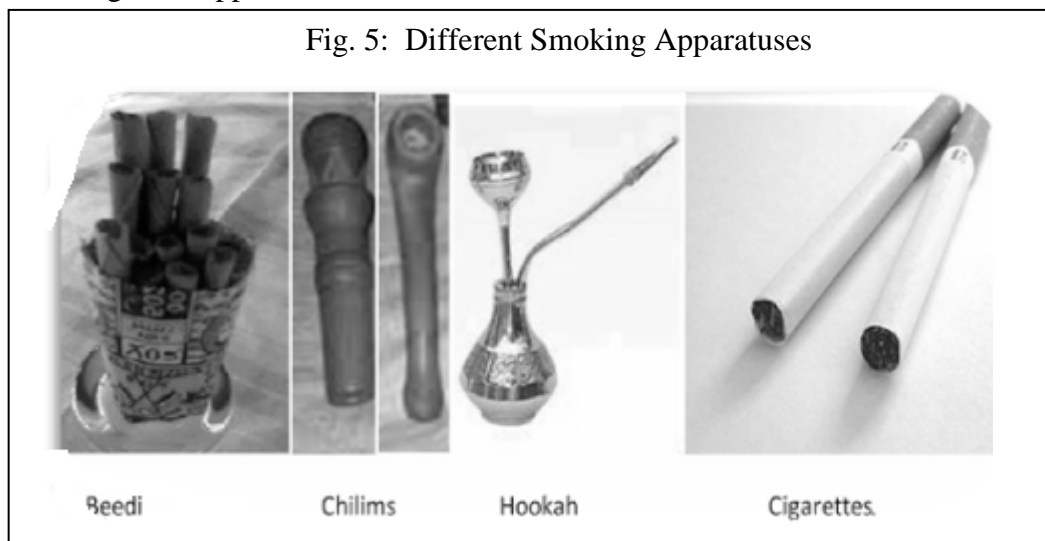
There are other smoking substances used vary rarely by insignificant number of smokers. Some people have habit of smoking some herbs for medicinal purpose. Tulsi and clove are used rarely by some people when there is respiratory problem. Few children of school age inhale the vapor of synthesized gums for rubber tubes (vern: *Suleson and fevigum*) and even petroleum just for the entertainments sake. Besides, some literatures support the practice of smoking powder of dried lizard's shaded tail mixing with tobacco and marijuana.

1.1.5. Smoking Apparatus

Smoke inhalation is always comforted with some of the special devices that have at least two parts: one for burning the substance and other for connection to mouth or nose for inhalation. As smoking has a long history to unknown past, the apparatuses have the same. It is assumed to begin with the use of dried leaves rolls packed with smoking substances and still is in existence. Some of the commonly used smoking apparatus are beedi, cigarette, hookah, chilim, paper-rolls, etc.

- a. Beedi: They are thin, often flavored, south Asian cigarettes made of tobacco wrapped in a sal leaf.
- b. Chilim: A short ice-cream-shaped smoking apparatus made up of hard soil.
- c. Cigarettes: Cigarettes are a product consumed through inhalation of smoke and manufactured from cured and finely cut tobacco leaves and reconstituted tobacco, often combined with other additives, then rolled or stuffed into a paper cylinder.

- d. Cigars: Cigars are tightly rolled bundles of dried and fermented tobacco, which is ignited so its smoke may be drawn into the smoker's mouth.
- e. Hookah: Waterpipe, a wooden smoking apparatus with upper burner pipe, water container, and an inhalation pipe. Smoke passes through water before inhalation through this apparatus.



- f. Rlollies: Often called 'roll ups or roll-your-own', are prepared from loose tobacco, cigarette papers and filter all bought separately. They are usually much cheaper to make.

1.2. Statement of the Problem

Smoke that is emerged out from a smoking device contains numerous toxicants known to cause lung cancer, heart disease, and other diseases. The tobacco smoke delivers the addictive drug nicotine and more frequent use is associated with the smokers being addicted. Smoking also causes several diseases like asthma, oral cancer, stomach cancer, hypertension, depression, blurred vision, indigestion, cough, etc. It has a peculiar nature of accelerating ageing in rapid way. Aggregate health status of people living in the study area seems very poor. Many people consult the local health post with various complaints of cough, asthma and other similar smoking-related diseases. Indigenous Tharu and migrated Brahmin, both the groups of people, living in the study area seem to have higher level of smoking behavior. It was felt essential to study their smoking pattern with behavioral comparison. This research aims to explore the comparative smoking behavior between the above-mentioned two ethnic groups.

Few studies held in the research area have mentioned about the smoking-related health problems within the study area. Some of them are found to be concentrated to health problems including communicable diseases, epidemics, disabilities, nutrition, sanitation, and arsenic toxicity. But the studies have included more about the findings of smoking prevalence and its consequences. Lack of formal schooling, smoking habit and dependent status were associated with higher prevalence of diseases.

Karuna Foundation Nepal, a non-government organization, has initiated various projects in the study area since 2065 BS in Madhesha VDC of Sunsari district. This organization is working for the promotion of community health with some of its projects. Tobacco and marijuana smoking, chewing tobacco in form of khaini and gutkha, drinking homemade alcohol are the major substances of addiction in this village.

Though, the above mentioned organizations and their studies at different point of time revealed that the smoking various substances is one of the major health problems of the study area, a focused study has not been found to be held. This research will be conducted in order to carryout a comparative study of smoking behavior between two ethnic groups of people living in the study area. There are various forms of smoking with different smoking apparatus and addictive substances. Some of the apparatus are papers, dry leaves of sal tree, soil-constructed Chilim and wooden hookah etc. The common substances are tobacco, marijuana, and dhatura. Though, there are different kinds of apparatus and substances, the use of these things are not common in indigenous and migrated people. And hence, the adverse health effects of these substances are also different in these different ethnic groups. The proposed research aims to find the facts regarding different modes of smoking and corresponding health risks associated with them.

Nepal government has banned smoking in the public place recently. The implementation of this act is impossible unless the smoking behaviors of smokers of different groups are not taken under considerations.

In the scenario of comparatively more rate of smoking prevalence in our societies and a number of distinct disease-inducing natures of smoking, it becomes matter of nation's health status.

1.3. Objectives of the Study.

1.3.1. General Objective:

To compare the smoking behavior between the indigenous Tharu and migrated Brahmin population.

1.3.2. Specific Objectives:

The study has the following specific objectives:

- i. To calculate the usage rates of tobacco, marijuana, dhatura and other smoking substances used by Tharus and Brahmins in the study area.
- ii. To calculate the usage rates of different forms of smoking apparatus i.e. paper rolls, chilim, hookah, etc. used by Tharus and Brahmins in the study area.
- iii. To state the comparative statuses of the above calculations for both Tharus and Brahmins with each other and with the contemporary average national and international usage rates.
- iv. To find and compare the trigger factors of smoking initiation among Tharus and Brahmins in the study area.
- v. To compute the correlation coefficient between usage rates of smoking in Tharu and Brahmin population in the study area within their different age group.

1.4. Research Questions

The study is based on the following research questions:

- i. What substance do Tharus and Brahmins use in smoking?
- ii. What device do they use for smoking?
- iii. Which group of people use higher have higher smoking
- iv. What is the comparative status of their smoking behavior in relation to the contemporary national and international data?
- v. Why do they smoke?

- vi. What are the influencing variables to adopt the smoking habit among Tharu and Brahmin people?
- vii. Does the correlation exist between the smoking rates between the two groups of people?
- ix. What is the correlation coefficient between the two groups of populations under study?

1.5. Rationale of the Study

Smoking is one of the major causes of various diseases in rural communities of developing countries. (Mukharjee, 2004). Tobacco and marijuana smoking, chewing tobacco in form of khaini and gutkha, drinking homemade alcohol are the major substances of addiction in this village. (KFN/SWC 2010). There are high rate of smoking-borne diseases in the village areas of Nepal. Though, smoking in public places has been banned by the national law, it has become still an unsolved problem in our community. (VSSCC, 2010). In this context, there was a need of an appropriate study on smoking situation in Madhesha VDC. Smoking is regarded as an inherited tradition in Tharu families. It is seen highly prevalent in Brahmin families too. The study area, 'Jhakanjhora' is occupied by majority of these two ethnic groups of people; the site has been selected for the proposed study. Smoking behavior is the practice of smoking of any kind of euphoric substance in the form of cigarette, bidi, chimil, hookah, paper, etc. The smoking habit, rates of intake, and the adverse consequences all are directly or indirectly determined by the smoking behavior. Therefore, the researcher aims to carryout the study on comparative smoking behavior between these two ethnic groups.

Smoking causes different types of diseases. Smoke emitted from smoking substances contains toxic substances like nicotine, tar, and other several carcinogens. People may or may not know about its various types of harmful effects as per their educational, socio-cultural, and family background. The study area is not an exception of superstitious beliefs, lack of education, socio-cultural boosting for smoking, and lack of awareness. In such context, the rationale of the research can have a significant value.

The research study has kept its focus on the target population in the study area. The target population included two ethnic groups of people. They are indigenous Tharu and migrated Brahmin people. The study has tried to explore the comparative situation of smoking behavior between the indigenous Tharu and migrated Brahmin people of the study area. It will be helpful in analyzing the relationships between the variables taken under studies. The variables are the nature of smoking, knowledge of smoking and the effects of smoking on human health. Therefore, this study will be helpful in correcting the smoking behavior of the target population. Being limited with a number of constraints, the study has explored the different toxic, carcinogenic, and hallucinogenic substances used in the study area. And, it may be helpful in controlling the use of these substances in the days to come. There need a proper framework for planning and implementing different programs to prevent the smoking behavior among smokers. This study will be a useful guideline for the GOs, NGOs, INGOs, and UN agencies for that purpose. The study recommends the concerned agencies for formulation of short-term as well as long-term strategy to minimize the smoking practices. Last, but not the least, this study will be a useful source of literature for the future researches in the related field.

1.6. Limitations and Delimitations of the Study

Every study has its own limitation due to limited resources, materials, constraint time, and place. The delimitations of the study are:

- a. The study was conducted in a small area i.e. 'Jhakanjhora' tole of Madhesha VDC of Sunsari district.
- b. The study is related with only two ethnic groups of people. They are Tharu and Brahmin people.
- c. The study has limited time period for its completion. The total time span of the study is six months that ranges from Feb 20, 2011 to Aug 21, 2011 AD.
- d. The study was completed with limited financial resources. Its estimated budget was just Rs. 17,000.
- e. Only a limited human resources and materials has been another limitation of the study. Lecturers available at the campus, VDC personnel, locally active

organization members, locally available experts, and the respondents of this study were the consulted personnel for the purpose of this research study.

- f. This study could not have access on those activities which are beyond the available resources.

1.7. Definition of the Terms

Some of the terms that may have specific definitions in this study are as follows:

- a. Animism: The belief that natural objects have souls that may exist apart from their material bodies.
- b. Chewing tobacco: It is the oldest way of consuming tobacco leaves. It is consumed orally. When consuming the shredded tobacco, small amounts are placed at the bottom lip, between the gum and the teeth, where it is gently compacted, thus it can often be called dipping tobacco.
- c. Creamy snuffs: They are tobacco paste, consisting of tobacco, clove oil, glycerin, spearmint, menthol, and camphor, and sold in a toothpaste tube.
- d. Dhatura: Throne apple, a small shrub with broad leaves and thorny fruit. Botanical name – *Dhatura stramonium*.
- e. Dipping tobaccos: Dipping tobaccos are a form of smokeless tobacco. Dip is occasionally referred to as "chew", and because of this, it is commonly confused with chewing tobacco, which encompasses a wider range of products. A small clump of dip is 'pinched' out of the tin and placed between the lower or upper lip and gums.
- f. Euphoria: A feeling of great happiness or well-being. Often caused due to intake of euphoric drugs.
- g. Gutka: Gutka is a preparation of crushed betel nut, tobacco, and sweet or salty flavorings in small, individual-size packets.
- h. Hallucination: The substances that cause hallucination.
- i. Hallucinogen: Perception of visual, auditory, tactile, olfactory, or gustatory experiences without an external stimulus and with a compelling sense of their reality, usually resulting from a mental disorder or as a response to a drug.
- j. Hyperthermia: A condition of increased body temperature.
- k. Kankad: Grinded tobacco put in the upper part of Chilim.

- l. Marijuana: Hemp plant, a type of recreational drugs, the dried leaves and flowers of the hemp plant, used for its euphoric effects, especially in the form of cigarettes.
- m. Mongoloid: Looking like Mongols, similar to Mongols.
- n. Smoking behavior: It is the practice of smoking of any kind of euphoric substance in the form of cigarette, bidi, chimil, hookah, paper, etc.
- o. Smoking: Process of taking smoke of tobacco, marijuana, and dhatura through the respiratory route.
- p. Snuff: A generic term for fine-ground smokeless tobacco products. Originally the term referred only to dry snuff, a fine tan dust popular mainly in the eighteenth century.
- q. Tachycardia: Rapid heartbeat.
- r. Tobacco water: It is a traditional organic insecticide used in domestic gardening. Tobacco dust can be used similarly. It is produced by boiling strong tobacco in water, or by steeping the tobacco in water for a longer period. When cooled, the mixture can be applied as a spray, or 'painted' on to the leaves of garden plants, where it kills insects.
- s. Topical tobacco paste: It is sometimes recommended as a treatment for wasp, hornet, fire ant, scorpion, and bee stings. An amount equivalent to the contents of a cigarette is mashed in a cup with about a 0.5 to 1 teaspoon of water to make a paste that is then applied to the affected area.
- t. Toxic: Poisonous

CHAPTER TWO: REVIEW OF LITERATURE

2.1. Review of the Related Literature.

2.1.1. Theoretical Literature of the Study

The age at which children begin to smoke is on a continual decline, with an estimated 60% of smokers starting by age 13 and 90% beginning by age 20. The prime age for tobacco use is 12-14 years. The younger the age of smoking initiation, the less likely that a person will ever quit. (Meier, 1991).

The proposed theoretical framework was derived from the literature linking different concepts to smoking behaviors and from literature that supports recommended intervention methods. Bandura's (1977, 1986) Social Cognitive Theory and the Theory of Reasoned Action given by Ajzen & Fishbein in 1980 were also used as theoretical perspectives to help describe linkages of various concepts.

Bandura's Social Learning Theory (1977), renamed as Social Cognitive Theory (1986), is useful in understanding the psychosocial dynamics underlying behaviors. The theory provides a perspective for identifying methods, which can be utilized to promote certain behaviors. The basic premise of Social Cognitive Theory is that the expectation of personal mastery and success influences whether or not an individual will engage in a particular behavior. According to this theory, behavior is determined by expectancies and incentives, as perceived by an individual.

Incentives are the value of a particular outcome, including health status, physical appearance, peer approval, economic gain, or other consequences (Blair, 1993). Values are subjective; their meanings are interpreted and understood by the individual (Rosenstock, Strecher, & Becker, 1988).

Expectancies are also subjective beliefs that a person has regarding a particular outcome. Two types of expectancies exert powerful influences on behavior: outcome expectancy and self-efficacy expectancy (Salazar, 1991). Outcome expectancy is the conviction that certain behaviors lead to certain outcomes, therefore reflecting the consequences of one's own actions (Blair, 1993). Self-efficacy expectancy is the conviction that one can successfully execute the behavior required to produce an outcome. It is expectancy about one's own competence to perform a behavior (Blair, 1993). The cognitive mechanism of self-efficacy is posited by Bandura (1977, 1986) to be the most powerful mediator of behavior performance. It can provide a foundation towards the addiction of smoking behavior.

Underlying these expectancies are the individual's beliefs regarding outcome and self-efficacy, it is the perception of these expectations that influence behavior. People often do not behave optimally, even though they have the appropriate knowledge. A person's belief in the ability to perform or not perform a behavior is an important link between knowing what to do and actually doing it (Bandura, 1982). If self-efficacy beliefs are weak, people tend to behave ineffectually, even though they know what to do. The concept of self-efficacy does not, however, imply that efficacy and outcome expectations are the sole determinants of behavior. Appropriate skills and adequate incentives are also necessary components of behavior decisions (Salazar, 1991).

According to Bandura (1977), a person's self-efficacy beliefs may influence whether appropriate behaviors will be initiated and sustained in the face of obstacles. These beliefs are concerned with judgments of how well a person can successfully execute specific behaviors in specific situations (Bandura, 1982). Researchers have indicated that perceptions of self-efficacy to resist smoking in sixth, seventh, and eighth graders are associated with their self-reported smoking behavior (Lawrence & Rubinson, 1986). Successful interventions designed to prevent or eliminate smoking behaviors would be expected to increase self-efficacy expectations supporting the preteen's ability to resist or refuse to engage in smoking behaviors (Bandura, 1977, 1982) postulated that self-efficacy can be increased or enhanced through positive role modeling and by learning new skills to manage threatening activities. This position has been supported by research on smoking and exercise in adults (Conditte & Lichtenstein, 1981), and diet and exercise in children. Self-efficacy is broadly conceptualized in this framework,

encompassing many aspects of a preteen's personality, with refusal skills being only one component. Bandura (1977) maintained that to assist with problem solving and the development of refusal skills, positive strategies must be reinforced. One way this can be done is by providing peer feedback during role-playing activities. The success of these strategies may be determined by assessing the individual's expectations for success in refusing to engage in specific behaviors (Bandura, 1977).

Behavioral Theory: Theory of Reasoned Action

The Theory of Reasoned Action (Ajzen & Fishbein, 1980) is another behavioral theory that is useful in understanding factors that influence smoking behaviors. A key difference in the Theory of Reasoned Action and other behavioral theories is in the ultimate measurement of behavior. Actual behaviors are usually observed or reported following interventions, but this theory suggests measuring the person's intention to perform a behavior rather than the behavior itself (Ajzen & Fishbein, 1980). This idea is especially useful when studying behaviors a person may not have yet experienced.

According to the Theory of Reasoned Action (Ajzen & Fishbein, 1980), intention is a function of two determinants: attitude and subjective norm. Attitude toward a behavior is a personal evaluation that performing a behavior is positive, negative, or somewhere in between. Subjective norm, which is social in nature, is the person's perception of social pressures to perform or not perform a behavior. According to this theory, an individual will generally intend to perform a behavior he or she evaluates positively and believes significant others think he or she should perform.

Both of these determinants of intentions are influenced by a belief system (Ajzen & Fishbein, 1980). Behavioral beliefs underlie and determine a person's attitudes. Attitude is, therefore, personal in nature and a function of the individual's beliefs about outcomes of a behavior and his or her positive or negative evaluation of those outcomes.

Subjective norms are a function of the person's beliefs that specific significant individuals or groups think he or she should or should not perform the behavior. The subjective norm is a function of these beliefs as well as the individual's motivation to comply with the perceived wishes of their significant others (Ajzen & Fishbein, 1980).

The individual's evaluation of the outcomes of a behavior and motivation to comply with the perceived wishes of significant others are similar to Bandura's conceptualization of incentives.

Although more widely seen in relation to adults, the Theory of Reasoned Action has been utilized in the literature to examine tobacco and smoking-related attitudes, beliefs, intentions, and behaviors in adolescents aged 12-18, children in fifth grade, and children in sixth grade. M. Fishbein asserted that the ability to think abstractly is not an assumption of this theory and not necessary for it to be useful. He maintained that it would be appropriate for use with students in upper elementary school grades, as well as in middle school and high school grades. It may be more difficult, however, to utilize this theory with young people who are not yet in the formal operational stage of cognitive development. (Flay, 1994)

Psychoanalytical Theories of Addiction

The theory supporting psychodynamic therapy originated in and is informed by psychoanalytic theory. There are four major schools of psychoanalytic theory, each of which has influenced psychodynamic therapy. The four schools are: Freudian, Ego Psychology, Object Relations, and Self Psychology.

Freudian psychology is based on the theories first formulated by Sigmund Freud in the early part of this century and is sometimes referred to as the drive or structural model. The essence of Freud's theory is that sexual and aggressive energies originating in the id (or unconscious) are modulated by the ego, which is a set of functions that moderates between the id and external reality.

Defense mechanisms are constructions of the ego that operate to minimize pain and to maintain psychic equilibrium. The superego, formed during latency (between age 5 and puberty), operates to control id drives through guilt. Ego Psychology derives from Freudian psychology. Its proponents focus their work on enhancing and maintaining ego function in accordance with the demands of reality. Ego Psychology stresses the individual's capacity for defense, adaptation, and reality testing. Learning drug abuse or smoking is also a result of such interaction of id, ego, and superego.

Object Relations psychology was first articulated by several British analysts, among them Melanie Klein, W.R.D. Fairbairn, D.W. Winnicott, and Harry Guntrip. According to this theory, human beings are always shaped in relation to the significant others surrounding them. One can learn smoking behavior as stated by his theory.

Our struggles and goals in life focus on maintaining relations with others, while at the same time differentiating ourselves from others. The internal representations of self and others acquired in childhood are later played out in adult relations. Individuals repeat old object relationships in an effort to master them and become freed from them.

Self Psychology was founded by Heinz Kohut, M.D., in Chicago during the 1950s. Kohut observed that the self refers to a person's perception of his experience of his self, including the presence or lack of a sense of self-esteem. The self is perceived in relation to the establishment of boundaries and the differentiations of self from others (or the lack of boundaries and differentiations). "The explanatory power of the new psychology of the self is nowhere as evident as with regard to the addictions" The ingestion of the drug provides him with the self-esteem which he does not possess. Through the incorporation of the drug, he supplies for himself the feeling of being accepted and thus of being self-confident; or he creates the experience of being merged with the source of power that gives him the feeling of being strong and worthwhile (Blaine, 1977).

Kohut postulated that persons suffering from substance abuse disorders also suffer from a weakness in the core of their personalities--a defect in the formation of the "self." Substances appear to the user to be capable of curing the central defect in the self.

Each of the four schools of psychoanalytic theory presents discrete theories of personality formation, psychopathology formation, and change; techniques by which to conduct therapy; and indications and contraindications for therapy. Psychodynamic therapy is distinguished from psychoanalysis in several particulars, including the fact that psychodynamic therapy need not include all analytic techniques and is not conducted by psychoanalytically trained analysts. Psychodynamic therapy is also conducted over a shorter period of time and with less frequency than psychoanalysis.

No one theory addresses all the complexities that constitute various behaviors. Using elements of more than one theory may be useful in attempting to understand smoking behaviors of people.

2.1.2. Empirical Literature of the Study

P.N. Dhakal, held an investigation on ‘Smoking behavior of house-wives and its effect on their health in Tarku VDC, Lamjung’ in 2008 AD. He has mentioned that majority of the housewives learned smoking cigarettes from the age of 15 years to 25 year and continued up to the present time. The number and frequency of cigarette smoking for majority of the respondents ranged from 5 to 10 times per day and most of them spend five rupees per day in buying cigarettes in average. The study found that majority of the respondents were suffering from continuous cough, pain in throat and chest, stomach pain, headache, visual imbalance and disturbances, loss of appetite, dry mouth cavity, etc. as the effects of smoking behavior. Very few housewives wanted to quit their smoking behavior due to the pressure of their family members as well as the harmful effects of smoking on their health. (Sherchan, 2010).

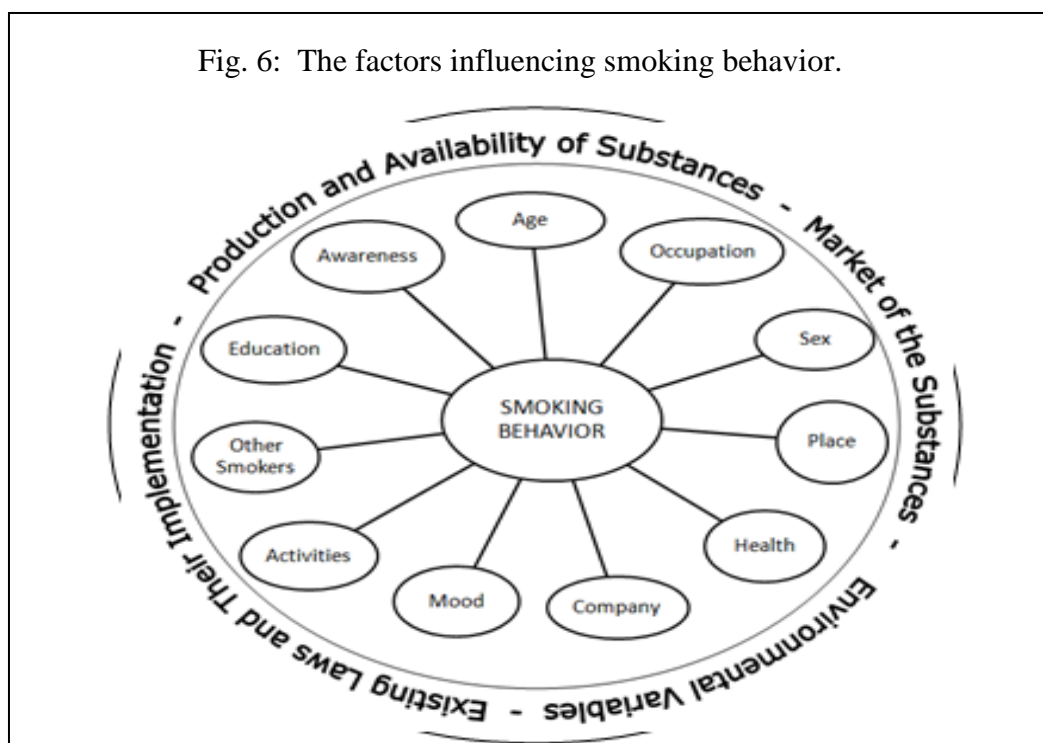
The world’s leading health organization, WHO, published its health report in 2010 in its yearly publication. According to this report, smoking-related total number of deaths is about 4 million per year including about 11,000 deaths per day. Similarly, total male and female smokers in the world were 47 percent and 17 percent of the total global population.

WHO has estimated that the total annual smoking-related number of deaths will be double by 2020 AD. Out of total smoking-related deaths, more than 70% deaths occur in the developing countries like ours. (WHO, 2010).

In Nepal, a large portion of the adult population smoke. According to statistics, 60.145% of male adults and 19.969% of female adults are smokers in Nepal. Similarly, 12.358% of youths under the age of 15 years smoke. Among the under-15-year young children, 6.037% are females and remaining are males. (Source: United Nations Population Division, World Population Prospects, 2000 revision)

2.2. Conceptual Framework of the Study.

Literally, smoking implies to take smoke through oral or nasal route. Smoke is taken for different purposes. One of the main purposes is to satisfy the need caused due to addiction. Smoking behavior is affected by various factors like age, sex, occupation, health status, mood, others support or accompany, religious and cultural norms etc. The influencing variables are found different in every ethnic group. There may be addiction for different toxic components. These toxic substances are produced from tobacco, marijuana, dhatura, hashish, etc. Smoking has been practiced from the time of antiquity in almost all the communities in Nepal and, perhaps, all over the world. In the past, the hazards of effects of smoking were not known well. Some people even thought that it protects the health from harmful germs. Later on the toxic substance ‘nicotine’ was discovered and other various toxins including tar present in smoking substances were found to be harmful for human health. With the advancement of human knowledge about drugs, toxins, and addictions, people knew about its hazardous effects too.



In some parts of the world, smoking substances are easily available. In these places, the smokers can obtain the desired substances at an affordable price. Such situation plays a significant role in promotion of smoking behavior of the smokers. Similarly, the market which are liberal and flexible for smoking substances facilitate the smoking habits of

people. Smoking is very common in cold parts of the world. This may be because of its immediate feeling of virtual warmth in the smokers. Legal provisions like higher taxations on smoking substances, strict rules against smokers, and tough legal constraints for the producers of smoking materials suppress the smoking behavior of people. Besides, age, occupation, mood, sex, state of health, education and awareness also determine the peoples' smoking behaviors.

Many smokers smoke knowing that it is harmful for health. Most of the smokers in the world are addicted and therefore, they can hardly give off smoking even if they know about its bad effects. There is a wide variation in the substances used in smoking. Some of common substances which are probably used in the study area are tobacco, dhatura, and marijuana.

CHAPTER THREE: METHODOLOGY

3.1 Research Design

The research has been carried out to compare the smoking behavior between Tharus and Brahmins at the study area. A non-experimental, quantitative, and descriptive research design has been preferred to carry out the research study.

3.2. Population of the Study

There are 89 Tharu families and 63 Brahmin families living at the study area. Total population of Tharus and Brahmins are 432 and 256. Out of the total population of Tharus, 268 (62.037%) are smokers and remaining are non-smokers. Similarly, only 81 (31.64%) of Brahmins are smokers and remaining are non-smokers. In this way, the total population under study is 688. Among them, 349 are smokers and 339 are non-smokers.

Table 1. Population of the Study

Cast/ Ethnicity	Total Population	Smokers				Non-smokers	
		Number			Total smokers %	Number	%
		Male	Female	Total			
Tharu	432	156	112	268	62.04%	164	37.96%
Brahmin	256	59	22	81	31.64%	175	68.36%
Total	688	215	134	349	50.73%	339	49.27%

Source: (Karuna Foundation Nepal/Social Welfare Council, Sunsari, *Final Report of Midterm Evaluation*, 29 Oct 2010).

3.3. Sampling Size and Sampling Procedure

3.3.1. Sample Size

The research has its general objective to compare between two ethnic groups of the study area. Therefore, two sets with equal number of respondents i.e. 50 subjects from

each of the groups were selected for the study making the total number of respondents 100. It is 14.53% of the total target population of the study area.

3.3.2. Sampling Methods (Sampling Procedure)

The researcher has adopted stratified and systematic sampling methods. They were categorized into five groups, on the basis of equal age intervals, in increasing order making five strata in each group in order to facilitate the comparative study between the two groups of populations within similar age group. This step of sampling has provided the feature of stratified sampling. They were, then, ranked according to the alphabetical names of their name initials. Ten smokers were then selected from equal intervals of the ranked list of smokers of each group according the technique of systematic sampling method. In this way, there were 50 respondents from each group of population making 100 respondents altogether. As the research had a focal aim to compare between two ethnic groups of the study area, sampling method has been selected carefully to assist its goal.

The sample sizes of the study populations are made equal rather than proportional. Because, the study is not concerned with what portion of total Tharus or total Brahmins smoke within their own population but with the behavioral differences regarding what portion of Tharus and Brahmins from their equal sizes show differences in their specific smoking behavior. It is a comparative study of their behavior which is related to their smoking habits.

3.4 Tools of Data Collection.

Individual interview schedule, questionnaire, and survey forms have been used as the tools of collecting data from the respondents.

Individual interview schedule is an effective tool for data collection even for illiterate respondents. It can be effectively used for literate respondents as well. The interview process encompasses warming up questions, rapport building questions, and the questions related to the information about their smoking behavior. As the respondents answer during the interview procedure, their answers are carefully noted for further utilization in the study. The interview is taken by the researcher himself.

The questionnaires include both closed and open-type questionnaires to receive information from the respondents. Survey forms are used specially for the respondents' demographic information.

3.5. Validation and Standardization of Tools.

The proposed survey forms and interview schedules were put on discussion and rectification to the research guide provided to the researcher. The tools and instruments were, then, submitted to the Department of Health and Physical Education of Sukuna Multiple Campus. Then, the tools were scheduled to be taken for a small scale preliminary pilot study to test their effectiveness and to explore probable deficiencies, errors, and weaknesses. For the purpose of pilot study, 20 inhabitants of a neighborhood area (Karki Tole) of the target area was selected because of the high degree of similarities of demographic, ethnic, economic, religious and socio-cultural aspects of people living in these two areas. The tools were amended again for the rectification of errors and weaknesses. The tools were finalized on the basis of feedbacks and approval of the department. In this way, the researcher has used approved, valid, and standardized tools and instruments with the respondents.

3.6. Data Collection Procedure

3.6.1. Sources of Data

The research study has utilized both the primary and secondary sources of data. The selective respondents are the primary source. The office of Village Development Committee (VDC), Karuna Foundation Nepal, Social Welfare Council, Madhesha VDC Office, different books, reports, newspapers, other media, journals etc. are the secondary sources of data for this study. In this study, close and open questionnaire has been used to collect the primary data from the respondents.

3.6.2. Administration of Tools

The tools have been developed for the proper collection of data. The survey forms and questionnaire have been filled by the researcher itself after interviewing and asking the questionnaire. These data were compiled and put forward for its analysis and interpretations.

3.6.3. Ethical Considerations

Ethical considerations have been given high importance during the process of data collection. Respect to the respondents interpersonal matters, cultural and religious norms, and values are given proper importance. The elements like harm to the participants, invasion of privacy, deception, dishonesty, and fraudulence were forbidden as far as possible.

3.7. Method of Data Analysis and Interpretation

All the obtained data have been carefully checked and compiled after completion of the data collection procedure. They have been verified manually to reduce possible errors. Collected data and information are placed in different tables, graphs and charts as per the necessity. After that, obtained data are compared, analyzed, and interpreted with the guideline of objectives of the research. Related literatures have been kept under focus and quantitative and descriptive conclusions are extracted out.

CHAPTER FOUR: PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

For the purpose of statistical, analytical and descriptive study of the smoking behaviors of Tharus and Brahmins, one hundred smokers from both the groups of population were sampled in the study area in Jhakanjhora tole of Madhesha VDC in Sunsari district with standardized tools. Data are tabulated and analyzed with mathematical, statistical and descriptive methods. This chapter includes the statistical and graphical presentation with analysis and interpretation of data. The results of the study are presented in tabular form, graphical form, narrative form and statistical calculations as per the need as given below. This chapter includes following aspects of the study.

- A. Socio-Demographic and Socio-Cultural Information
- B. Information Related to Smoking Behavior

4.1. Socio-Demographic and Socio Cultural Information

Socio demographic and socio cultural aspects influence the behavior of people. Age factor, marital status, religion, educational status is the major components which determined personal knowledge, behavior and attitude.

People are highly influenced by the social and cultural circumstances. Youths are falling in smoking habit day by day. They are taking it as a fashion and for enjoyment. Even females are involved in smoking and drug abuse.

Though, Tharus and Brahmins both are Hindus and their socio-cultural values and practices have several similarities, few customs, rituals, lifestyles, family types, family sizes, major occupations, level of educations, knowledge, awareness, marital statuses, and ways of celebrations may be contributing in creating differences in smoking behaviors between them. In the below table the situation of the data related to topic is presented.

Table 2: Distribution of respondents by
Socio-Demographic and Socio Cultural Characteristics

	Characteristics	Tharu Smokers		Brahmin Smokers	
		Frequency	Percentage	Frequency	Percentage
Sex	Male	29	58%	39	78%
	Female	21	42%	11	22%
Marital Status	Married	32	64%	38	76%
	Unmarried	18	36%	12	24%
Education level of the respondents	Illiterate	12	24%	2	4%
	Literate/Some school classes	28	56%	13	26%
	Secondary/Higher Secondary	7	14%	24	48%
	Bachelor/Masters/ or above	3	6%	11	22%
Family Type	Nuclear	14	28%	32	64%
	Joint	36	72%	18	36%
Occupation	Agriculture	25	50%	13	26%
	Business	3	6%	4	8%
	Service	10	20%	21	42%
	Dependent	12	24%	12	24%

The above table gives information about different socio-cultural and socio-demographic statuses of the respondents. According to the data obtained with the general survey on the respondents, the ratio of male and female smokers among Tharus and Brahmins are 58:42 and 78:22. This shows that the smoking prevalence among females is higher in Tharu population. The global gender ratio (male to female) of smokers is 73:27 according to the World Health Organization. The situation in the study area is different among Tharus and Brahmins. This ratio is higher in Tharus and lesser in Brahmins. Similarly, married and illiterate people were found to be involved in smoking activities. Similarly, there are more smokers in joint families than in nuclear families. People with agriculture as their main occupation smoke higher in both the Tharu and Brahmin populations in the study area. The above-given data can be presented in different pie-charts below.

Fig. 7. Gender Ratio (Male : Female) among Tharus and Brahmins

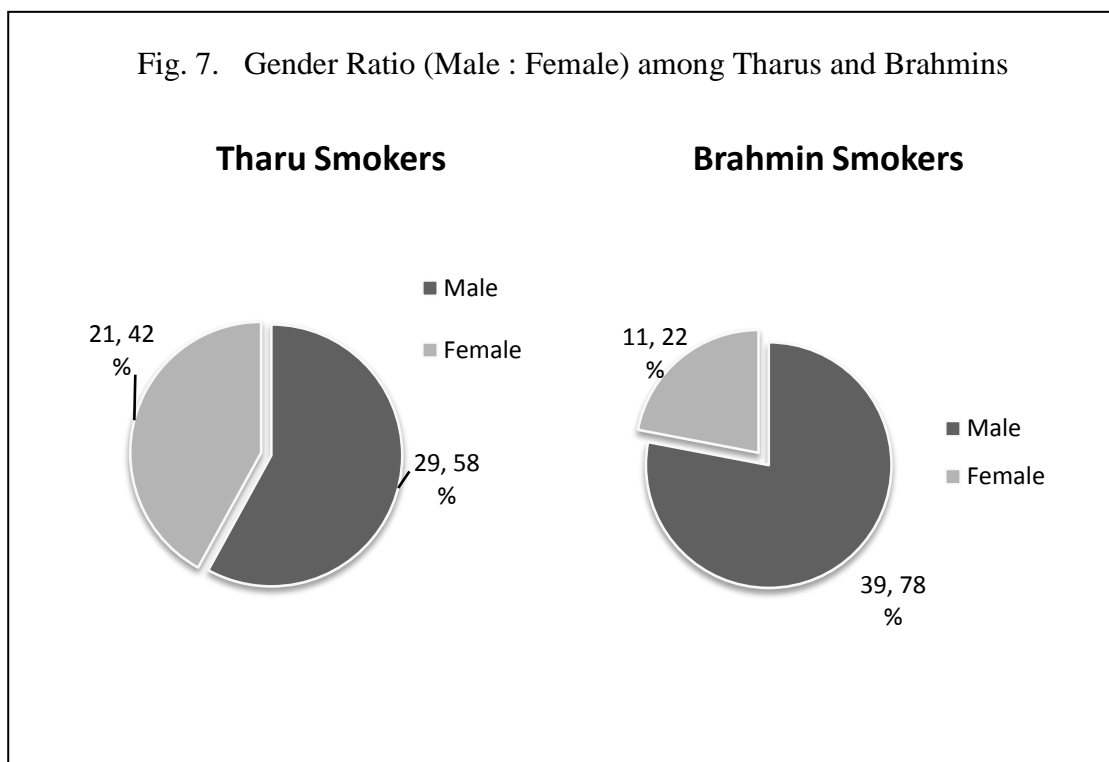


Fig. 8. Marital Ratio (Married : Unmarried) among Tharus and Brahmins

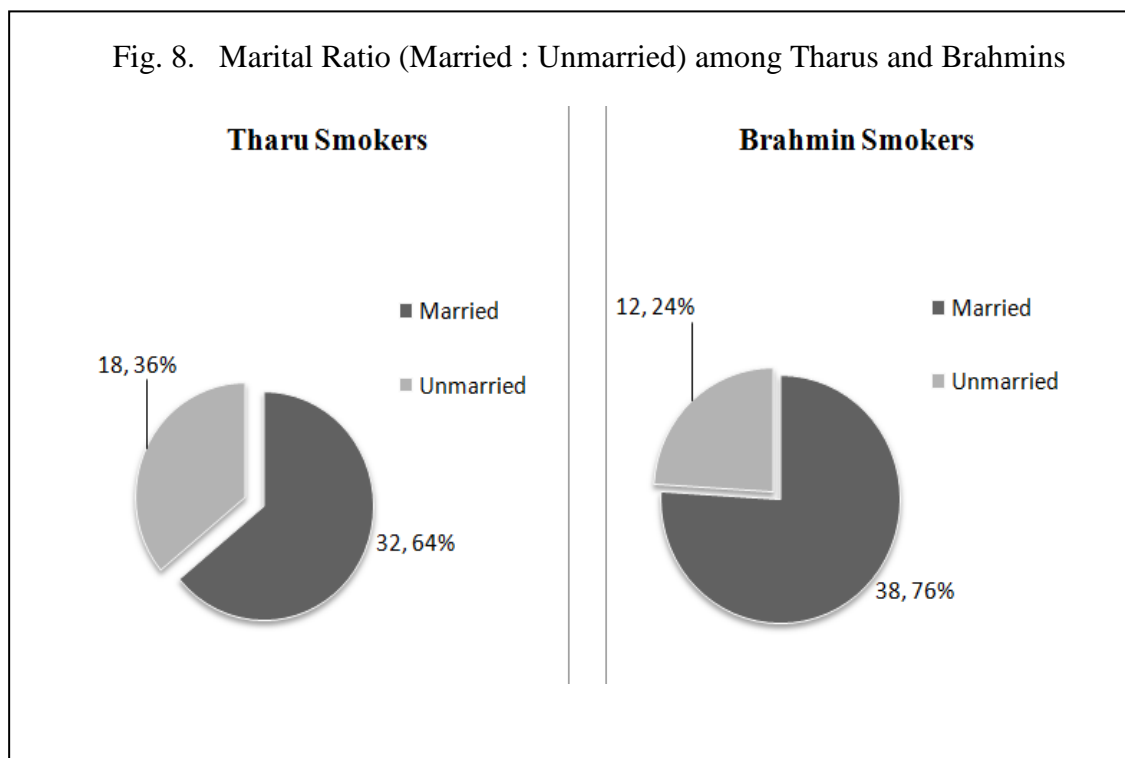


Fig. 9. Educational Statuses of Tharu and Brahmin smokers

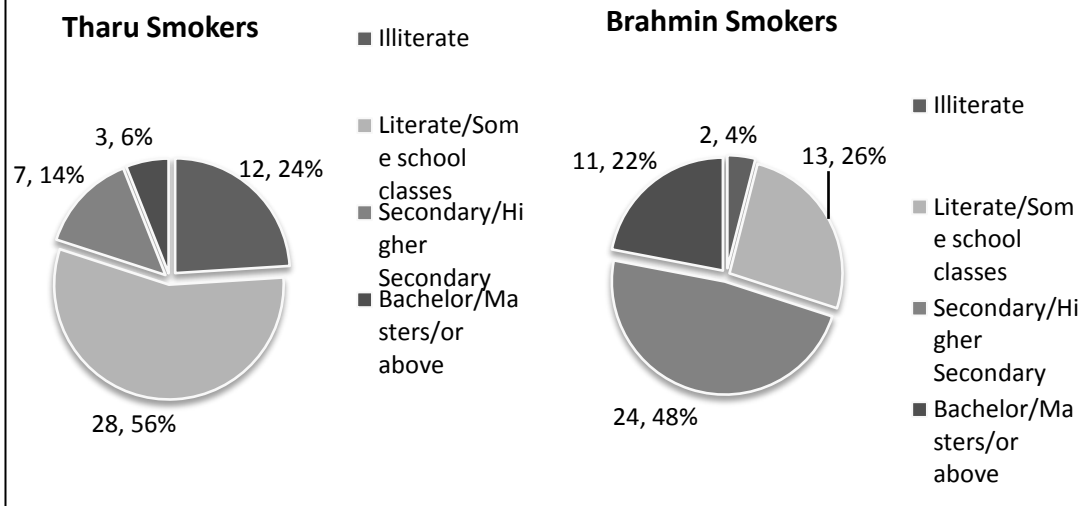


Fig. 10. Family Type (Nuclear/ Joint) of Tharu and Brahmin smokers

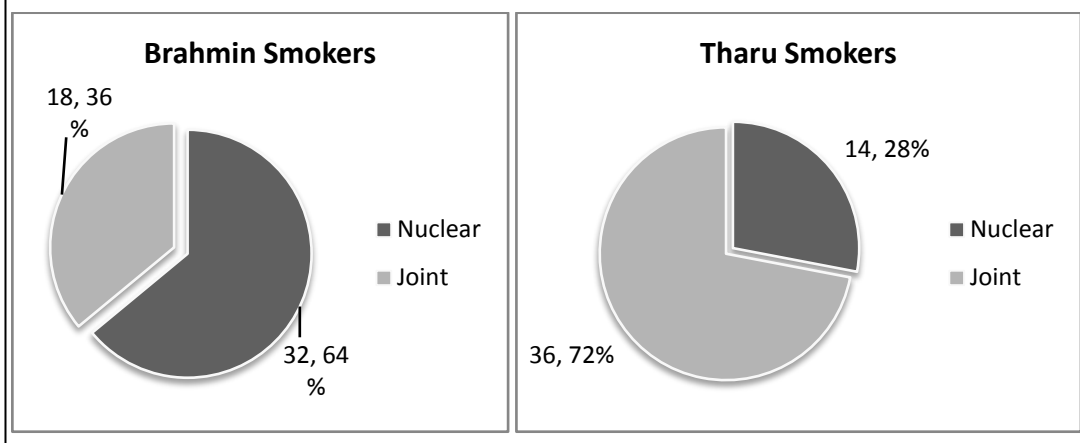
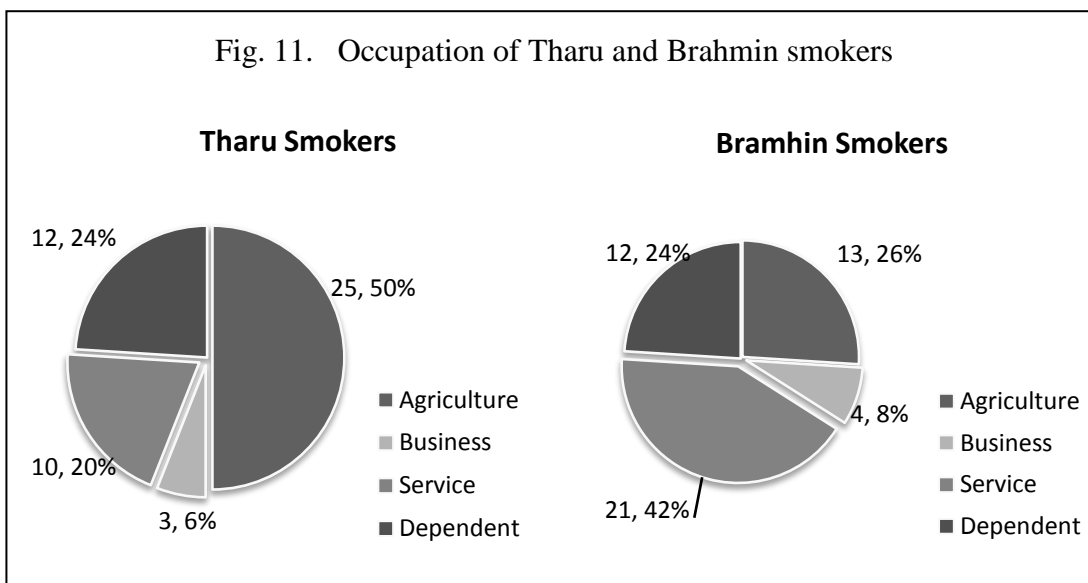


Fig. 11. Occupation of Tharu and Brahmin smokers



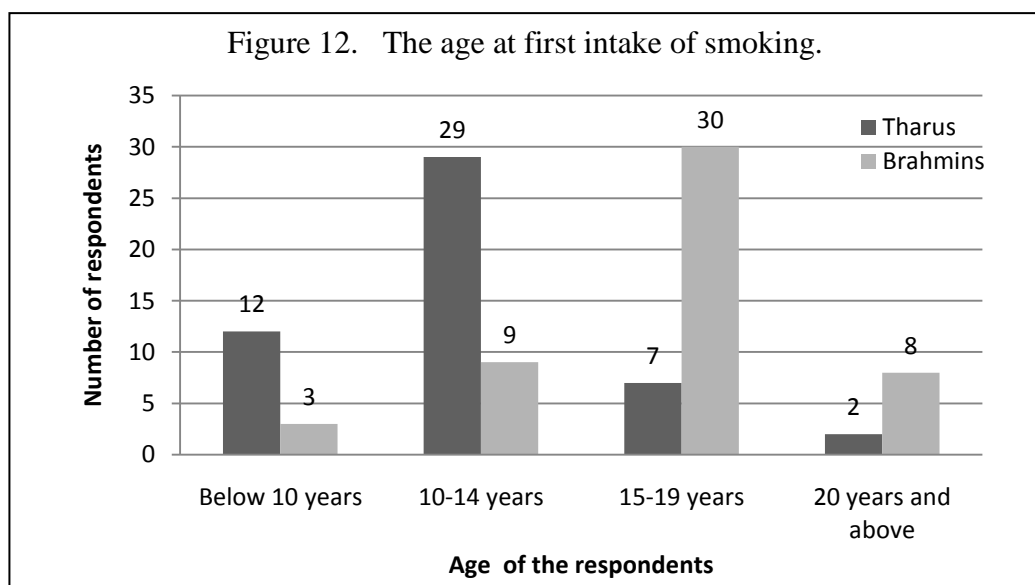
4.2. Age of the Respondents at the Time of First Smoking.

The age at which children begin to smoke is on a continual decline, with an estimated 60% of smokers starting by age 13 and 90% beginning by age 20. The prime age for tobacco use is 12-14 years (Meier, 1991). The data obtained in the study shows similar trend with Meier's study and others studies carried out in different years at different places. Many smokers had taken some sorts of smoking in their early age.

Various factors affect and trigger the smoking behavior in the childhood and adolescence age of people. In the study area most of the smokers were found to start it at the age of adolescence. This may be due to their nature of curious age. The following data reflects the situation of first experience of smoking in Tharus and Brahmin populations

Table 3. The age at first intake of smoking.

Age at first smoking	Tharus		Brahmins	
	Frequency	Percentage	Frequency	Percentage
Below 10 years	12	24	3	6
10-14 years	29	68	9	18
15-19 years	7	14	30	60
20 years and above	2	4	8	16



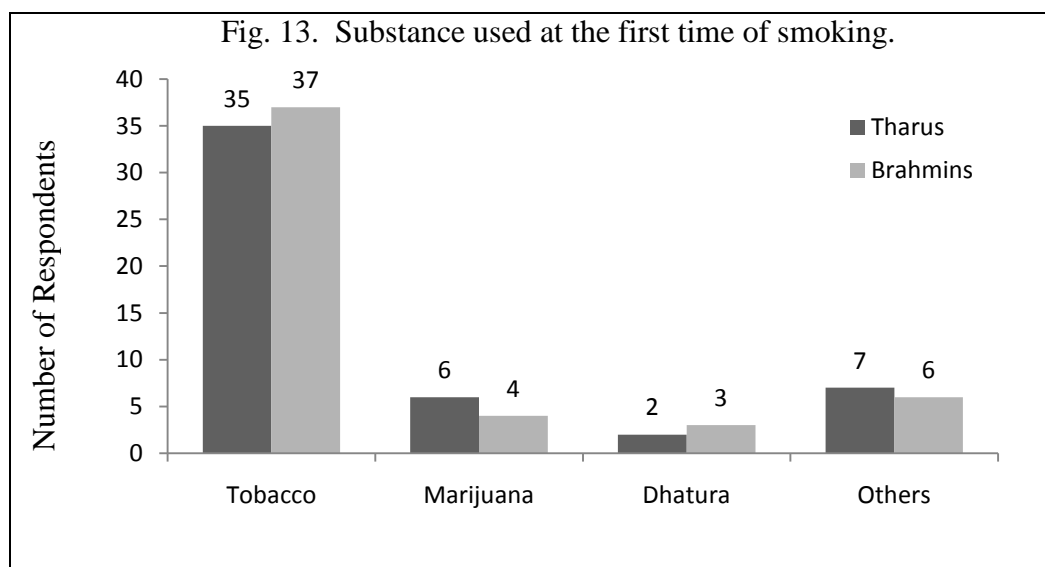
4.3. The Substance First Smoked

There are many substances like tobacco, marijuana, dhatura, and other substances people used for smoking. Tobacco was found mostly used substance for smoking for the first time among many smokers in both the Tharu and Brahmin population. It was 70% and 74% among Tharus and Brahmins respectively. There was comparatively very less usage of marijuana and dhatura as the substance used at first smoking by both groups of people. The other substance at the first smoking included unknown and haphazard herbs, their dried leaves, jute stems, paper pieces or similar substances and even some hard drugs like heroin and hashish in rare cases. There were no any evidences of intake of heroin and hashish among the target population of the study.

Table 4. The substance smoked first by Tharus and Brahmins

The substance smoked first	Tharus		Brahmins	
	Frequency	Percentage	Frequency	Percentage
Tobacco	35	70%	37	74%
Marijuana	6	12%	4	8%
Dhatura	2	4%	3	6%
Others	7	14%	6	12%

The tobacco users are more in both groups under study. This might be because of easy access of all to tobacco. Marijuana is also planted and produced locally. These two are more familiar comparatively than others. Dhatura has more risk and it shows severe harms to the smokers if taken excessively without precautions. Others are particularly smoked by children and habituated addicts as concealed smoking.



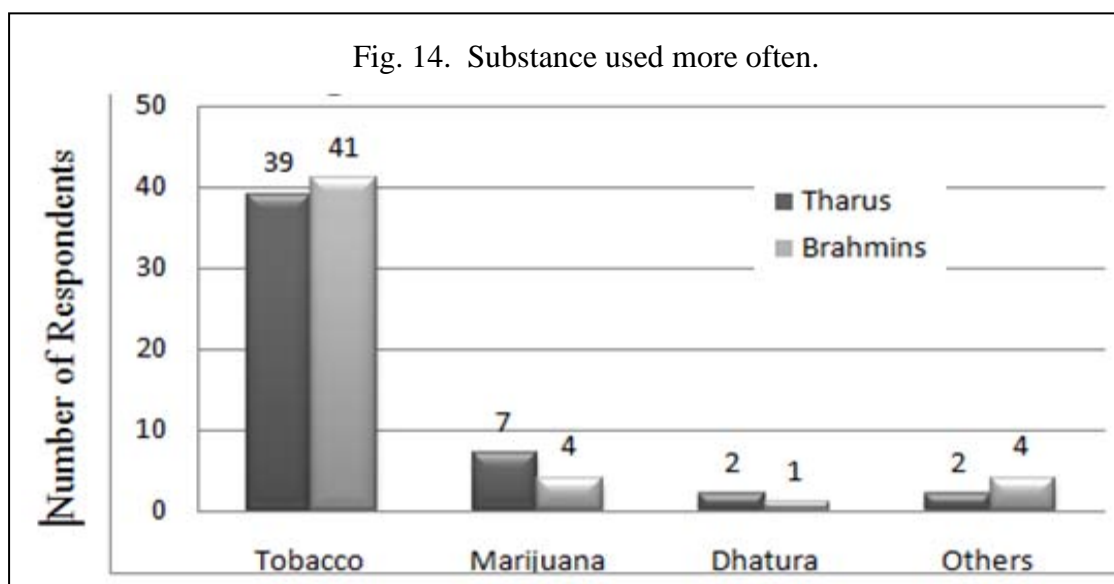
4.4. The Substance Used More Often

In the response to a question regarding the use of substance used most often, most of the respondents from the both population answers for tobacco. The usage rate of tobacco is 78% and 82% among Tharus and Brahmins population. Similarly, there was least response for the use of dhatura for smoking purpose.

Table 5. The substance used more often

Substances	Tharus		Brahmins	
	Frequency	Percentage	Frequency	Percentage
Tobacco	39	78%	41	82%
Marijuana	7	14%	4	8%
Dhatura	2	4%	1	2%
Others	2	4%	4	8%

Marijuana lies at the second position with 14% and 8% among Tharus and Brahmins though it is illegal. The respondents who selected for others do not want to reveal the used substance even an assurance of total confidentiality. The less numbers of Tharus for tobacco smoking is less. The data reveals that it is lesser due to higher consumption rate of marijuana among Tharus (i.e. 14%).



4.5. The Smoking Apparatus Used at First Smoking

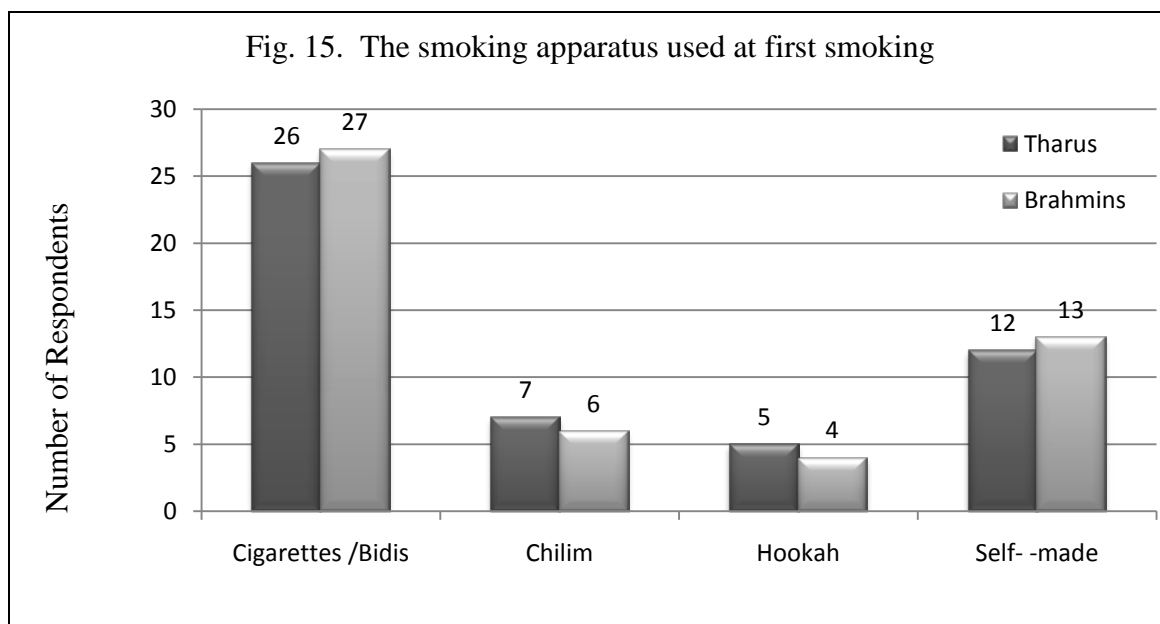
The smoking is not possible without any apparatus to keep the smoking substance and allow the substance to burn gradually producing smoke. In the past, there was system of using domestic and permanent apparatuses like hookah and chilim as well as the temporary apparatus like roll of dried leaves of Sal tree. The following table shows the use of smoking apparatus when the respondents took smoking for the first time.

Table 6. The smoking apparatus used at first smoking

Smoking apparatus	Tharus		Brahmins	
	Frequency	Percentage	Frequency	Percentage
Cigarettes/Bidis	26	52%	27	54%
Chilim	7	14%	6	12%
Hookah	5	10%	4	8%
Self-made with Paper/Dry Leaf or others	12	24%	13	26%

These days, due to wide range of availability of different brands of cigarettes, paper rolls, and Bidis, the smokers are attracted towards such readymade and easy apparatus.

The availability and likes of people towards the use of traditional apparatus like chilim and hookah are declining day by day. That might be due to increased availability of these substances and people's attraction towards readymade and easy apparatus.



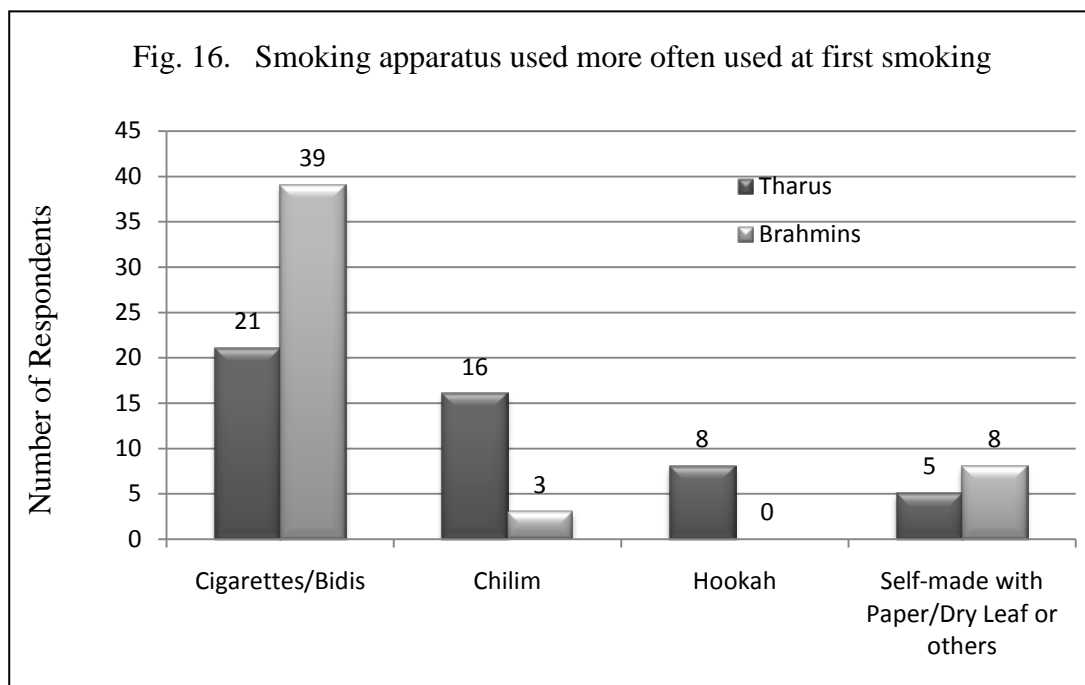
4.6. The Smoking Apparatus Used More Often

There are major two types of apparatuses used for smoking. They are traditional and temporary-readymade types. The traditional type includes sustainable (hookah and chilim) and use-and-throw (self-made with paper, dry leaf, or others).

Table 7. Smoking apparatus used more often

Smoking apparatus	Tharus		Brahmins	
	Frequency	Percentage	Frequency	Percentage
Cigarettes/Bidis	21	42%	39	78%
Chilim	16	32%	3	6%
Hookah	8	16%	0	0%
Self-made with Paper/Dry Leaf or others	5	10%	8	16%

The usage rate of the traditional apparatus among Tharus is higher than that of Brahmins. There is higher rate (78%) of usage of readymade cigarettes and Bidis among Brahmins than that of Tharus (i.e. 42%). Brahmin elderly smokers like self made roll of dry Sal leaves while Tharu elderly smokers are habituated to use chilim and hookah.



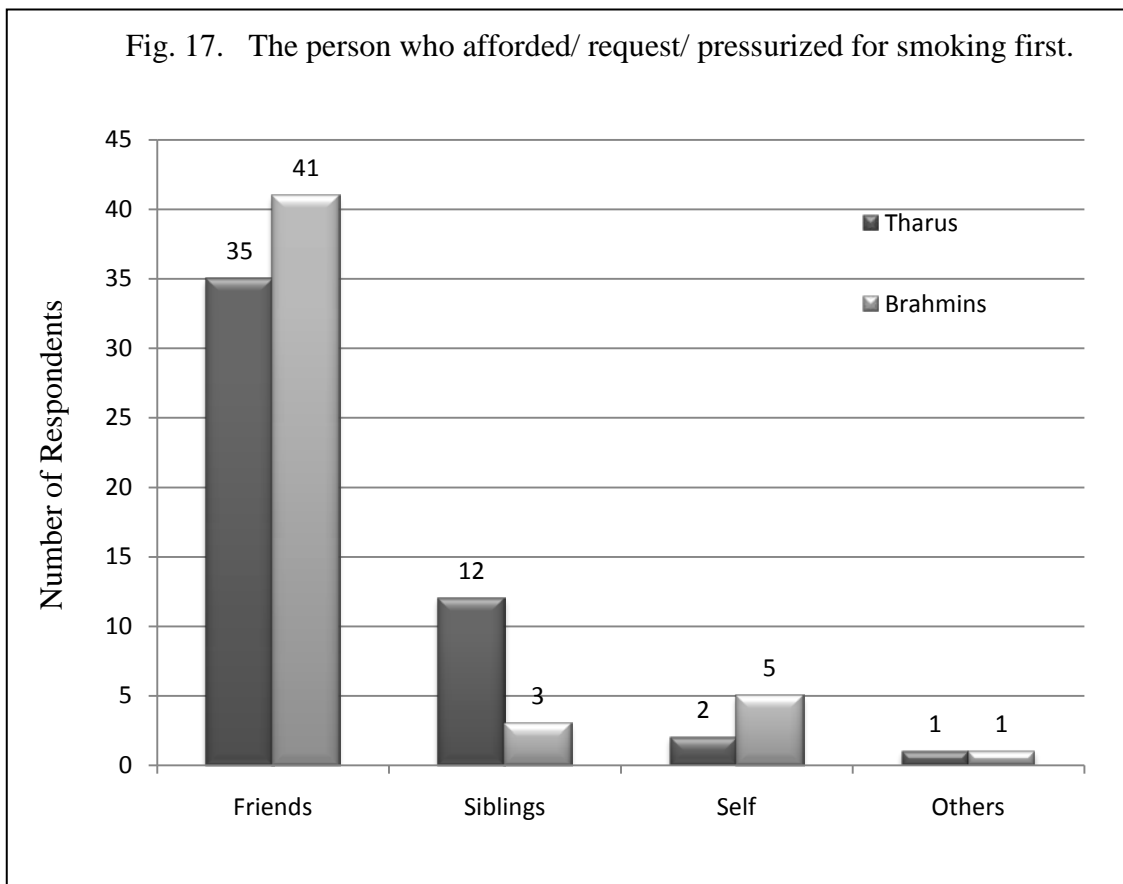
4.7. The Person Who Afforded/ Request/ Pressurized for Smoking First.

Mostly, there is a significant role of other smokers to make a new smoker. The smokers want to add a new member who can share the consumption or manage smoking.

Table 8. The person who afforded/ request/ pressurized for smoking first.

	Tharus		Brahmins	
	Frequency	Percentage	Frequency	Percentage
Friends	35	70%	41	82%
Siblings	12	22%	3	6%
Self	2	4%	5	10%
Others	1	2%	1	2%

On a question regarding the the first person who afforded, or request or pressurized or motivate smoking in any way, most of the respondent of the both category of study revealed that they come to start smoking due to their friends. The respective values are 70% and 82% for Tharus and Brahmins.



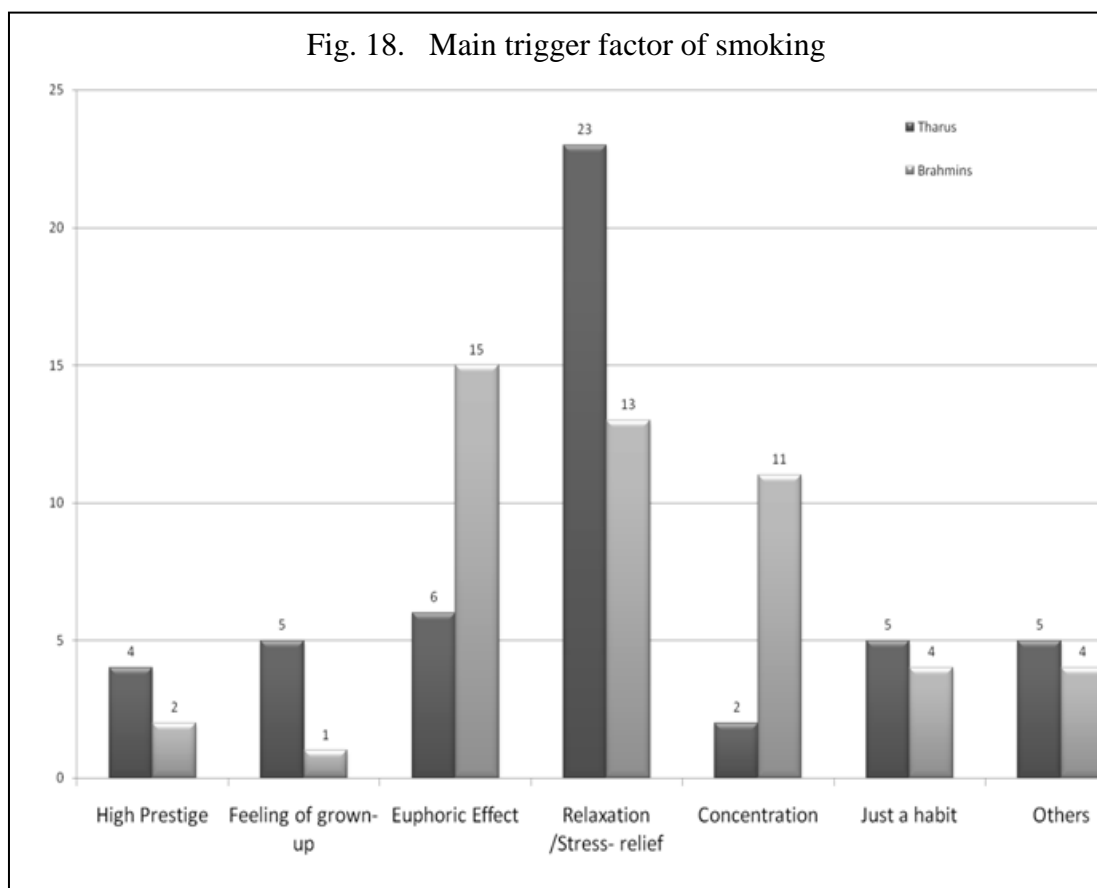
4.8. Main Trigger Factor of Smoking

Most of the respondents show their clear knowledge about the harmful consequences of smoking different substances on human health during the warming up questionnaire, individual interview, and other informal talks. In spite of adequate knowledge and information about the harmful effects, they are smoking for long. As a response to a question regarding the main trigger factor that is responsible for smoking, almost half respondents of Tharus (i.e. 46%) select for relaxation and stress relief while only 26% Brahmin select this factor. Most of the Brahmins (30%) choose its euphoric effect as major trigger factor. 8% and 10% Brahmins and Tharus cannot say any specific trigger factor but it is just their habit. High prestige, feeling of grown up, concentration, and few others are also causes for smoking for few respondents as shown below.

Table 9. Main trigger factor of smoking

Trigger Factors of smoking	Tharus		Brahmins	
	Frequency	Percentage	Frequency	Percentage
High Prestige	4	8%	2	4%
Feeling of grown up	5	10%	1	2%
Euphoric Effect	6	12%	15	30%
Relaxation/Stress-relief	23	46%	13	26%
Concentration	2	4%	11	22%
Just a habit	5	10%	4	8%
Others (Smoking like a friend, the smell, something to do with my hands etc.)	5	10%	4	8%

Fig. 18. Main trigger factor of smoking



The trigger factor is distinctly different among Tharus and Brahmins. Most of the Tharus of the study area are farmers and they work hard physically. That might be the reason of selecting ‘relaxation and stress-relief’ as the major factor of smoking among them. This choice is high among Brahmins too but lies at the second position after ‘euphoric effect’.

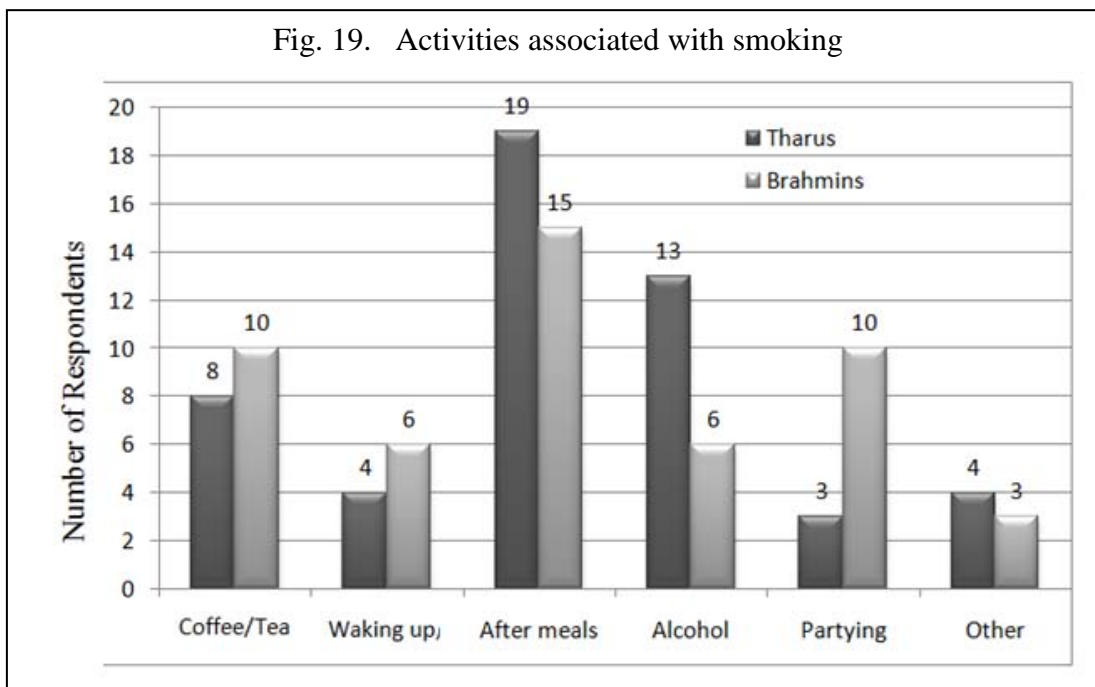
4.9. Activities / Events Associated with Smoking

In most of the case, smoking is found to be associated with some of the other activities or certain events like ‘waking up’ and ‘after meals’. Most of the respondents in both groups of population smoke after meals (Tharus 38% and Brahmins 30%). 26% of Tharus smoke with alcohol while only 12% of Brahmins associates smoking with alcohol. But smoking while Coffee/Tea and partying is higher in Brahmins (20% in association with both events). Both Brahmins and Tharus reveal less association with very rare activities like defecating and studying.

Table 10. Activities associated with smoking

Activities associated	Tharus		Brahmins	
	Frequency	Percentage	Frequency	Percentage
Coffee/Tea	8	16%	10	20%
Waking up,	4	8%	6	12%
After meals	19	38%	15	30%
Alcohol	13	26%	6	12%
Partying	3	6%	10	20%
Other/No any association	4	8%	3	6%

The associative activities are related to the increased desire of nicotine intake. Biologically stating, this desire increases when the level of nicotine falls in the blood serum. Some literatures suggest that intake of meal, tea, coffee, or alcohol activates the digestive system with greater influence on digestive enzymes. (Lawrence,1986). That might be a reason of higher association of smoking after meal.



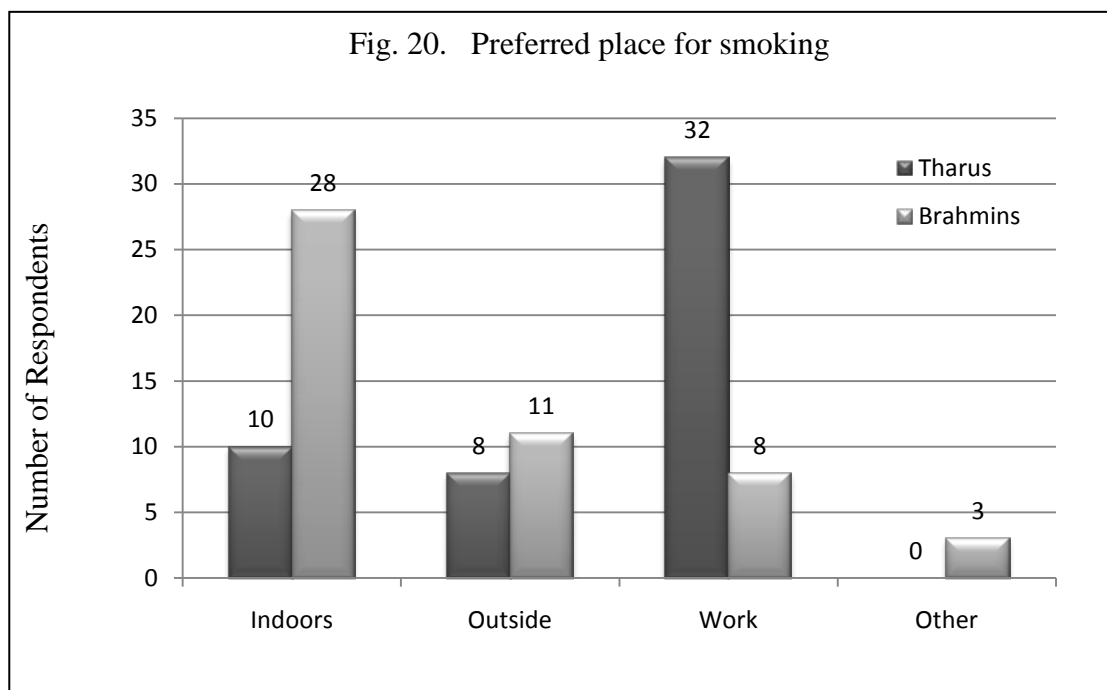
4.10. Preferred Place of Smoking

Outdoor smoking in well civilized areas is a matter of shame these days. But in most of the rural areas it makes no difference. A question regarding the preferred place of smoking, the Tharu and Brahmin respondents show different practices among them.

Table 11. Preferred place of smoking

Preferred place	Tharus		Brahmins	
	Frequency	Percentage	Frequency	Percentage
Indoors	10	20%	28	56%
Outdoor	8	16%	11	22%
Work	32	64%	8	16%
Other	0	0%	3	6%

Tharus smoke mostly at work (64%) while Brahmins smoke indoor (56%). There are 20% of Tharu indoor smokers and 16% of Brahmin smokers who smoke at workplace. Smoking is proposed to be ban at public places for taking as well as selling and the government is planning to promulgate the act of controlling smoking very soon. At such condition, the outdoor smokers and workplace smokers will certainly decrease significantly if the acts are implemented well.



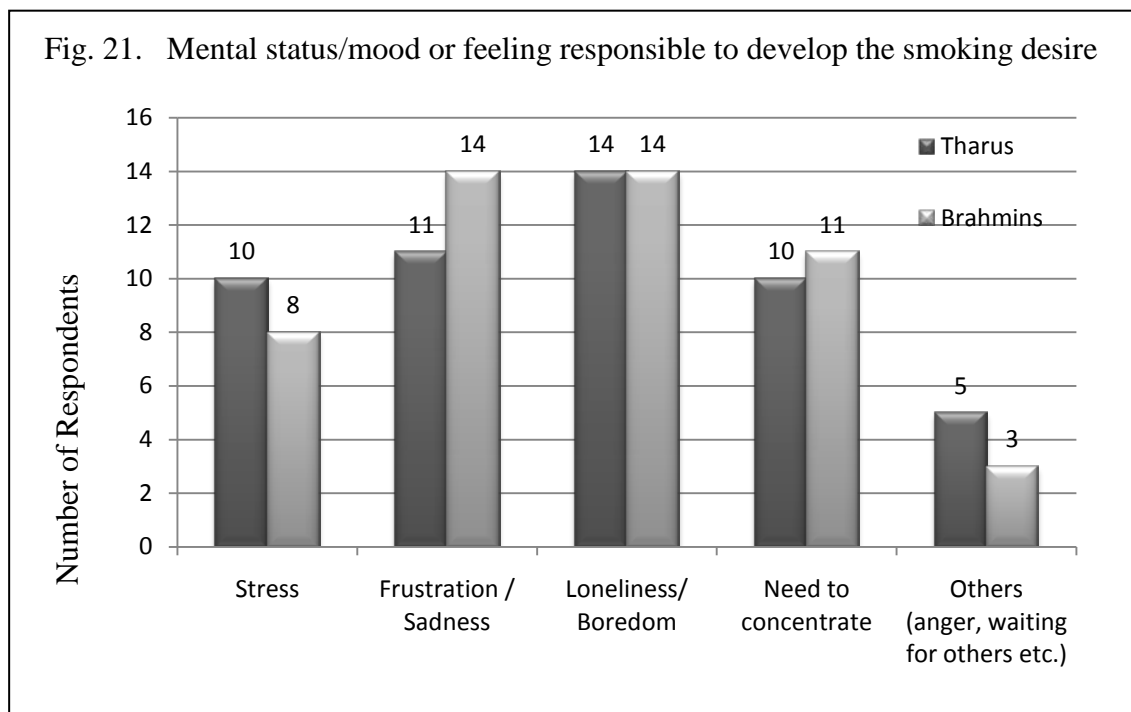
4.11. Mental Status/Mood or Feeling Responsible to Develop the Smoking Desire

Smoking is always found to be triggered by certain types of mood and mental status. Stress, frustrations, sadness, loneliness, boredom, need for concentration are some of such factors.

Table 12. Mental status/mood or feeling that develop the smoking desire

Mental Status/Mood	Tharus		Brahmins	
	Frequency	Percentage	Frequency	Percentage
Stress	10	20%	8	16%
Frustration / Sadness	11	22%	14	28%
Loneliness/ Boredom	14	28%	14	28%
Need to concentrate	10	20%	11	22%
Others (anger, waiting for others)	5	10%	3	6%

The factors are found to have almost equal triggering effects among Tharus and Brahmins both. The maximum respondents (i.e. 28% in both groups of sample smokers) choose loneliness and boredom as the major factor leading to trigger smoking. The least responses are for 'others' option including anger, waiting, etc. This value accounts for 10% among Tharus and 6% among Brahmins. The factor 'frustration' lies at the second position to be the triggering factor for Tharus (22%) but lies together with the first position among Brahmins with 28% of the total respondent smokers.



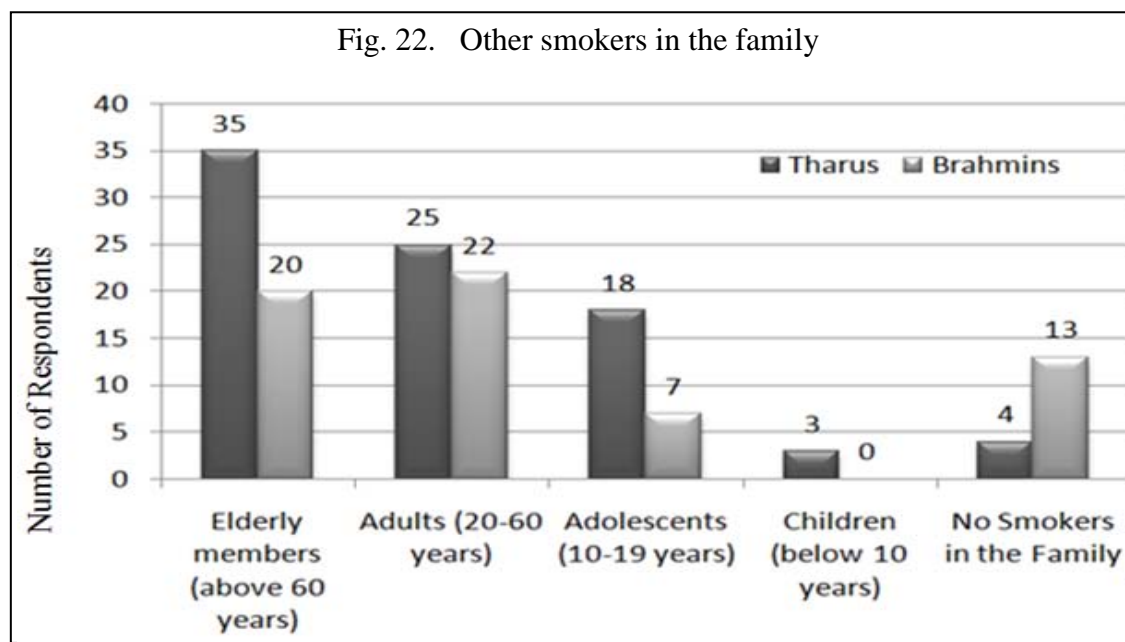
4.12. Other Smokers in the Family

Each member of the sample respondents come from a family. The smoking behavior is greatly influenced by the other smokers living in the family.

Table 13. Other smokers in the family

Other smokers in the family	Tharus	Brahmins
Elderly members (above 60 years)	35	20
Adults (20-60 years)	25	22
Adolescents (10-19 years)	18	7
Children (below 10 years)	3	0
No Smokers in the Family	4	13

On a question about the other smoker members in their own family, most of the respondents (35 Tharus and 20 Brahmins) have at least one or more elderly smoker in their family. 4 Tharus and 13 Brahmins respondents do not have any other smokers in the family. 3 Tharu respondents have children smokers (under 10 years) smokers in their families while no children smokers are found in the families of Brahmin respondents. Respondents were set free for the multiple selections of the given options.



Once the habit of smoking develops, it is difficult to give it up. That's why; it is general to have higher number of smokers among elderly population. The same situation seems to be present among Tharus and Brahmins both.

4.13. Family Members who Support/Share Your Smoking

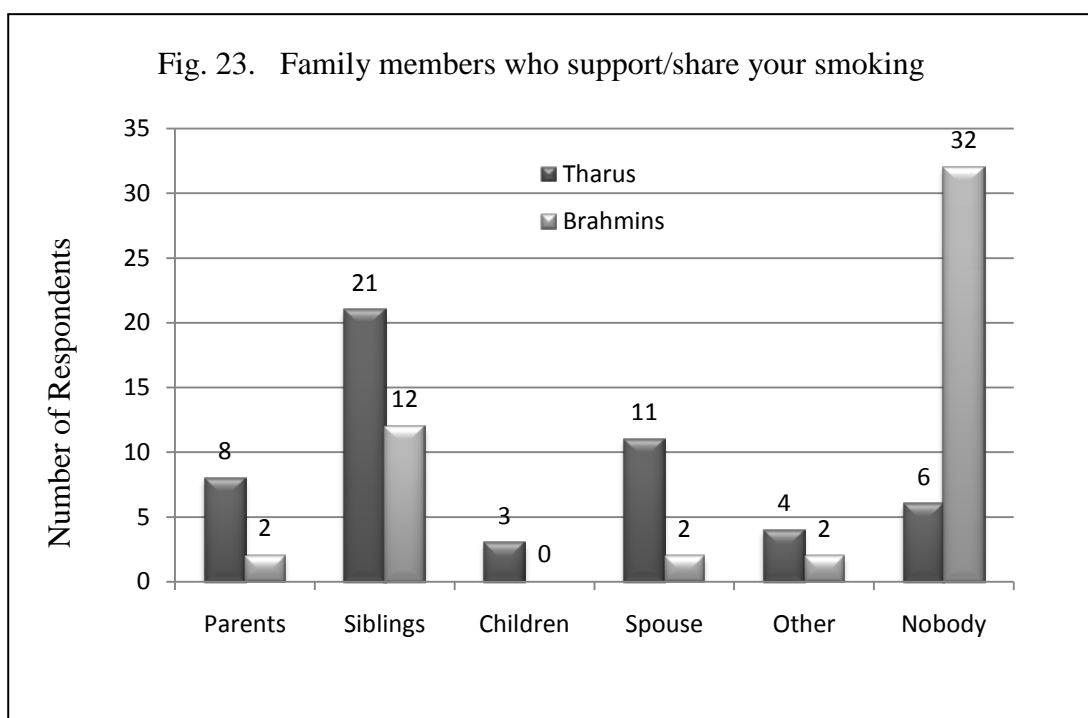
Smoking habit is always accompanied with other smokers of different categories. In a question regarding the inquiry of other smokers in the family who support or share smoking with the respondents, maximum respondents (42% and 24% among Tharus and Brahmins respectively) are found to share it with their siblings.

There is a remarkable difference (12% and 64%) between Tharu and Brahmin smokers who do not share with any other family members. 3 elderly Tharu respondents confess that they share it even with their grown up sons. The following table reveals the data related to supportive or sharing family members of the smokers.

Table 14. Family members who support/share your smoking.

Family members	Tharus		Brahmins	
	Frequency	Percentage	Frequency	Percentage
Parents	8	16%	2	4
Siblings	21	42%	12	24%
Children	3	6%	0	0%
Spouse	11	22%	2	4%
Other	4	8%	2	4%
Nobody	6	12%	32	64%

Siblings are the members of same generations. There is no or less conflicts regarding the adopted norms, values, relations, participations, and lifestyles among siblings. That may be the probable cause of higher values in siblings. Again, its value is more Tharus due to larger family size and higher number of siblings living together. The Brahmin smokers, who do not get any form of support in smoking, are remarkably more. This shows a clear cut behavioral distinction of Brahmins from the Tharu smokers.



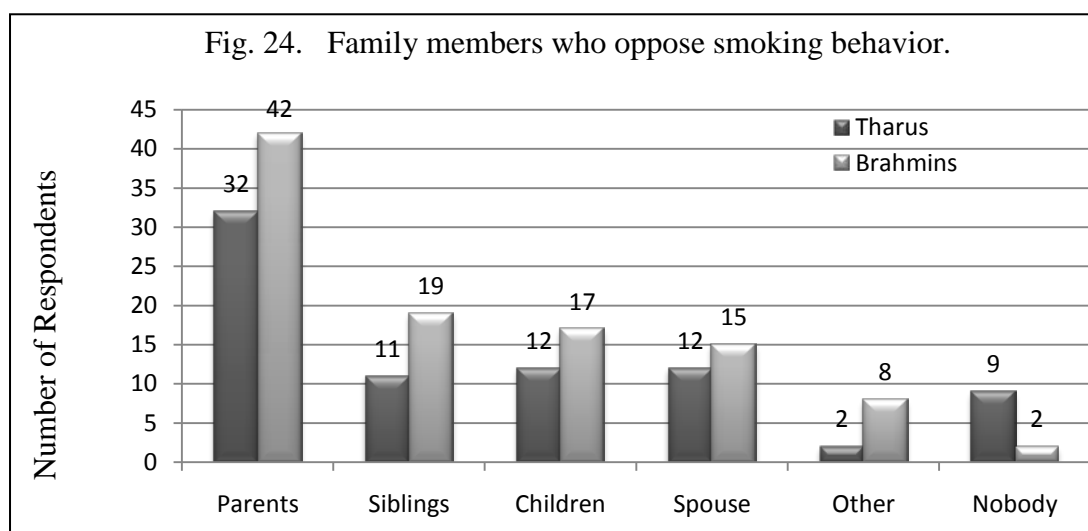
4.14. Family Members who Oppose Smoking Behavior Mostly.

Smokers need to tackle opposition from many sides. One of the sides is their own family and family members. Though, there may be many members opposing smoking habit, the respondents were allowed to select only one option who oppose mostly.

Table 15. Family members who oppose smoking behavior.

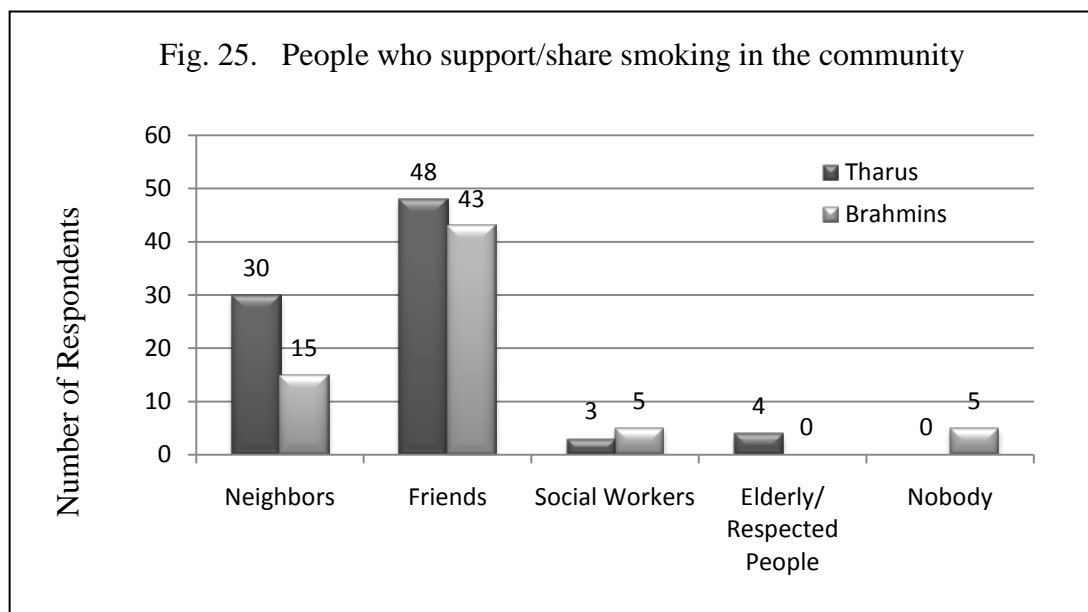
Family members	Tharus		Brahmins	
	Frequency	Percentage	Frequency	Percentage
Parents	32	64%	42	84%
Siblings	11	22%	19	38%
Children	12	24%	17	34%
Spouse	12	24%	15	30%
Other	2	4%	8	16%
Nobody	9	18%	2	4%

In the response to this inquiry most smokers reveals that their parents come at the first position to oppose their smoking behavior. 64% and 84% of Tharus and Brahmins smokers are opposed mostly by their parents. The share of Tharu and Brahmin smokers who are smoking in their family without any opposition are 18% and 4% respectively.



4.15. People Who Support/Share Smoking In The Community

Smoking activities are always preferred by smokers to share among them. Sharing is a supportive action that encourages the smoker to think smoking positively and to continue it. Most of the smokers of the study area share smoking with their fiends among different community people.



The sharing rate among friends is 96% and 86% among Tharus and Brahmins respectively. All of the Tharu smokers share smoking with at least one other smoker and there are only 5 Brahmin smokers (10%) who do not share it with any other members in their community members in the study area. In this question, the respondents were set free to select multiple options.

Table 16. People who support/share smoking in the community

Community Members	Tharus		Brahmins	
	Frequency	Percentage	Frequency	Percentage
Neighbors	30	60%	15	30
Friends	48	96%	43	86%
Social Workers	3	6%	5	10%
Elderly/Respected People	4	8%	0	0%
Nobody	0	0%	5	10%

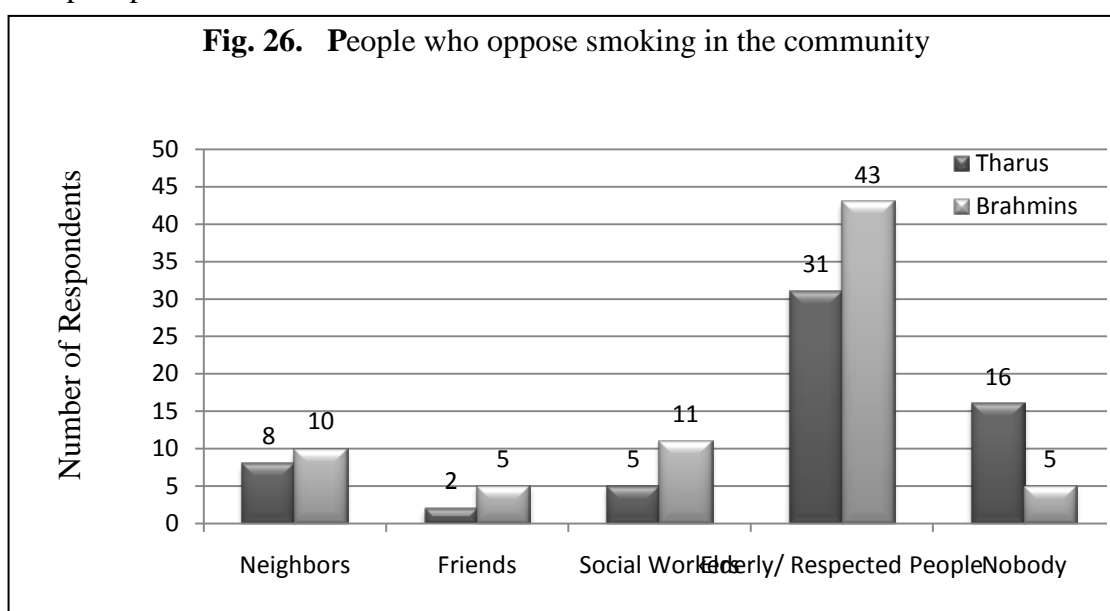
4.16. People Who Oppose Smoking In The Community

Smoking is hated socially and disliked widely in every community. There are many people who hate and express the opposing opinions against smokers.

Table 17. People who oppose smoking in the community

Community Members	Tharus		Brahmins	
	Frequency	Percentage	Frequency	Percentage
Neighbors	8	16%	10	20
Friends	2	4%	5	10%
Social Workers	5	10%	11	22%
Elderly/Respected People	31	62%	43	86%
Nobody	16	32%	5	10%

Elderly people in the community who are regarded as respected personalities are always against smoking activities even if they are also smokers. Maximum smokers are opposed, criticized, or even scolded sometimes by the elderly and respected personalities of the community. In this question, the respondents were set free to select multiple options.



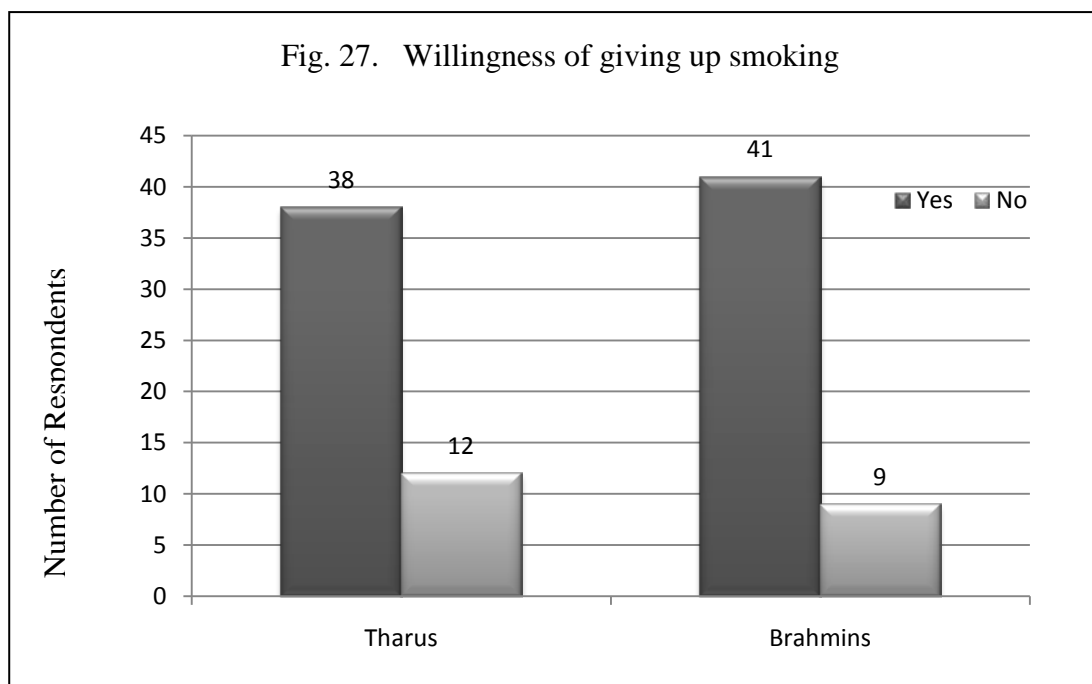
4.17. Willingness to Quit Smoking

Smoking of tobacco, marijuana, dhatura, or any other forms of drugs like hashish and heroin causes addiction. The smokers need to smoke time and again to fulfill their desire. In such context, some of the smokers want to give up and some still want to continue.

Table 18. Willingness of giving up smoking

Desire to quit smoking	Tharus		Brahmins	
	Frequency	Percentage	Frequency	Percentage
Yes	38	76%	41	82%
No	12	24%	9	18%

In response to a question regarding willingness to quit smoking 76% of Tharus and 82% of Brahmins want to quit smoking while the remaining smokers want to continue it.



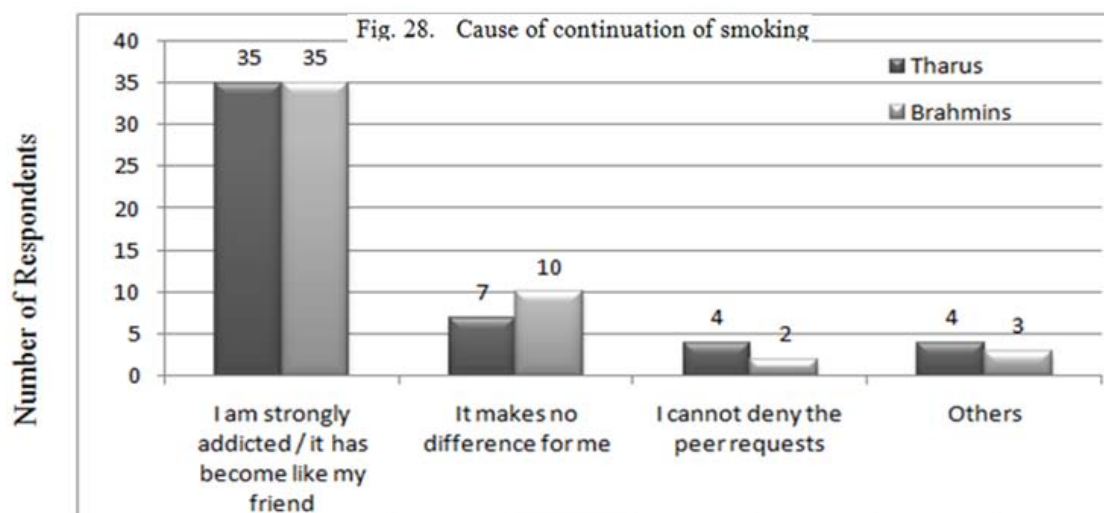
4.18. Cause of Continuation of Smoking

Most of the smokers in both groups under study want to quit smoking. Smaller portion (12 Tharus and 9 Brahmins) do not want to stop it.

Table 19. Cause of continuation of smoking

Cause of continuation of smoking	Tharus		Brahmins	
	Frequency	Percentage	Frequency	Percentage
I am strongly addicted / it has become like my friend	35	70%	35	70%
It makes no difference for me	7	14%	10	20%
I cannot deny the peer requests	4	8%	2	4%
Others	4	8%	3	6%

The strong addiction is the main reason behind its continuation. This reason is the most prevalent (70% for both groups). Seven Tharus and ten Brahmins claims that the smoking makes no difference to their health and so want to continue. Peer pressure and others are less for these addicted sample smokers.



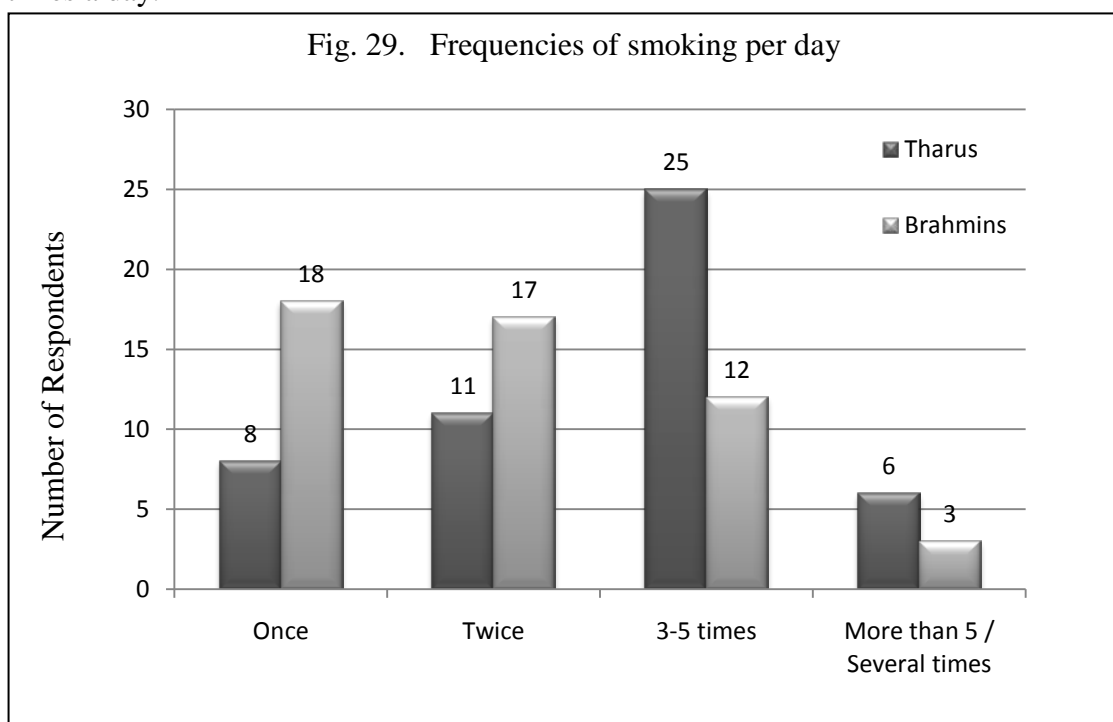
4.19. Frequencies of Smoking per Day

Smoking is turned to addiction after certain level of consumption. The extent of addiction also increases with increase in frequent consumption.

Table 20. Frequencies of smoking per day

Frequency (at least)	Tharus		Brahmins	
	Number	Percentage	Number	Percentage
Once	8	16%	18	36%
Twice	11	22%	17	34%
3-5 times	25	50%	12	24%
More than 5 / Several times	6	12%	3	6%

Regarding the ‘at least – every day’ consumption, Tharus show a distinct feature of heavy smokers. 50% Tharus smoke at least 3 to 5 times every day. But maximum Brahmins smoke twice a day. 12% Tharus but only 6% Brahmins smoke more than 5 times a day.



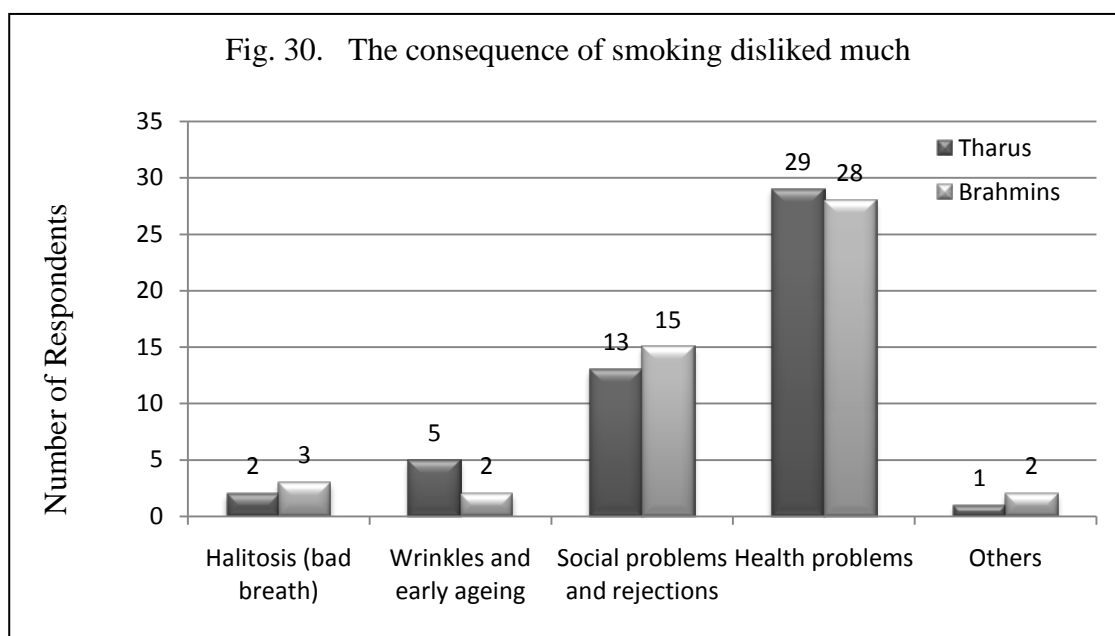
4.20. . The Consequence of Smoking Disliked Much.

Almost all the smokers know that there are several adverse consequences of smoking. Among these all consequences, the most disliked consequence may differ from individual to individual.

Table 21. The consequence of smoking disliked much

Disliked Consequence	Tharus		Brahmins	
	Frequency	Percentage	Frequency	Percentage
Halitosis (bad breath)	2	4%	3	6%
Wrinkles and early ageing	5	10%	2	4%
Social problems and rejections	13	26%	15	30%
Health problems	29	68%	28	56%
Others	1	2%	2	4%

The maximum portions of smokers (68% Tharus and 56% Brahmins) dislike health problems as the results of smoking. Social problems and rejections occupy 26% and 30% of Tharus and Brahmins respectively. Bad breath, wrinkles, ageing, and others are also the most disliked consequences of few smokers.



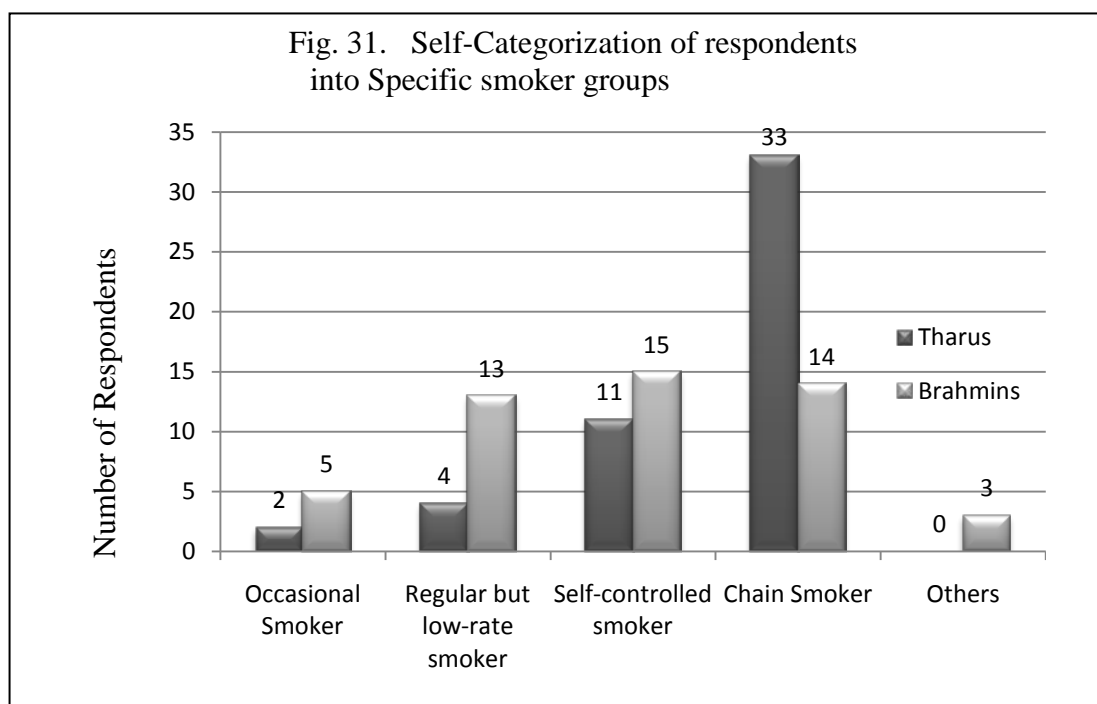
4.21. Self – categorization in specific type of smoker.

All of the respondents reveal without any hesitation that they are smokers. All smokers are not similar. Some are just learners and some of them have passed a long time period being a smoker. On a question regarding their self-categorization into different smokers' group, they categorize themselves in the following way.

Table 22. Self-categorization in a specific type of smoker.

Categories	Tharus		Brahmins	
	Frequency	Percentage	Frequency	Percentage
Occasional Smoker	2	4%	5	10%
Regular but low-rate smoker	4	8%	13	26%
Self-controlled smoker	11	22%	15	30%
Chain Smoker	33	66%	14	28%
Others	0	0%	3	6%

The maximum numbers of Tharu smokers (33) reveal that they are chain smokers. Chain smokers and self-controlled smokers are almost equal among Brahmin smokers (i.e. 14 and 15). Only very few smokers group themselves in occasional smokers.



4.22. The Correlation Coefficient between the Smoking Rates among Tharus and Brahmins.

Correlation coefficient is a widely used and appropriate statistical tool to measure the comparative study of two variables, particularly regarding their dependency or the nature of their trends.

While collecting primary data from the respondents of different ages, the frequency of smoking within certain age group is arranged in the table below. Two columns of frequency variables for Tharus and Brahmins are subjected for the observation of their correlation as given below.

In the table presented below, 't' stands for the frequency of smoking among Tharu smokers and 'b' stands the same for Brahmin smokers.

Table 23
The Correlation Coefficient between the Smoking Rates among Tharus and Brahmins.

S.N.	Age Group (Years)	t	b	d_t ($d_t = t - \bar{t}$) Assume $\bar{t}=6$)	d_b ($d_b = b - \bar{b}$) Assumed $\bar{b}=5$)	$d_t \cdot d_b$	d_t^2	d_b^2
1	≤ 20	3	2	-3	-3	9	9	9
2	21-40	5	3	-1	-2	2	1	4
3	41-60	6	5	0	0	0	0	0
4	61-80	8	7	2	2	4	4	4
5	≥ 81	10	7	4	2	8	16	4
N=5		$\sum t=32$	$\sum b=24$	$\sum d_t=2$	$\sum d_b=-1$	$\sum d_t \cdot d_b=23$	$\sum d_t^2=30$	$\sum d_b^2=21$

Where,

$$N=5, \quad \sum t=32, \quad \sum b=24, \quad \sum d_t=2, \quad \sum d_b=-1,$$

$$\sum d_t \cdot d_b=23, \quad \sum d_t^2=30, \quad \sum d_b^2=21$$

Now,

Correlation Coefficient,

$$r_{tb} = \frac{N \sum dt \cdot db - \sum dt \cdot \sum db}{\sqrt{N \sum dt^2 - (\sum dt)^2} \sqrt{N \sum db^2 - (\sum db)^2}}$$

(Gupta, 1996)

$$r_{tb} = \frac{5 \times 23 - 2 \times (-1)}{\sqrt{5 \times 30 - 2^2} \sqrt{5 \times 21 - (-1)^2}}$$

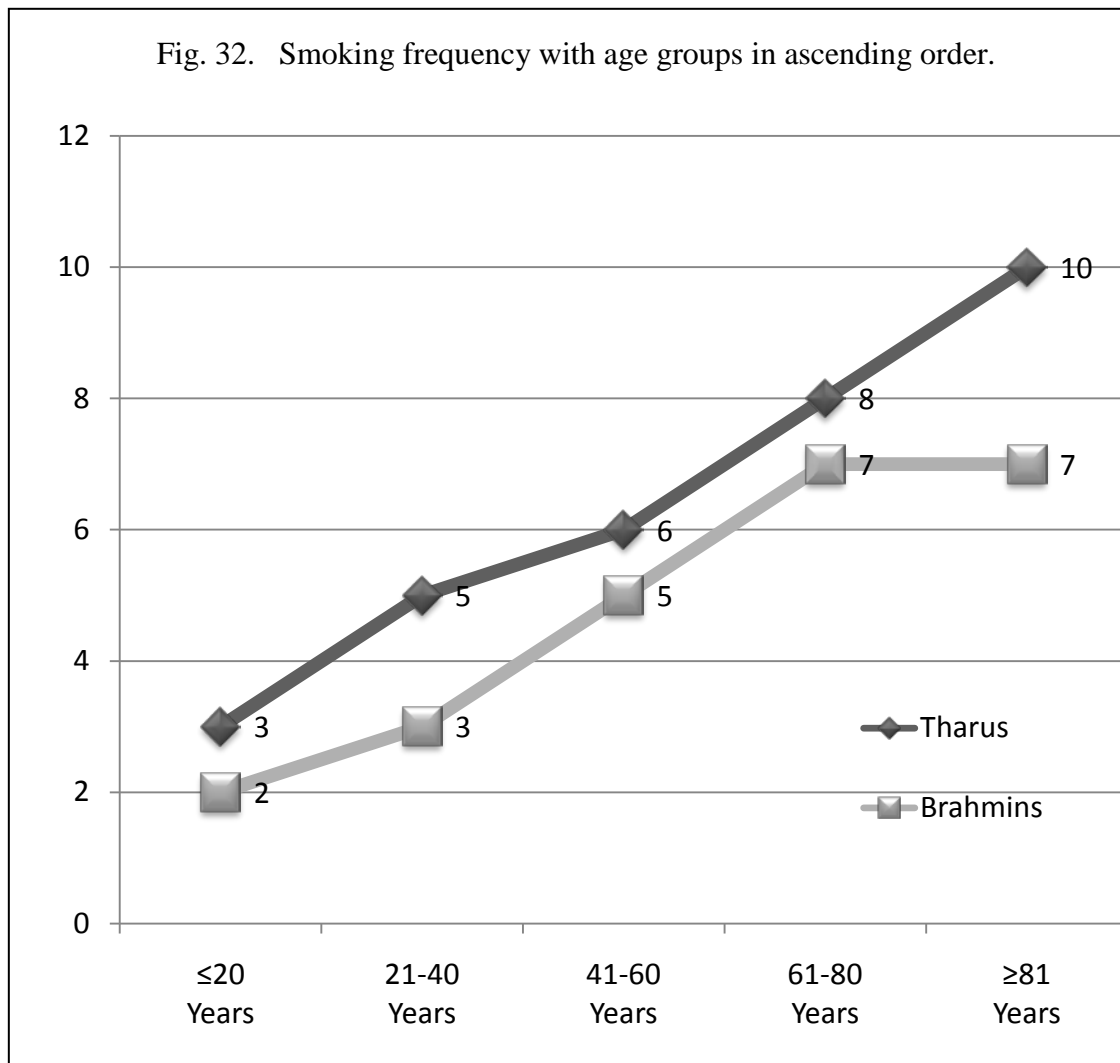
$$r_{tb} = \frac{115 + 2}{\sqrt{150 - 4} \sqrt{105 - 1}}$$

$$r_{tb} = \frac{115 + 2}{\sqrt{15184}}$$

$$r_{tb} = \frac{117}{123.22}$$

$$r_{tb} = 0.95$$

The following trend lines show the comparative status of increased smoking frequencies with increase in age among Tharus and Brahmins.



$$\text{Now Probable Error (PE)} = 0.6745 \times \frac{1 - r^2}{\sqrt{N}} \quad (\text{Gupta, 1994})$$

$$PE = 0.6745 \times \frac{1 - 0.95^2}{\sqrt{5}}$$

$$PE = 0.0294$$

In order to test the significance of the above-calculated correlation coefficient, we need the value of 6PE.

PE may be useful to test if an observed value of sample correlation coefficient is significant of any correlation in the population. If $r > 6PE$, i.e., if observed value of r is greater than six times its PE, then r is definitely significant. (Gupta, 1994)

Now,

$$6PE = 6 \times 0.0294$$

$$6PE = 0.1765$$

Here,

$$r_{tb} > 6PE \quad (\text{Since, the value of } r_{tb} = 0.95).$$

Therefore, the correlation coefficient calculated above becomes significant. That means, there is positive correlation between the usage rate of smoking between Tharu and Brahmin population in ascending age groups. Smokers in both of the target population increase their smoking rate with increase in their age.

CHAPTER FIVE: SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

5.1. Summary

Inhalation of smokes of various substances for euphoric effect is found to be practiced since very long ago. It can be found in several origins of human civilizations. Since that time, it has become a form of social cancer responsible for a remarkable loss of human lives. Various physiological, psychological, sociological, cultural, and religious factors boost smoking behavior of people. There are various types of substances and apparatuses used in smoking. Some of the common substances are tobacco, marijuana, dhatura, and addictive drugs like hashish and heroin. Similarly, some common apparatuses are paper rolls, cigarettes, chilim, and hookah. Tharus and Brahmins both belong to Aryan origin. Their languages, living areas, cultural and religious practices have various similarities. Their social integration in the study area as well as in several parts of terrain areas shows peculiar characteristics of co-existences and harmony with each others. The major objective of this study is to give different prospects of smoking behaviors of Tharus and Brahmins. The findings are not only applicable for the study population but also for the other groups of populations having similar socio-economic, cultural and demographic compositions of populations.

A non-experimental, quantitative, and descriptive research design has been used to carry out the research study. In the study area, total populations of Tharus and Brahmins are 432 and 256 living with 89 and 63 families respectively. Out of the total population, 268 (62.037%) Tharus and 81 (31.64%) Brahmins are smokers and remaining are non-smokers. 58% Tharu smokers are males and 42% are females. Similarly, among Brahmin smokers is 78% are males and only 22% are females.

Major objectives of the study are to explore the smoking substances and apparatuses used for smoking purpose. The study is held in a comparative approach. Therefore, the study also aims to use correlation coefficient as an appropriate statistical tool. The correlation coefficient between smoking rates between Brahmin and Tharu smokers is viewed for a realistic comparative study between them.

Majority of smokers smoke tobacco. It is used by 78% of Tharu and 82% Brahmin smokers. 46% of Tharus smoke for relaxation and stress-relief; 12% for euphoric effect (enjoyment), 10% for grown-up feeling, just due to habit, 8% for prestige, 4% for concentration, and 10% for other various purposes. While 30% of Brahmin smokers smoke for euphoric effect; 26% for relaxation or stress-relief, 22% for concentration in their work/study, 4% for prestige, 8% just due to habit, and 8% due to other various reasons. The Correlation Coefficient between the Smoking Rates among Tharus and Brahmins is 0.95. This high degree of correlation coefficient with a negligible probable error (PE = 0.0294) shows that there is similar trend of smoking frequencies with increased age among both ethnic groups under study.

The global rate of smoking is 32 percent of the total population. This comprises of 47 percentages of male and 17 percent of female population. The total smoking prevalence among the study population has been found higher with 50.73 percent of total smokers including 61.60% male and 38.39% female smokers. Among them there is higher smoking rate among Tharus than among Brahmins in the study area. Most of the smokers prefer tobacco with the readymade cigarette/bidi apparatus. The traditional apparatus like chilim and hookah is used more among Tharus. The usage rate of marijuana, dhatura, and other illegal substances has been found very low.

This study will be very useful for the similar types of further studies related to smoking and other addictive behavior of people. There need an immediate and focused concentration to reduce the smoking habits to keep people healthy in the study area. GOs, NGOs, and INGOs should take necessary initiations to control the adverse effects of this social cancer.

5.2. Findings

This is an analytical and descriptive study conducted with an aim to distinguish the smoking behavior between Tharus and Brahmins living in Jhakanjhora tole of Madhesha VDC of Sunsari district, Nepal. The study was focused in three areas; Socio-Demographic and Socio cultural characteristic, statistical comparison of different

patterns of smoking behavior within them, and the computation correlation coefficient between their smoking frequencies within certain age-groups grouped in successive order. Some major findings of the study are as follows:

A. Socio-Demographic and Socio-Cultural Characteristics of Smokers

- i. Fifty eight percent Tharu smokers are males and 42 percent are females. Similarly, among Brahmin smokers is 78 percent are males and only 22 percent are females.
- ii. Sixty four percent Tharu smokers are married and 42 percent are unmarried. Similarly, 76 percent Brahmin smokers are married and 24 percent are unmarried.
- iii. Fifty six percent Tharu smokers are literate but not completed school education. Among them, 24 percent are illiterate, 14 percent have completed school education (secondary or plus two), and 6 percent of them are graduated. But in Brahmin population, 48 percent of smokers have completed school education, 26 percent are literate but not completed school education, 22 percent are graduated or above, and only 4 percent are illiterate.
- iv. Seventy two percent of Tharu smokers are from joint family and only 28 percent are from nuclear family. But, 64 percent of Brahmin smokers are from nuclear family and rest from the joint type of family.
- v. Fifty percent of Tharu smokers have agriculture as their main occupation. Among rest, 24 percent are dependent, 20 percent are in service, and 6 percent are in business occupation. But 42 percent Brahmin smokers are in service, 26 percent are farmers, 24 percent are dependent (equal to Tharu dependents), and 8 percent are in business occupation.

B. Different Patterns of Smoking Behavior of the Smokers

- i. Sixty eight percent of Tharu smokers took the first smoking at the age of 10-14 years; 24 percent below 10 years, 14 percent at 15-19 years and 4 percent at 20 years or above. But 60 percent of Brahmins took it first at 15-19 years of age, 18 percent at 10-14 years, 16 percent at 20 year or above and only 6 percent took below 10 years.

- ii. Majority of smokers smoke tobacco. It is used by 78 percent of Tharu and 82 percent Brahmin smokers.
- iii. The usage rate of readymade cigarettes and Bidis among Brahmins is 78 percent and that of Tharus is 42 percent.
- iv. The smokers were first afforded/ requested/ pressurized for smoking first by their friends are 70 percent and 82 percent for Tharus and Brahmins smokers respectively. The siblings' category occupies the second position for this data for Tharu smokers (22 percent) and 'self' category (6 percent) for Brahmin smokers.
- v. Forty six percent of Tharus smoke for relaxation and stress-relief; 12 percent for euphoric effect (enjoyment), 10 percent for grown-up feeling, just due to habit, 8 percent for prestige, 4 percent for concentration, and 10 percent for other various purposes. While 30 percent of Brahmin smokers smoke for euphoric effect; 26 percent for relaxation or stress-relief, 22 percent for concentration in their work/study, 4 percent for prestige, 8 percent just due to habit, and 8 percent due to other various reasons.
- vi. Maximum numbers of smokers like smoking after meal. 38 percent of Tharu and 30 percent of Brahmin smokers like to smoke after meal. Among rest, 26 percent of Tharu smokers smoke mostly with alcohol, 16 percent with tea/coffee, 8 percent while waking up, 6 percent while partying, and 8 percent smokers have no specific preference to smoke with. Similarly, 12 percent of Brahmin smokers smoke mostly with alcohol, 12 percent while waking up, 20 percent with tea/coffee, 20 percent while partying, and 6 percent smokers have no specific preference to smoke with.
- vii. Tharus smoke mostly at work (64 percent) while Brahmins smoke indoor (56 percent). There are 20 percent of Tharu indoor smokers and 16 percent of Brahmin smokers who smoke at workplace
- viii. Twenty eight percent of both Tharu and Brahmin smokers like to smoke if there is loneliness and boredom 22 percent of Tharu and 28 percent of Brahmin smokers smoke due to frustration.
- ix. Siblings are the major supporter/sharer of smoking within the families (42 percent in Tharu families and 24 percent for Brahmin families) and friends in the community (96 percent for Tharus and 86 percent for Brahmins).

- x. Majority of Tharus smokers (76 percent) express their will to quit smoking but only 24 percent of Brahmin smokers express their will to quit the habit of smoking.
- xi. Seventy percent of both category under study are continuing smoking due to their strong addiction to smoking. 8 percent of Tharu smokers and 4 percent of Brahmin smokers are continuing it due to peer request/pressure.
- xii. Majority of Tharu smokers (50 percent) smoke 3 to 5 times a day. 'Twice-smokers' are 22 percent, 'once-smokers' are 16 percent and 'more than five / or several times-smokers' are 12 percent among Tharus. Majority of Brahmin smokers (36 percent) smoke once a day. Among Brahmin smokers, 'twice-smokers' are 34 percent, '3 to 5 times-smokers' are 24 percent, and 'more than five/several times-smokers' are 6 percent.
- xiii. Most of the smokers dislike health problems much among different harmful consequences of smoking. This value is 68 percent and 56 percent among Tharus and Brahmins.

C. Correlation between the Frequencies of Smoking in Different Age-Groups of the Smokers

- i. The Correlation Coefficient between the Smoking Rates among Tharus and Brahmins is 0.95.
- ii. The probable error (PE) for the calculation of correlation coefficient is 0.0294.
- iii. In order to test the significance of the correlation coefficient, 6PE has been calculated. Its value (6PE) = 0.1765.

5.3. Conclusion

Smoking behaviors between Tharu and Brahmin smokers in the study area have a number of similarities and dissimilarities. It is greatly affected by socio-economic, demographic, and cultural factors of the smokers. The smokers of any categories have a clear need for accurate, detailed information about the hazardous effects and different modes of addiction of smoking. Even the children below ten years who have just

developing lungs and other vital parts of body have learnt smoking and it should be taken as a serious threat to public health. Twenty four percent and six percent of Tharu and Brahmin smokers reveals that their first intake of smoking was at the age of 10 years or below this age.

These data suggest us to make the guardians better educated and aware regarding the harmful consequences of smoking so as to prevent their children from indulging in smoking habit.

After the eagle-eye observation of the smoking trends of Tharus and Brahmins with the help of the statistical tool correlation coefficient, it is concluded that the smokers go on increasing the frequency of daily smoking intake with increase in their age. The increasing trend is very similar between Tharu and Brahmin smokers. The same conclusion can be generalized in other various groups of populations because of very high degree of correlation ($r = 0.95$) between these two.

The revealed data put us to conclude that most of the smokers begin and continue smoking due to peer request/pressure during the age of adolescence. Similarly, even marijuana, dhatura, and hashish are openly used by the smokers in the study area. It is an open challenge to the existing law of the country because these substances are illegal to use in any form.

5.4. Recommendations

After completing the research, from the point of view of researcher, following recommendations for future have been presented.

5.4.1. Recommendations for Further Improvement.

- a. Wider education and awareness programs against smoking must be held in the smoking areas with a high priority from the concerned units like DHO, local health service providing centers, health organizations etc.

- b. Adequate health workers, social workers, GOs, NGOs, and INGOs should be mobilized with necessary financial resources to the smokers' areas.
- c. The information about hazardous effects of different forms of smoking should be included with more priority in school curricula.
- d. Existing legal provisions (acts and laws) should be implemented effectively. The provisions of laws should be made known to all people through different programs, media, and educational curricula.
- e. All the guardians should be made aware about the child psychology, nature of smoking, and the activities of their children through seminars, workshops, and other formal and informal educational programs.

5.4.2. Recommendations for Further Study.

- a. Similar kinds of comparative studies can be done with different categorizations of smokers. These may be between male and females, adolescents and non-adolescents, or students in government schools and private schools etc.
- b. Non-smoking but addictive substances and drugs can also be taken as a topic for study among different ethnic groups.
- c. A similar kind of study can be done on other ethnic groups of people living in different places.

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Appendix I
(Survey Form and Questionnaire Set)

Demographic Survey Form
(जनसांख्यिक सर्वेक्षण फाराम)

Name of the respondent (उत्तरदाताको नाम):

Age (उमेर):

Sex(लिंग):

Education(शिक्षा):

Family Type(परिवारको प्रकार):{Nuclear(एकल) वा Joint(संयुक्त)}

Occupation(पेशा):

Relation to the Head of the Family (घरमुलीसँगको नाता)

Marital Status (वैवाहिक अवस्था):

Number of Children (If any) (छोराछोरी भए जम्मा संख्या):

Questionnaire

(प्रश्नावली)

Please tick against the best option(s). Your personal information and answers will remain perfectly confidential except for the research procedure. (सवैभन्दा मिल्ने विकल्पमा ठीक चिन्ह लगाउनुहोस । तपाईंको व्यक्तिगत विवरण तथा उत्तरहरू अनुसन्धान प्रक्रियाका निम्ति बाहेक पूर्णतया गोप्य रहनेछन् ।)

1. How old were you when you started smoking?

(धुम्रपान शुरु गर्दा तपाईं कति उमेरको हुनुहुन्थ्यो ?)

- a) Below 10 years (१० वर्षभन्दा कम) b) 10 – 15 years (१० – १५ वर्ष) c) 15 – 20 years (१५ – २० वर्ष) d) Above 20 years ((२० वर्षभन्दा बढी).

2. What was the substance you smoked first?

(तपाइले सर्वप्रथम कुन वस्तु धुम्रपान गर्नुभयो ?)

- a) Tobacco (सुती) b) Marijuana (गाँजा) c) Dhatura (धतुरो) d) Other (अन्य)

.....

3. Which substance do you smoke often?

(तपाइले धुम्रपान गर्ने मुख्य वस्तु के हो ?)

- a) Tobacco (सुर्ती) b) Marijuana (गाँजा) c) Dhatura (धतुरो) d) Other (अन्य)

.....

May have multiple selection (धेरै विकल्प रोज्न सकिने)

4. Which apparatus did you use for the smoking first?

(तपाईंले धुम्रपानका लागि सर्वप्रथम कुन साधन प्रयोग गर्नुभयो ?)

- a) Cigarette / Bidi (सिगरेट , बीडी) b) Chilim (चिलिम) c) Hookah (हुक्का) d) Self made with paper/dry leaf (आफैले बेरेको पात वा कागज) e) Other (अन्य)

5. Which apparatus do you use more often?

(तपाईंले धुम्रपानको निम्ति प्रायजसो प्रयोग गर्नेसाधन के हो ?)

- a) Cigarette / Bidi (सिगरेट, बीडी) b) Chilim (चिलिम) c) Hookah (हुक्का) d) Self made with paper/dry leaf (आफैले बेरेको कागज वा सुकेको पात) e) Other (अन्य)

(May be multiple selection)

(धेरै विकल्प छान्न सकिने)

6. Who afforded/ requested/ pressurized/suggested smoking for the first time?

(तपाईंलाई सर्वप्रथम कसले धुम्रपानको निम्ति उपलब्ध/ अनुरोध/ दवाव / सल्लाह दियो ?)

- a) Friends (साथिभाई) b) Siblings (दाजुभाई वा दिदीबहिनी) c) Self (आफै) d) Other (अन्य)

.....

7. What was the main factor you were interested in smoking?

(धुम्रपानको कुन मुख्य कुराले तपाईंलाई आकर्षित पार्छ ?)

- a) High prestige (उच्च प्रतिष्ठा) b) Feeling of grown up (ठूलो भएको अनुभूति) c) Euphoric effect (नशालु असर) d) Relaxation/Stress-relief, (तनावबाट मुक्ति,) e) Concentration, (एकाग्रता प्राप्ति) f) Just a habit, (आदत मात्र) g) Other (अन्य)(Friend, the smell, something to do with my hands etc. (साथिसँगको मित्रता, गन्ध, केहि न केहि हातमा भएको)

8. What activities do you associate most with smoking?

(तपाईंको धुम्रपानसँग अधिकांश के कृत्याकलाप समावेश हुन्छ ?)

- a) Waking up, (विहान उठ्दा) b) Tea/coffee, (कफी , चियापान) c) After meals, (खानापछि) d) Alcohol, (मदिरासँग) e) Partying. (पार्टी, भोजभतेरमा) f) Other (अन्य)

9. Where do you smoke often? (तपाईं धेरैजसो कहाँ धुम्रपान गर्नुहुन्छ ?)

- a) Indoors, (घरभित्र) b) outside, (बाहिरतिर) c) work, (काममा) d) Other (अन्य)

10. Do any feelings trigger your smoking?

(कुनै भावनात्मक पक्षले तपाईंलाई धुम्रपान गर्न प्रोत्साहित गर्छ ?)

- a) Stress (तनाव) b) Frustration/sadness, (निराशा, उदासिनता) c) Loneliness/Boredom, (एक्लोपना, शुण्यता) d) Need to concentrate, (ध्यानमग्न हुनुपर्दा) e) Others ((अन्य) (anger, waiting for others etc. (रिस, पर्खाई आदि))

11. Do any others in your household smoke? (तपाईंको घरमा अरु कोही धुम्रपान गर्नुहुन्छ ?)

- a) Yes, (छ) b) No (छैन)

If yes, who smoke? (यदि छ भने को को धुम्रपान गर्नुहुन्छ ?)

(May be multiple selection) (धेरै विकल्प छान्न सकिने)

- a) Elderly members (above 60 years), (साठी वर्षमाथिका वृद्धवृद्धा) b) Adults (20-60 years), (बीसदेखि साठीवर्षका व्यक्ति) c) Adolescents (10-19 years), (दशदेखि उन्नाईसवर्षका किशोर) d) Children (below 10 years) (दशवर्षमुनीका केटाकेटी)

12. Who support/share you smoking in your family?

(तपाईंको परिवारमा तपाईंसँगै कसले धुम्रपानमा सहकार्य वा सहयोग गर्छ ?)

- a) Parents, (अविभावक) b) Siblings, (सहोदर व्यक्ति) c) Children, (केटाकेटी) d) Spouse (जीवनसथी) e) Nobody, (कोही छैन) f) Other (अन्य)

13. Who oppose you smoking in your family?

(तपाईंको परिवारमा तपाईंलाई कसले धुम्रपानमा अवरोध वा असहयोग गर्छ ?)

- a) Parents, (अविभावक) b) Siblings, (सहोदर व्यक्ति) c) Children, (केटाकेटी) d) Spouse (जीवनसथी) e) Nobody, (कोही छैन) f) Other (अन्य)

14. Who support/share you smoking in your community?

(तपाईंको समुदायमा तपाईंसँगै कसले धुम्रपानमा सहकार्य वा सहयोग गर्छ ?)

- a) Neighbors, (छिमेकी) b) Friends, (साथीसागी) c) Social Workers, (सामाजिक कार्यकर्ता) d) Elderly/Respected People, (वृद्ध, सम्मानित व्यक्ति) e) Nobody (कोही छैन)

15. Who oppose you smoking in your community?

(तपाईंको समुदायमा तपाईंलाई कसले धुम्रपानमा अवरोध वा असहयोग गर्छ ?)

- a) Neighbors, (छिमेकी) b) Friends, (साथीसागी) c) Social Workers, (सामाजिक कार्यकर्ता) d) Elderly/Respected People, (वृद्ध, सम्मानित व्यक्ति) e) Nobody (कोही छैन)

16. Do you want to quit smoking? (तपाईं धुम्रपान त्याग्न चाहनुहुन्छ ?...a) Yes, (चाहन्छु) b) No (चाहन्न)

17. Why have you continued your smoking to the present time?

(तपाइले आजसम्म धुम्रपानलाई किन निरन्तरता दिनुभएको हो ?),

- a) I am strongly addicted and cannot give up (म नशामग्न छु र छोड्नै सकिन्न),
- b) It makes no difference for me (छाडेर पनि केही फरक पर्ने होइन),
- c) It has become like my friend (धुम्रपान त मेरो साथिजस्तै भएको छ),
- d) I cannot deny the peer requests (साथिभाईको करकाप नकार्नै सकिन्न),
- e) Other (अन्य)

18. How many times do you smoke in a day? (तपाईं दैनिक कति पटक धुम्रपान गर्नुहुन्छ ?)

- a)Once (एकपटक), b)Twice (दुईपटक), c) 3-5 times (तीनदेखि पाँचटक), d)More than 5 / Several times (पाँचटक भन्दा बढी)

19. What do you dislike about smoking? (तपाईं धुम्रपानको के पक्ष मन पराउनुहुन्न ?)

- a) Halitosis (bad breath) (शवासको दुर्गन्ध), b) Wrinkles and early ageing (चाउरी र छिटो बूढो देखिने), c) Social problems and rejections (सामाजिक समस्या र वहिस्कार), d) Health problems (स्वास्थ्य समस्या), d) Other (अन्य)(Low energy, medications, doctor's concerns, etc.). (शक्तिकषय, औषधी, डाक्टरको चासो-सल्लाह, आदि ।)

20. What do you say to yourself? (आफैलाई तपाईं के भन्न रुचाउनुहुन्छ ?)

- a)Occasional smoker, (आकलभुकल धुम्रपानकर्ता) b)Regular but low-rate smoker, (नियमित तर न्यून धुम्रपानकर्ता) c)Self controlled smoker, (स्वयं-नियन्त्रित धुम्रपानकर्ता) d)Chain smoker, (अत्यधिक धुम्रपानकर्ता) e)Others (अन्य)

Thank You!

(धन्यवाद ।)

APPENDIX – II

(Work Schedule)

The time schedule of this research work will be as given in the following table.

Activities	Months of 2011																							
	Feb.		Mar.				Apr.				May.				Jun.				Jul.				Aug.	
	Weeks		Weeks				Weeks				Weeks				Weeks				Weeks				Weeks	
	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2
1. Literature Review																								
2. Proposal writing and Development of Tools																								
3. Standardization of Tools and Data Collection																								
4. Data Analysis and Interpretation																								
5. Report Writing																								
6. Submission of the Draft Report to the Department																								
7. Submission of the final report to the Department																								

APPENDIX III

(Individual Interview Schedule)

	Steps of Interview Procedure	Time Scheduled
1	Sampling the respondents for interview.	1 st week, April
2	Determination and Selection of interviewees.	2 nd week, April
3	Preparation of the structured questions.	3 rd week, April
4	Pilot study for the standardization of the questions.	4 th week, April
5	Amendment and finalization of the structured questions.	
6	Information and acquisition of permission.	1 st Week, May
7	Determination of time and place.	2 nd Week, May
8	Interview procedure for data collection. (Approaching to the respondents, Introduction and formalities, warming up activities, Rapport building, Interviewing with the pre-determined structured questions, Note making and keeping for the analysis and interpretation).	3 rd Week, May

The Set of Structured Questions for the Interview.

1. When have you learnt smoking? Which year?
2. What was your first experience of smoking?
3. What was the factor you liked for its continuation and habituation?
4. What do you think about your interest on smoking?
5. Why is it so? What is the reason behind this?
6. Can you give up smoking now? What are the problems of giving it up?
7. How is it easy to learn smoking in our community?
8. Which other substances of smoking do you know about?
9. Which other apparatus of smoking do you know about?
10. What is your best preferred substance and apparatus? Why?
11. Have you ever requested or forced others to smoke?
12. Except you, how many of your family members smoke?
13. Other contextual questions if relevant and significant.
14. How do you feel about being a smoker?
15. What would you say to other smoker?
16. What would people who care about you say?

Thank You!

APPENDIX IV

(BUDGET OF THE RESEARCH STUDY)

S.N.	Particulars	Amount (RS.)
1	Transportation	1,000
2	Stationeries	1,500
3	Pilot Study Expenses	1,000
4	Printing Expenses	2,000
5	Food and Lodging	2,500
6	Respondents Compensations	3,800
7	Logistics	2,000
8	Communications	1,200
9	Desktop, computer setting, designing	2,000
TOTAL		17,000