

CHAPTER I

INTRODUCTION

1.1 Background

Tuberculosis is an infectious disease, which spreads through the air from one person to another. It is caused by *Mycobacterium Tuberculosis*. Robert Koch discovered *Mycobacterium Tuberculosis* as a causative organism of Tuberculosis in 1882. TB has been a major public health problem since ancient time. There are several researches done about tuberculosis and its chemotherapy. Nowadays there are very good diagnostic tools and effective drugs for this disease.

Health cannot be isolated from its social context. The last few decades have shown that social and economic factors have as much influence on health as medical interventions. All these factors have a direct bearing on the incidence, course and outcome of a wide variety of communicable and non-communicable diseases as well as on many other health problems besetting the world today. They also have an important effect on the provision of health care to all strata of society. Poverty, malnutrition, poor sanitation, lack of education, inadequate housing, unemployment, poor working conditions, cultural and behavioral factors all predispose to ill health. (Park, 2002, p.459)

Tuberculosis is a social disease with medical aspects. It has also been described as a barometer of social welfare. The social factors include many non-medical factors such as poor quality of life, poor housing, and overcrowding, population explosion, lack of education, large families, early marriage, lack of awareness of causes of illness, etc. All these factors are interrelated and contribute to the occurrence and spread of tuberculosis. Tubercular Bacillus has been thriving along with Human Habitat since time immemorial and will thrive till there are human beings in this earth. The waxing and waning of TB Epidemiology will depend upon the socio-economic status of a country. Nepal, being poor country, the problem of tuberculosis will be acute all the time. (Maskey: In SOUVENIR, 2000, P.27)

Tuberculosis occurs not only in the body, in the sense of an ontological order, but in time, in place, in history, in the lives of men and women, and in the social world.

(Ulta-Britt: 2004, p.15)

Tuberculosis is a social disease, and presents problems that transcend the conventional medical approach. Its understanding demands that the impact of social and economic factors on the individual be considered as much as the mechanism by which tubercle bacilli cause damage to the human body. (Dubos, 1992)

TB disrupts the social fabric of society by taking children out of school and stigmatizing individuals. It traps the world's poorest, most marginalized and vulnerable groups in a vicious cycle of disease and poverty. It is a complex socioeconomic problem that impedes human development and cannot be defeated by the health sector acting alone. Confronting TB requires collaboration across government sectors and action across society. (STC News letter, World TB Day 2000)

The association of tuberculosis with poor socioeconomic status has been noted and perhaps is even stronger today. The history of TB parallels the socioeconomic ills of humankind. Endemic in many populations, it rose to epidemic proportions with the advent of overcrowding, under nutrition, lack of fresh water, and poor sewage disposal. Individuals with tuberculosis were isolated, treated with various potions, and subjected to a variety of surgical interventions. (Reichman and Hershfield: 1993)

Although medical scientists are often hesitant to study the possible effects of mind on the body, there have been persistent hints in the tuberculosis literature that psychological, social, and economic stresses have an adverse effect on tuberculosis. Stress is a common thread running throughout the risk factors of poverty, marital disruption, institutionalization, and substance abuse. (COMSTOCK AND CAUTHEN: In Reichman and Hershfield 1993 p.41)

Poor and vulnerable groups who face barriers to accessing general health and TB services, Such people may include: those in absolute economic poverty; those disadvantaged by gender-related factors; marginalized ethnic groups; people living in remote locations; the urban poor; other people in special situations and groups.

Social and cultural barriers include, promotion of community mobilization; ensuring that staff attitudes do not reinforce stigma; advocacy for worker protection to avoid loss of work as a result of TB; ensuring that the TB health promotion plan takes account of poor and vulnerable groups;

ensuring that gender-related needs are addressed in TB control activities; exploring possibilities for referral mechanisms from traditional health-care providers. (WHO Stop TB Strategy, 2008 p.166)

Poor social conditions which increase the risk of being infected, such as overcrowding should be improved and there should be education of the public in methods of transmission and methods of control. Health education on hygiene, early detection and possibility of treatment will provide an unknown but considerable degree of protection and promotion. It is proved that it is difficult to impart this knowledge and change the attitudes of large section of the population.

1.2 Introduction of TB

1.2.1 Epidemiology of TB

Epidemiology is the basic science of preventive and social medicine. Epidemiology has been defined by John M Last in 1988 as "The study of the distribution and determinants of health-related states or events in specified populations, and the application of this study to the control of health problems". (Park: 2002, p.44)

Estimates of disease burden in any populations are based on information derived from:

- ♦ Prevalence surveys of tuberculosis disease
- ♦ Tuberculin surveys
- ♦ Case notification
- ♦ Health service utilization surveys

The information upon which current estimates of case load in Nepal have been bases is a series of local tuberculin and prevalence surveys. National estimates of burden of disease were based on this information. (NTP Nepal Annual Report FY 2063/64, Page, 6)

There is some evidence that the risk of acquiring infections increase with age during the period from infancy to early adult life. In nearly all populations around the world, males are more likely to have been infected than females, again probably reflecting their opportunity for more and varied contacts in most societies. The change in risk of occurring after infection is not known with respect to calendar time. There are, however, some data showing that the risk of disease is highest shortly after receipt of infection and that it declines thereafter. Race appears to have little influence on the risk of disease once infection has occurred. Persons with larger numbers of

tubercle bacilli are at greater risk than those infected with smaller numbers of organisms. (COMSTOCK AND CAUTHEN: In REICHMAN AND. HERSHFIELD, 1993, p.32)

WHO estimates prevalence of all types of TB for Nepal at 67,546 while the number of all forms of incidence cases is estimated around 48,766. Each year 21,827 smear positive infectious TB incidence cases are expected to arise in the country. With the introduction of DOTS number of deaths has dramatically reduced from 9712 in 1990 to 6436 in 2007. The proportion of MDR-TB is 2.9 percentage among new cases and 11.7 percentage among retreatment cases. The prevalence of HIV is steadily rising in Nepal. The latest HIV prevalence among TB patients is 2.4 percentage. (NTP Nepal Annual Report FY 2065/66, Page, 4)

The main reasons for the burden of TB are: poverty and wide gap between rich and poor in various populations, neglect of the disease, poor health infrastructure, the impact of the HIV pandemic etc.(WHO: 2003 p.11)

Epidemiological burden:

The incidence of all types of tuberculosis new cases per 100000 populations is 176 and the incidence of sputum positive pulmonary cases is 79. There are 2.4 percent HIV positives among new TB cases. 2.9 percent are MDR TB among all types of new TB cases. But the percentage of MDR TB is quite high (11.7%) among previously treated TB. (NTP Annual report 2006/07)

Surveillance and DOTS implementation:

The case detection rate of all types of TB is 72.4 percentage and the case detection rate among new pulmonary TB is 70 percentages. The treatment success rate is satisfactory (88%) among new pulmonary cases. (ibid)

1.2.2 What is TB?

Tuberculosis is not a result of curse or sin, neither a hereditary disease, it is an infectious disease caused by bacteria called Mycobacterium Tuberculosis. TB affects mainly lungs. It is reported that 80 percent of the TB cases are pulmonary TB (Lung's TB). But it also affects the lymph nodes, the meninges, the intestines, the bone and joints, the skin, the brain and other organs.

There are two types of TB according to parts of the body affected.

a. Pulmonary TB:

When tuberculosis occurs in the lungs then it is called Pulmonary TB.

b. Extra pulmonary TB:

If TB affects organs other than lungs, such as lymph nodes, bones and joints, genito-urinary tract, meninges, pluera, intestines, heart, brain, skin etc, it is called as Extra Pulmonary TB.

1.2.3. How does TB Spread?

Tuberculosis is spread by people, not by insects, blood supplies or water. Only people who are sick with TB of the lungs can spread the disease. (WHO: 1995 Page 6) Active pulmonary TB is the only form of the disease, which is infectious, spreading from person to person via the air. The lungs of a person with active disease develop cavities which are full of TB germs. When the person coughs or sneezes large numbers of TB germs from the lungs are sprayed into the air in tiny droplets. (AHRTAG, UK: Dec 1995-Feb 1996)

The bacteria can then settle in the lungs for many years or for life. It can begin to multiply and can spread through the blood stream to cause disease in other parts of the body. TB in other parts of body, such as the kidneys or brain etc, is usually not infectious.

People in close contact with the patients or those exposed to a TB Patients for a long duration are most likely to contract the disease. This includes family members, friends, and co-workers. (Roanapithayakorn and Narain: 1999 page 5)

Most people who are infected never become sick, because their immune system "walls off" the TB germs. It is known that people with weekend immune systems have a much greater chance of becoming sick with TB. (WHO: 1995 Page 6)

Smoking is not a direct cause of TB. TB patients must be infected by TB germs. However, heavy drinking or heavy smoking weakens the immune system. Once getting TB infection, a person having weak immunity is at risk developing TB disease.

TB is spread from person to person through the air, not via eating and drinking. However there are several diseases that can be transmitted through saliva. For the sake of personal and community hygiene, each individual should be aware of safety measures while eating and drinking. (Ngamvithayapong at al, 2001)

No everyone who is infected with the bacteria gets TB. Only 10 percent of people who are infected get TB. If the infected person has good immunity, disease may never occur. If their

immunity become weak later (e.g. In Malnutrition, HIV infection etc.), then TB may develop soon.

1.2.4 Symptoms of TB

Once TB bacteria become active and start multiplying in the body, they can cause symptoms according to the part of the body involved. Lungs are the common sites of infection.

The respiratory symptoms of TB include cough more than two weeks, chest Pain, blood-spitting, breathlessness and localized wheeze. The general symptoms of Tuberculosis are loss of weight, weakness, fever with rise in the evening, sweating at night, Tiredness and Loss of appetite etc.

1.2.5 Who are vulnerable to TB?

There are number of known factors that make people more susceptible to TB infection: HIV infection is one of the most important factors for susceptibility to TB infection. Smoking more than 20 cigarettes a day is said to increase the risk of TB by two to four times. Diabetes mellitus is also an important risk factor that is growing in importance in developing countries. Other disease states that increase the risk of developing tuberculosis are Hodgkin lymphoma, end-stage renal disease, Chronic lung disease, malnutrition, and alcoholism. (Bhatt at all: 2009 p. 32)

Family and close contacts of the patients, The elderly, People who injects illicit drugs, People who live or work in certain settings, such as nursing homes, prisons, shelters for the homeless or TB treatment centers, People HIV infection, People addicted to alcohol, Malnourished people, People with poorly controlled Diabetes, People having chronic lung diseases, Smokers and People suffering from cancers are at risk of contracting infections and developing the disease because of their exposure to a patient with TB. (Saarc TB and HIV/AIDS Center: 2006, page, 11)

1.2.6. Diagnosis of TB

The most reliable way of making the diagnosis is to find TB in a direct smear of the sputum microscopy. It is accessible to the patient and cost effective.

One cannot diagnose TB with certainty on X-ray. Other diseases often look very similar. Tuberculin test is much less valuable as a tool for diagnosis. (Crofton at all: 1995). Biopsy and culture test are other reliable tools of diagnosis (If it is not diagnosed by direct smear

microscopy) but they are inaccessible and very expensive. It needs very skilled manpower and modern and well-equipped laboratory.

1.2.7 Diagnostic and Laboratory services:

Tuberculosis bacteriology is one of the fundamental aspects of a national tuberculosis control programme and a key component of the DOTS strategy, yet the tuberculosis laboratory service is often the most neglected component of these programmes. Diagnosis of tuberculosis and monitoring of treatment progress rely heavily on bacteriological examination of clinical specimens. (Isabel et al: WHO 1998, p.7)

A wide network of properly equipped laboratories with trained personnel is necessary to ensure access to quality-assured sputum smear microscopy. (WHO: 2006, page 10)

Tuberculosis laboratory networks must meet high-quality and reliable laboratory services. For sputum smear microscopy a quality control system for the network is in place. But the quality control system is supported by and mostly dependent on INGO support. There is no clear planning for the eventually that the INGOs might phase out quality control support. (Nepal NTP In-depth Review, 2007)

Sputum smear microscopy remains the key tool for diagnosis of infectious TB. NTP operates a network of laboratories with permanent Quality Control System. Currently 471 microscopy centers are offering smear microscopy services, among these 391 operates within government Health System and 80 through partner I/NGOs. Culture and DST facilities are available from NTC and GENETUP laboratories at the central level. (NTC, Annual Report 2065/66 page7)

Delay in diagnosis of tuberculosis causes the spread of infection in the community, increases patient expenditure, and is associated with a higher risk of mortality. TB diagnosis can be delayed when a patient postpone seeking care until long after the onset of symptoms (patient delay), or when health providers take more time than required to diagnose patients seeking care (health system delay). Decentralization of TB services through a strengthening of the quality of health facilities, and raising public awareness of the disease to increase service utilization could reduce the long health system delay in rural areas of Nepal.(HERD: Annual Report, 2008)

1.2.8 Treatment of TB.

There are few diseases of such global importance for which the standards of treatment have been so rigorously defined and recommendations so universally accepted as for tuberculosis. (RICHARD . O'BRIEN: In. REICHMAN AND HERSHFIELD, 1993, p.207)

The aims of treatment of TB are; to cure the patient of TB, to prevent death from active TB or its late effects, to prevent relapse of TB, to decrease TB transmission of TB to others and to prevent the development of acquired drug resistance. (WHO: 2003 p.27)

We have had effective anti-TB treatment for nearly 50 years. The problem is not lack of an effective treatment. Properly applied SCC fulfills the above aims and prevents the emergence of drug resistance M. Tuberculosis. (Harries et al, 2005)

TB is fully curable disease. TB drugs are available at free of cost in all government health facilities. The total duration of treatment is 6 to 8 months. Treatment should not be discontinued before completion of full course. If treatment is interrupted before completion of full course the disease relapse with drug resistance, which is dangerous to patient and difficult to cure. Isoniazid, Rifampicin, Pyrazinamide, Streptomycin and Ethambutol are commonly used main anti-TB drugs available for treatment of tuberculosis. (Saarc Tuberculosis Center: 2006 P. 15)

1.2.9 Drugs and Logistics:

An uninterrupted and sustained supply of quality-assured anti-TB drugs is fundamental to TB control. For this purpose, an effective drug supply and management system is essential. (WHO, THE STOP TB STRATEGY 2006, page 11)

The NTP provides drugs and other programme supplies on regular four monthly basis. NTP drug ordering system originates from the trimester reporting and planning meetings from clinic level staff to calculate their requirements based on trimesterly utilization and buffer stocks requirements. Each level of the programme maintains a four months additional buffer stock to prevent stock out. (NTC: Annual Report 2005/06 p.9)

1.2.10 DOTS

To ensure the treatment cures the patient, we have to ensure patient adherence to the treatment. It is difficult for a patient to adhere to anti-TB treatment for 6-8 months. It is difficult to predict which TB patient will adhere to self-administered treatment. (Harries et al... 2005)

Directly Observed Treatment Short course (DOTS) ensures cure of every TB patient.

Direct observation of treatment means that a supervisor watches the patient swallow the tablets. This ensures that a TB patient takes the right drugs, in the right doses, at the right intervals. (Roanapithayakorn and Narain, 1999 page 31)

Why DOTS?

-) DOTS ensure cure rates as high as 95%.
-) DOTS prevent development of MDR TB.
-) DOTS prevent TB bacilli from spreading to others.
-) DOTS help to reduce medical costs and lost Work days.
-) DOTS prolongs survival of HIV infected TB patients.

(NTC, Nepal: 2004, bulletin)

Directly observed treatment is an important element in the internationally recommended policy package for TB control. DOT means an observer watches the patient swallowing their tablets, in a way that is sensitive and supportive to the patients needs. This ensures that a TB patient takes the right ant-tuberculosis drugs, in the right doses, at the right intervals. DOT is required to ensure treatment adherence, the accountability of TB services and helps to prevent the emergence of drug resistance. (WHO: 2003 p.48)

The major rationale for direct observation of treatment is the prevention of clinically significant drug resistance. (Weis et al: Engl and Med 1994; 330:1179-84)

Supervised treatment, which may have to include direct observation of therapy (DOT), helps patient to take their medicine regularly and complete treatment, thus achieving cure and preventing the development of drug resistance. Supervision must be carried out in a context-specific and patient sensitive manner, and is meant to ensure adherence on the part both of providers (in giving proper care and support) and of patients (in taking regular treatment). Depending on the local conditions, supervision may be undertaken at a health facility, in the workplace, in the community or at home. A treatment partner or treatment supporter who is acceptable to the patient and is trained and supervised by health services should provide it. (WHO: THE STOP TB STRATEGY 2006, page 10)

Nepal has now been implementing DOT over the whole country since 2001, and the NTP and DOTS staffs have considerable experience in implementing DOT, and understanding of the difficulties involved. Many staffs are pragmatic in their application of DOT, for example allowing the seriously ill to take their medicines at home with supervision and support by a family member. (Nepal NTP IN-depth Review: 2007)

1.2.11 Prevention of TB

There are three basic strategies for the prevention of tuberculosis. Two means of primary prevention are vaccination and rapid case finding and diagnosis, both of which will prevent new cases from developing. Preventive chemotherapy is a method of secondary prevention that takes advantage of the latent period following infection to prevent the development of clinically recognizable disease, infectiousness, and transmission to others. (LAWRENCE J. GEITER: In. REICHMAN AND HERSHFELD, 1993 p.241)

Properly applied TB chemotherapy is effective in curing infectious cases, thereby interrupting the chain of transmission. The best prevention of TB is therefore the cure of infectious TB cases. (WHO: 2003 p.12)

Prevention of TB includes interventions to reduce transmission, and to reduce the risk of TB disease in infected persons. Some of the interventions result in specific activities of TB control programmes: contact tracing, detection of sources, infection control, preventive therapy, BCG vaccination, and treatment of HIV infected persons with ARV. Other factors that strongly influence the risk of becoming exposed and infected (such as overcrowding) or developing active TB (such as HIV, poor nutrition, smoking, diabetes) often cannot be readily influenced by the TB control programme activities and resources and usually do not fall under the direct responsibility of the NTPs (ibid p.30)

1.2.12 Contact tracing

The index case should be interviewed as soon as possible after diagnosis to identify contacts. The interview should, as a first priority, focus on the household, but the questions should cover other environments, as mentioned above. Ideally, the interview should be conducted by a person familiar with the culture and the setting. Wherever possible, a home visit should be made to obtain a clearer understanding of the patient's circumstances and to confirm the results of the

interview. All identified prioritized contacts of the index case should be instructed to come to the health facility for evaluation. The identified contacts should be listed; if they do not appear for evaluation, a home (or other setting) visit should be made. (ibid p.70)

If tuberculosis elimination efforts are to be successful, preventive activities must be targeted to the groups at highest risk for progression from tuberculosis infection to disease. Although the focus of contact tracing is prevention, other potential benefits of the investigation may include the identification of additional cases of tuberculosis and the opportunity for education about tuberculosis disease, the risk of transmission, the TB/HIV connection, and so forth.

As per case of tuberculosis begin as a contact, the ability to rapidly identify tuberculosis cases and to effectively conduct the subsequent contact tracing is the cornerstone of tuberculosis control public health efforts. Without this capacity, transmission of tuberculosis will persist, the tuberculosis will persist, the tuberculosis case rate will continue to escalate, and tuberculosis elimination will be impossible to achieve. (ETKIND: In REICHMAN AND HERSHFIELD, 1993, p.286)

Since tuberculosis is a contagious disease screening of close contacts of patients with tuberculosis is a very important part of good NTP. Early diagnosis and prompt treatment of TB is important in curing TB in individuals and controlling TB in the community.

Educating the index case and contacts regarding symptoms is important as the disease may develop later in contacts. (Siribaddana: STC Newsletter, Vol-XII, Page 15)

1.2.13 Some facts about TB

- J TB kills more youth and adults than any other curable infectious disease.
- J TB is a contagious disease but only people that are sick with pulmonary tuberculosis are infectious.
- J Poverty increases the risk of tuberculosis, impoverishes its victims.
- J More than 90 percent of TB cases and deaths occur in low and middle income countries.
- J TB carries a direct cost to the health services (diagnosis, treatment and control).
- J TB is leading cause of death among people who are HIV positive.
- J Late diagnosis, inadequate treatment, over crowding, poor ventilation and repeated prison transfer encourage the transmission of TB infection.
- J Every infectious patient cured reduced the risk to everyone of contracting TB.

-) From a public health perspective, poorly supervised, incomplete treatment of TB is worse than no treatment at all.
 -) In some parts of the world, the stigma attached to TB leads to isolation, abandonment and divorce of women.
 -) TB can be readily and inexpensively cured with DOTS.
- (Source: Saarc Tuberculosis and HIV/AIDS Center: PHARMACISTS, 2006, p 28)

1.3 Statement of the Problem

Tuberculosis infects people in every country of the world, rich and poor. Poverty, malnutrition, poor sanitation and overcrowding all contribute to the spread of disease. (WHO/CDS/STB/2001.16) The global incidence rate of TB is growing at approximately 0.4 percent annually, but much faster in developing countries, particularly in Sub-Saharan countries. (WHO/CDS/TB/2003.316) Increasing threats of HIV/AIDS and MDRTB, along with fast movement of the population are the major threats of the current TB control programme. It is expected that HIV will increase number of TB cases by at least 10 percent and by a considerably higher percentage if HIV becomes much more widespread. And the situation is more severe in areas where the private sector is strong and unregulated, weak public health system, and poor resource mobilization. (Stop TB News. Issue 7, 2002)

Tuberculosis is the Worlds foremost cause of death among adults from a single infectious agent. Tuberculosis is still prevalent and remains as one of the significant Public Health Problems in most developing countries. Tuberculosis is one of the major public Health Problems in Nepal. About 45% of the total population is infected with TB, out of which 60% are in productive age. Every year 40,000 people develop active TB, of whom 20,000 have infectious pulmonary disease. These 20,000 are able to spread the disease to others. About 5000-7000 people continue

to die every year from this disease. In Kailashnagar Tol of Tansen Municipality there are many people suffering from TB and some were became Victims of TB.

This study has focused in searching the socio-cultural factors associated with TB as well as Knowledge, attitude and practice about TB. It is directed in finding the awareness of following question.

1. Does the community have adequate Knowledge of TB?
2. What is the perception of society towards TB?
3. What is the care seeking practice among TB suspects and TB patients?

1.4 Rational of the study:

Tuberculosis is the most prevalent chronic communicable disease in Nepal. Strategies for control of Tuberculosis are being implemented through government health facilities. Poor health infrastructure, lack of adequate knowledge, attitude and beliefs related to TB are recognizes barriers to TB Control in Nepal.

Responding the challenges of TB control, especially in reducing the impact of tuberculosis to the society, early case detection is of the highest priority. Considering the fact that the changing socio-cultural behavior in living styles, understanding the magnitude of delay existing at different points of health care system under current NTP and its contextual can provide evidence for making policies and programmes aimed at reducing the burden of the disease.

Few research studies exist exploring the knowledge attitude and belief towards tuberculosis in Nepal. Most of the research studies were based on the reports from government health facilities and based on the TB patients, without exploring the subject matter in depth. Since social and cultural aspects of tuberculosis is considered as important area for the control of tuberculosis. Lack of consideration of such aspect might have been the reason why tuberculosis control is not progressing at a rate. It should have identified in the Nepalese context is assumed to contribute in the tuberculosis control strategies intensification.

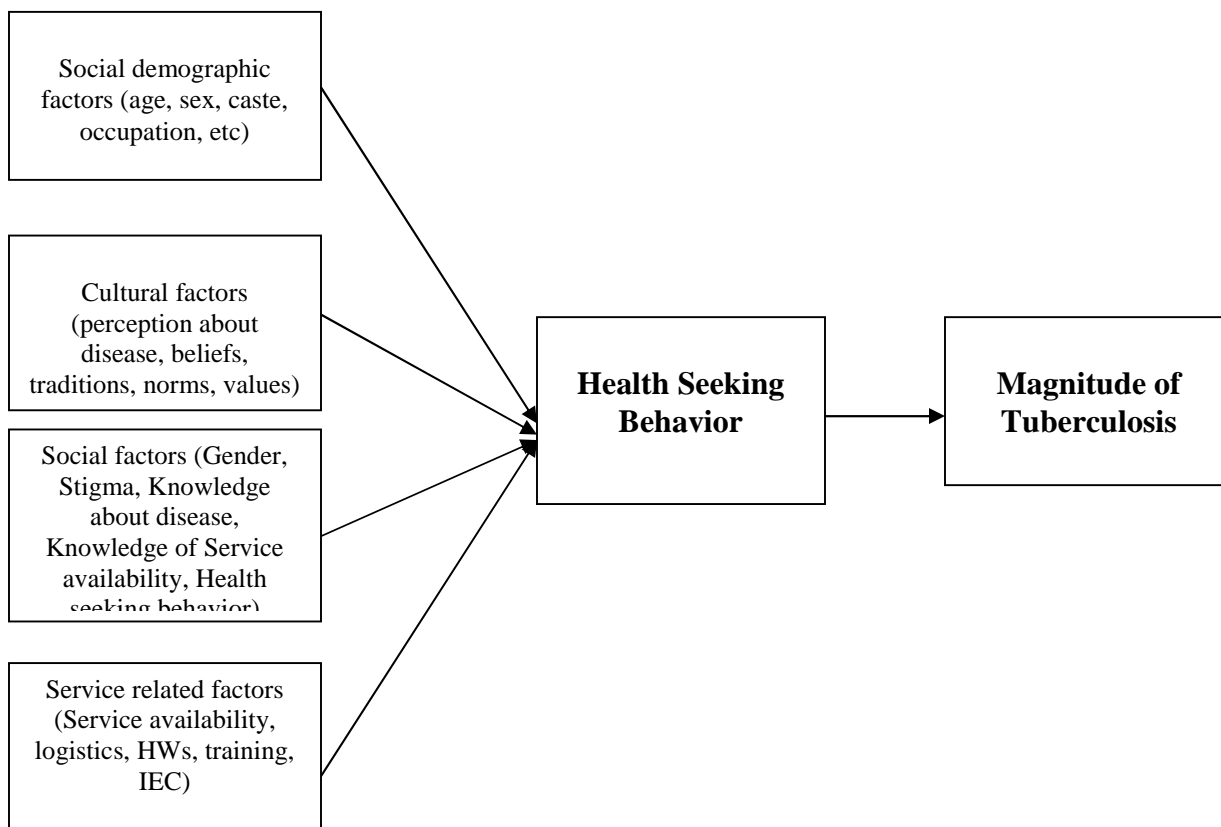
1.5 Objective of the Study

The general objective of this study is to know the People's perception towards Tuberculosis in Palpa district especially Kailashnagar Tol of Tansen Municipality. The specific objectives of this study are:

-) To find out the knowledge of community regarding Tuberculosis
-) To evaluate attitude (perception: socio-cultural) of Community People towards TB.
-) To assess Tuberculosis service efficacy and patients perspective on Tuberculosis.

1.6 Conceptual Framework:

Tuberculosis is a medical problem as well as socio-cultural problem. The prevalence incidence rates of TB are higher in comparison to other developing countries, which hampers the socio-economic sector of Nepal.



1.7 Limitation of the study:

The result of this study cannot be generalized as it is a small scale study done for partial fulfillment of the academic requirements within short period of time and facility.

This study is concerned only with sampling survey done in houses and persons involved in group discussion of the Tansen Municipality-7 Kailashnagar, of Palpa district.

The response of the interview in this study might not be 100 percent accurate, because some bias and errors in the interpretation of concept between interviewer and interviewee.

It studies the socio-economic and cultural aspects of TB of Palpa District. It will reflect the reality and the status of Tansen Municipality-7 regarding Tuberculosis. Thus the findings and conclusion drawn from this study may not be widely generalized in the context of other parts of the country. Obviously, some generalization can be made while considering the case of country. It can also be generalized in same geographical/ecological situation and socio-cultural situation.

1.8 Significance of the Study

Tuberculosis has multidimensional aspects. It is not only the medical problem, it has also a socio-economic and cultural aspects. Therefore isolated health sector alone can not control TB. The fight against TB needs everyone's support. The social mobilization is very important for TB control. TB patients need to take their medicine for 6 to 8 months regularly, which needs special efforts for which every one of community has to contribute. Advocacy to mobilize resources and effect policy change, media and special events to raise public awareness, partnership building and networking and community participation are all key social mobilization. It is expected that

this study will be able to address the importance of socio-economic and cultural aspects of Tuberculosis. This study also expected to find the real status of people's knowledge, attitude and behavior towards TB, the level of stigmatization, the effectiveness of Governments TB control Program. It may help the future researchers to carry out the issues concerned with socio-economic and cultural aspects of TB. It will be useful in providing some information for National Tuberculosis Control Program.

1.9 Definitions:

Agent: A factor, such as micro-organism, chemical substances or form of radiation, whose presence, excessive presence or relative absences is essential for the occurrence of a disease.

Bacilli: Long, rod-shaped bacteria.

BCG: Bacille Calmette -Guerin. A live vaccine against tuberculosis derived from an attenuated strain of *M.bouis* by two French doctors, Calmette and Guerin.

Case finding: To detect the cases of active TB especially those have infectious sputum.

Case holding: The cases of TB are treated with anti-TB drugs till they are cured.

Case of tuberculosis: A definite case of TB (defined below) or one in which a health worker (clinician or other medical practitioner) has diagnosed TB and has decided to treat the patient with a full course of TB treatment

Chronic TB case: A patient with TB who is sputum-positive at the end of a standard retreatment regimen with essential anti-tuberculosis drugs.

Close contacts: individuals who have shared air with the presenting case for a prolonged period of time

Cohort: A well-defined group of people who have had a common experience or exposure who are then followed up for the incidence of new diseases or events, in a cohort or prospective study.

Communicable diseases: Diseases which spread from person to person by physical means like contaminated water, air, food, direct contact, and sexual contact etc, e.g. Common cold is airborne.

Contact: An individual who has had contact with a source of an infection, a person so exposed or a case, in way that is considered to have cause significant exposure and therefore risk of infection.

Contact investigation: the process of conducting an epidemiological investigation into a case of tuberculosis.

Culture: It is a technique to grow micro-organisms artificially for the purpose of diagnosis, research etc. It is also used to test the sensitivity of the organism to a drug.

Cure Rate: The percentage of all registered pulmonary smear- positive patients who have completed treatment and have 2 consecutive sputum smear- negative results at 5 months and end of treatment.

Cured: A sputum positive patient who has completed treatment and had 2 consecutive negative smears, at least a month apart, the last being in the last month of treatment.

Defaulted: A patient who is more than 60 days late in collecting medicines.

Definite case of tuberculosis. A patient with Mycobacterium tuberculosis complex identified from a clinical specimen, either by culture or by a newer method such as molecular line probe assay. In countries that lack the laboratory capacity to routinely identify M. tuberculosis, a pulmonary case with one or more initial sputum smear examinations positive for acid-fast bacilli (AFB) is also considered to be a “definite” case, provided that there is a functional external quality assurance (EQA) system with blind rechecking.

Diagnosis: This is the process of determining the nature of disease. This may involve physical examination, biochemical tests, x-ray etc. Once the disease is diagnosed, the 'diagnosis' is made.

Dhami: Traditional healer that is considered to possess supernatural power to cure diseases. But this is not, scientifically, true.

Droplets: A single act of coughing can produce 3000 droplets which are 1-5 micron in diameter. During the act of coughing, sputum as droplets rushes out from the body under pressure and form an aerosol. As droplets are sufficiently small to reach lung alveoli, can initiate an infection there.

Droplet nuclei: The residue of dried droplets that may remain suspended in the air for long periods, may be blown over great distances, and are easily inhaled into the lungs and exhaled.

Drug Reactions: It is an effect of drug seen along with desired therapeutic effect. It can be harmful to the patient. Toxic reactions are seen in only less than 4 percent of the patients taking anti-TB drugs.

Early morning sputum specimen: A sputum specimen that a patient produces in the morning before going to see the health worker.

Endemic: Near the usual rate of occurrence.

Epidemics: Occurrence of disease in higher than normally expected.

Epidemiology: Study of the distributions and determinants of health-related states or events in specified populations and application of study to the prevention and the control of health problems

Extra-Pulmonary TB: TB disease affecting outside lungs is called Extra-Pulmonary TB.

Follow-up: The process of examination at regular intervals to know whether the treatment is responding or not, the treatment can modified, if needed.

Haemoptysis: Spitting of blood coughed up from the chest.

Gender: It is the social difference between male and female.

IEC: Information, Education and Communication, which comprises a range of approaches, activities and outputs to raise awareness for behaviour change.

Immune deficiency: When a person's immune system is deficient and cannot satisfactorily protect the body, resulting in an increased susceptibility to infection.

Incidence: Number of new cases of disease in a defined population within a specified period of time.

Incubation Period: The time between infection by a disease-causing organism and the onset of signs and symptoms of the disease.

Index Case: The infectious individual who is believed to have transmission infection to the presenting case.

Lesion: An area of tissue damage which can be due to infectious process, cancer or injury.

Lymphadenopathy: Swelling of lymph glands, or nodes.

MDR-TB: A patient who has active tuberculosis with bacilli resistant at least to both rifampicin and isoniazid.

Morbidity: Related to or caused by disease or disability.

Mortality: Related to death.

Mycobacterium Tuberculosis: The bacterium that causes tuberculosis.

New patient: A newly diagnosed patient who has never had treatment for TB before.

NTP: The National Tuberculosis Programme is an approach within the national health system to control TB. It has policies, plans and activities.

Smear-Positive Pulmonary TB: A patient with sputum smears positive for AFB by microscopy.

Opportunistic infections: Infections that are caused by organisms to which the body is normally immune. When the immune system is depressed or destroyed, as in AIDS, opportunistic infections can take hold.

Pandemic: Epidemic that covers many countries and continent.

Polymerase Chain Reaction (PCR): A new technique that can be used to multiply one DNA molecule millions of times so that it can be detected by other tests.

Presenting case: a person with or suspected of having tuberculosis.

Prevalence: Number of events of a given disease or conditions in a given population at a designed time.

Preventive Chemotherapy: The treatment of persons with a high risk of developing tuberculosis who have no signs or symptoms of clinically or radiologically active tuberculosis, in order to prevent them from developing the disease.

Public health: Organized effort to promote health and prevent health problems.

Pulmonary TB: TB disease affecting lungs is called Pulmonary TB.

Relapse: A patient who has been cured or completed treatment, but again has sputum smear positive TB.

Return after default: A patient who missed more than 60 days of anti-TB treatment and is starting treatment for TB again.

Sensitivity: It means extent to which bacteria are vulnerable to killing or growth inhibiting effect of an antibiotic or a drug.

Smear-Negative Pulmonary TB: A patient with three sputum smears negative for AFB for microscopy but other evidences consistent with active TB.

Sputum: The secretions from respiratory tract, usually consists of mucus, which one spits out while coughing. In case of TB infection of lungs, it can contain germs of TB, which makes the spread of infection possible from one person to another while coughing or sneezing.

Sputum Smear Positive: A patient with sputum smear positive for AFB by microscopy.

Stigma: It is deep rooted belief in the mind closely related to contextual factors existing in the society towards particular human behaviour.

Syndrome: A set of symptoms and signs resulting from a single cause, or so commonly occurring together that a definite clinical picture is manifest.

Transfer in: A patient who has been transferred from another tuberculosis register to continue treatment in a different register area.

Transmission: The spread of infectious agents from one person to another.

Treatment after default: A patient who returns to treatment with positive bacteriology, following interruption of treatment for two months or more.

Treatment Completed: A sputum positive patient who completes treatment but does not fulfill the criteria for cured or a sputum negative or extra-pulmonary patient who completes treatment.

Treatment Failure: A patient who remains, or becomes, sputum -smear positive 5 months or more after starting treatment.

Tuberculosis: This is an infectious disease caused by Mycobacterium tuberculosis.

Tubercle Bacillus: Term often used to refer to Mycobacterium Tuberculosis.

Tuberculosis contacts: those persons who have a risk of acquiring tuberculosis because they have shared air with the presenting case.

Tuberculosis suspect. Any person who presents with symptoms or signs suggestive of TB.

The most common symptom of pulmonary TB is a productive cough for more than 2 weeks, which may be accompanied by other respiratory symptoms (shortness of breath, chest pains, haemoptysis) and/or constitutional symptoms (loss of appetite, weight loss, fever, night sweats, and fatigue).

Virus: An organism visible only with an electron microscope. Viruses cause a wide variety of diseases in humans, including some cancers.

X-ray: A medical procedure, which uses electromagnetic rays to visualize inside of human body to detect diseases.

CHAPTER II

Review of Literature

Literature review was done regarding both data base literature and conceptual literature materials to find the problem for study and writing proposal, sampling and developing instrumentation as well as the application of methodology for the study. It was continued throughout the study process.

A society is made by different groups of people living together in particular area which has certain rules, norms and values. The rules, norms and values of a society are not always the same or constant which are changed according to the necessity of the community. When different factors change in a society then they lead the various social and cultural change.

In primitive medicine, the concept of disease in which the ancient man believed is known as supernatural theory of disease. They believed in god, witch-craft, evil spirit and these were thought to be the causes of disease; therefore they practiced prayers, ritual sacrifices driving out evil spirit from the human body by witch-craft and other crude means and using charms and amulets to protect him against the influence of evil spirits. (Park: 2002)

Medicine has grown richly from traditional cultures of which it is a part and later from biological and natural sciences and more recently from social and behavioral sciences. The explosion of Knowledge during twentieth century has made medicine more complex, and treatment more costly, but the benefits of modern medicine have not yet penetrated the social periphery in many countries. The glaring contrasts in the state of health between developed and developing countries, between the rural and urban areas, and between the rich and poor have attracted worldwide criticism as 'Social Injustice'.(ibid p.1)

Socio-cultural and environmental factors are particularly important in Nepal. Socio-cultural factors, e.g. migration, poverty, language; environmental factors e.g. geography and climate, etc. pose particular problems for implementing the control programme. (Bam: SOUVENIR, 2000, P.30)

The society has different attitudes toward the causes of disease, mode of transmission of disease, treatment of disease. It has different behaviors and practices towards the treatment and cure of certain disease. This is also applied in Tuberculosis also. Some people think TB is results of curse or sin, some people think it is a hereditary disease and some thinks the cause of TB is Tobacco and alcohol. About 45 percent of the total populations are infected and out of which 60 percent are in productive age. TB affects, thus productivity of the people. It is not enough to deal with TB from clinical and epidemiological aspects only. The disease has to be dealt with from socio-cultural aspects also. It means reciprocal action of the individual and the community towards the disease has to be taken into account, for example, the level of awareness/knowledge of the people, beliefs and health seeking behavior of people in relation of society and culture, community participation etc.

There is an intimate relationship between health situation and the economic level, which, in its turn, depends on very different ecological, demographical, historical, cultural and sociological factors. This disease spreads when the inhabitant face unfavorable socio-economic and related conditions: penury, hunger, malnutrition, high infant mortality, unemployment, low minimal salary, inflation, recession, poor housing, slums, promiscuity, lack of hygiene, illiteracy, lack of family planning, ecological degradation, corruption, political instability, rebellion, internal war etc.

Nepal is high mountainous country and has not developed transportation system well all over the country. People have to walk 2-4 hours or even more to get health facility. Therefore they can not get timely medication, information and lack of awareness of disease; they do not use continually medicine. It may develop relapse and resistance to drug.

Several studies regarding the use of health care point out that various demographic, socio-cultural, economic and need factor based on an individual's perception of his or her illness are important determinants of health service use. Durkin-Longley 1982, found that upon recognizing an illness, a tuberculosis patient's family first responds to the symptoms by preparing home remedies, which are generally folk or traditional medicines. If the symptoms persist, the family then forms a "therapy managing group" and selects from a multitude of therapeutic options.

According to Streefland (1985), the most widely prevailing medical system in Nepal is "faith healing". In Nepal, society, traditional beliefs and superstitions play a distractive role. Faith healers such as Baiddyas, Jyotishi, and Jhankries enjoy wide public acceptance and play a significant part in meeting the villagers' health care needs. Achard(1983) reports that a patient in a hilly region of Nepal is more likely to contact a Baiddya, Jotishi, and /or Jhankri than any other health service provider. Similarly, Shah, Shrestha and Parker (1978) report that more than three fourths of all illness in Nepal is treated by the traditional healers. Justice found that for more illness, patients delayed seeking professional help and used home remedies included herbal treatments and foods to eat or avoid. (Khadka 1992 p. 38)

In studying Tuberculosis, one must define the particular sub-groups most at risk, and study their common beliefs, customs and practices in relation to chronic chest complaints, and know the opinions of leaders in the community. The environmental factors contributing to the disease must be determined and ways and means must be found of strengthening existing community groups. Tuberculosis is a major public health problem in Nepal. Majority of people of Nepal are illiterate. Superstition, traditional belief and practice still exist in our society. Therefore Tuberculosis is considered as disease with social stigma which may affect in health care delivery system.

Unfortunately some persons think of TB as a social stigma and delay examination and diagnosis. The development of attitudes towards the existence of infection may lead to delay in examination or to neglect in following the prescribed therapy. The efforts of health workers to teach the patient or family how to prevent the spread of infection may be regarded lightly or ignored. Efforts to develop new habit patterns and attitudes may prove a difficult task, and delay may carry the person beyond the point when cure may be achieved.

There is no evidence that TB is inherited, although this belief exists among some people. However, there are some elements that make certain persons either more or less susceptible than others. Some studies have indicated that close family members of a patient with TB are more likely to develop the disease than others. TB affects all age, Sex and race. It is a health hazard of lower socioeconomic groups and densely populated areas. TB is associated with malnutrition, overcrowding,

Factors known to be closely related to the incidence of Tuberculosis may be categorized as environmental, socio-economic, family habits and attitudes, body defense mechanisms and immunological factors.

Determination of the cause of infectious diseases was based on the prevailing theory and philosophy of the period. The prevailing belief held was that infectious disease was divine punishment for sin; emphasis was also placed on environmental causes.

The related literature has been organized and presented under the following headings.

2.1 History of TB

Paleopathologists identify skeletal deformities characteristics of tuberculosis in fossils of Paleolithic and Neolithic fauna; some believe the disease afflicted animals that inhabited the earth before the advent of mankind. Evidence of human tuberculosis, most convincingly as spinal gibbus, has been unearthed in petrified bones that date to 8000B.C. as well as in the hunchbacks depicted in statuettes and figurines of ancient artworks. Graphic instances of Pott's disease are seen in the mummified reliquiae from Pre-Dynastic Egypt and pre-Columbian Peru: a study of remarkably preserved Incan child of A.D. 700 demonstrated microscopic acid-fast bacilli in smears taken from a psoas abscess. There is evidence that a large sanatorium for treating victims of phthisis existed in Egypt about 1000 B.C. (AYVAZIAN: In Reichman, Hershfield 1993 p., p.1)

The history of tuberculosis is the history of mankind. The tubercle bacillus has participated in our explorations, our quests, and our crusades. It has been our constant companion through the early eras of ignorance and fear; through the renaissance with its advances in art, music, and poetry; through the industrial revolution; and throughout our wars. (SBARRARO: In Reichman, Hershfield 1993 p.629)

Tuberculosis an ancient malady probably appeared almost at the same time with humanity. There have been references to this ancient scourge in the Vedas and it was called "rajyakshma" (meaning 'wasting disease'). In Krishna Yajurveda Samhita, there is reference to how Soma (moon) had been affected by "Yakshma". Since Soma, who was the 'king and ruler' was affected by "Yakshma", it came to be known as "Rajyakshma". Hippocrates (460-377BC) called the disease "thisis" a Greek word which meant "to consume", "to split" and "to waste away". The

word "consumption" (derived from Latin word 'consumere') has also been used to describe tuberculosis in English literature. The Hebrew word "Schachepheth" (meaning 'waste away') has been used in the Bible. There are several references to conditions resembling Tuberculosis in Greek literature by Homer (800BC), Hippocrates, Aristotle (384-322BC) and Plato (430-347 BC), Galen (129-199 AD), Vegetius (420AD) were also familiar with consumption. Arabic physician Al Razi (850-953 AD), Ibn Sina (980-1037AD) correlated lung cavities with skin ulceration. (Sharma and Mohan 2001 P. 5, 6)

In the early days, diagnosis of tuberculosis was based on symptoms and signs. In Charak Samhita, the eleven symptoms of tuberculosis have been described. Following the pioneering efforts by Andreas Vesalius (1514-1564) postmortem examination was performed to facilitate the understanding of the pathological findings. Franciscus de Boe (1614-1672), also known as Sylvius, for the first time associated small hard nodules discovered (he used the word 'tubercle') in various tissues at autopsy with the symptom of consumption. Richard Morton (1637-1698) had described several pathological appearances of phthisis in his treatise "Ptyhisilogica" meaningful clinical examination became possible with the description of the technique of percussion by Leopart Auenbrugger (1722-1809); Gaspard Bayle (1774-1816) accurately described many of the pathological changes of tuberculosis. The technique of physical examination of the lung was further refined by the invention of the stethoscope by Rene Theophile Hyacinthe Laennec (1781-1826). Fracastorius (1443-1553) is credited to have originated the germ theory and believed that TB was contagious. In 1720, the English physician Benjamin Martin conjectured "A new theory of consumption that tuberculosis could be caused by "certain species of Animacula of wonderfully minute living creatures. Jean Antoine Villemin (1827-1892) if a series of experiments provided conclusive evidence that tuberculosis was indeed a contagious disease. It was Robert Koch who finally demystified the secret of the cause of TB and after thousands of years, the organism finally revealed itself to humans with the advent of Wilhelm Conrad Roentgen (1845-1923), the technique of radiological imaging became available. Francis Williams of Boston, L. Bouchard and A. Beclere in France, John MacIntyre and David Lawson in Britain were pioneers in the use of radiology in the study of TB. (ibid Page, 7)

In the Yajurveda there are references to Soma performing "Yagna" seeking cure from TB. Since ancient time's amulets, invocations, charms, Royal touch, and prayers have been used to treat TB. Chemicals such as arsenic sulphur, Calcium, several vegetables, plants and animal

products, blood letting have been used over the centuries in the fond of hope of curing TB. During the 19th century, bed rest and change an environment emerged as important form of tuberculosis. (Sharma and Mohan 2001 P. 8)

Dr. Robert Koch announced his discovery of the TB bacillus on 24 March 1882 in Berlin. At that time, TB was raging through Europe and the Americas, killing one in seven people. Koch's discovery paved the way for the potential elimination of this fearsome disease. (SAARC Tuberculosis Centre: 2000)

A further significant advance came in 1895 when Wilhelm Konrad von Rontgen discovered the radiation (x-ray). (ibid)

Efforts by Albert Calmette and Camille Guerin resulted in the introduction of BCG vaccine (in 1921). (Sharma and Mohan 2001 Page 8)

By the early 20th century, treatment of TB patients usually involved bed rest. A dry climate and fresh air were considered important by many clinicians and many of the sanatoria were located in rural areas at higher elevations. Nutritional therapies, fresh air, sunlight, mental tranquility and optimism were also promoted. (SAARC TB Center: 2008, Page, 7). The modern era of TB control begin in 1944 with the demonstration of streptomycin. (Toman, 1997)

Pioneering work by Selman Walksman led to the introduction of Streptomycin. On November 20, 1944, the antibiotic was administered for the first time to a critically ill TB patient. Following streptomycin, P-aminosalicylic acid (1949), isoniazid (1952), pyrazinamide (1954), ethambutol (1962) and rifampicin (1963) were introduced as anti-TB agents. By 1952, isoniazid had become an important part of the initial treatment regimen. Short-course regimens with high cure rates become possible only after the introduction of rifampicin. . (SAARC TB Center: 2008, Page, 8)

And the most important breakthrough in the history of TB control came in 1977, after the impressive success of Short Course Chemotherapy (SCC) trial in Tanzania by Dr Karel Styblo, Dutch physician. His contribution to TB control was immense, and he went down in history as the father of modern TB control and one of the heroes of public health of the 20th century. The principle developed by him in Africa was proven by several other similar studies and later adopted and promoted by World Health Organization (WHO) as Directly Observed Treatment Short Course. (WHO/CDS/STB/2001.16)

2.2 Behavior Change communication

BCC is an essential component of wide-ranging TB control program that includes services in terms of : Social awareness for suspect identification, Detection of TB cases through sputum microscopy, Prescribing appropriate drugs for TB treatment, DOT for full course of treatment, Follow-up sputum test, Defaulter tracing, Side-effect management of anti-TB drugs etc.

BCC initiatives are vital to identify suspect from community for diagnosis of TB cases and ensure completion of treatment. If BCC components are weak, undiagnosed and suspected TB cases will remain unidentified within the community and continue to spread disease to others. On the other hand, after diagnosis, patients are returned back to community, especially at rural setting where patient can not visit DOT centers due to multiple socio-economic reasons. Furthermore, after diagnosis and starting of treatment, discontinuation of treatment and failure for follow up sputum test also happen within the community. (Khandaker: 2005, p 12)

Control of any disease requires active participation of end users, and TB is no exception. Increased awareness ensures optimal utilization of health services by the target group. Taking the case of TB, it is considered as a social stigma, incurable, some people don't know that its treatment is free. These are some of the reasons, which relate its spread and need concerted efforts at all level of community. TB being a communicable disease spreads mainly due to delay in seeking treatment and partly also due to not taking precautions while coughing, sneezing etc. which produce contagious air-droplets. Though health providers can provide all necessary treatment and support but it is important that the community should also contribute in controlling a disease. The TB patient should not only try to complete the treatment but should also take precautions to prevent its spread till they become non-infectious. This is though communicated to the patient time and again but still needs to be reminded again and again. Spread of proper knowledge can bring attitudinal changes. Keeping in with the community concerns, sensitivities and attitudes, various platforms can be used to get feedback form end-users not about the services but also about their other problems. (Gupta 2005 p. 27)

Despite the efforts of the past, necessary health services neither were all available to the needy people nor were available efforts well utilized. Therefore, the primary health care is accepted as an essential service and it should not be beneficial without providing effective health education for intensifying desirable behavioral change. (Bhattarai: 1994 p.8)

Health education is not a service strategy, and as a result is often poorly understood, inadequately planned and inappropriately implemented. Appropriate and effective health education is necessary to improve the effectiveness of the other strategies employed in TB Control. (Pool: 1994 p.19)

Health education to patients is not instructions nor teaching but motivation. It requires understanding of the patient' problems, fears, and wants. Unmotivated attitude of staff causes "patients un-cooperativeness". Patients and people learn through expressing what they want to know and what problems they have. Participation makes people happy, confident, feel valuable, and try changing themselves. (Ishikawa 1994 p.22)

As TB often starts gradually, and the poor frequently suffer from intercurrent diseases, symptoms of TB may be easily neglected. Frequently, important activities required for survival (such as the pressing work required bringing in a harvest) are given higher priority than seeking health care. This, coupled with a lack of knowledge about TB, may lead patients to dismiss symptoms as unimportant or to attribute them to other conditions such as a chronic cough or prolonged influenza. Illiteracy and low levels of education among the poor contribute further to lack of awareness of the importance of early detection and treatment of TB.

Despite the fact that TB treatment is widely available and often provided free of charge, the poor may not be aware of this. In addition, knowledge and attitudes may vary among deprived communities in different parts of the country. The poor in urban slum areas and in remote rural areas may have different understandings of TB as a disease. In the case of patients released from the penitentiary system, where access to treatment may be available, many may not know where and how to follow their treatment after release from prison. This situation may be aggravated by the fact that ex-prisoners are often unemployed and left without psychosocial support. (WHO/HTM/TB/2005.352, p.26)

The Stop TB Strategy urges enhancement of ACSM at country level to improve case detection and treatment adherence, to combat stigma and discrimination, to empower people affected by TB, to mobilize political commitment and resources for TB control, and to institute social change and poverty reduction required for long-term control and elimination of TB (WHO: 2008 p.179)

2.3 Health

The concept of health evolved in the beginning of human civilization. Many people used to think that health means free from physical illness. Later on the concept of health as changed that health is not only the absence of diseases or infirmity but also a state of complete physical, mental, emotional, spiritual and cultural well-being.

(Pathak and Giri)

a. Dimensions of health:

There are various dimensions of health. The dimensions of health are classified as Physical dimension, mental dimension, Emotional dimension, Social dimension, Spiritual dimension, Emotional dimension, Vocational dimension etc. The other dimensions are Philosophical dimension, Cultural dimension, Socioeconomic dimension, environmental dimension, educational dimension, nutritional dimension, curative dimension, preventive dimension etc. (Park: 2002, p.12)

b. Disease:

Webster defines disease as “a condition in which body health is impaired, a departure from a state of health, an alteration of the human body interrupting the performance of vital functions.”

Susser has suggested the following usage:

Disease is physiological/psychological dysfunction; Illness is a subjective state of the person who feels aware of not being well. Sickness is a state of social dysfunction, i.e., a role that the individual assumes when ill. (Park: 2002, p.27)

c. Factors affecting Health and Disease:

- a) Biological- Heredity, Immunity, Metabolism
- b) Physical and Environmental- climate, altitude, heat, natural calamities, population, population density, sanitation, drinking water, pollution, food storage, favorable condition for the breeding of insects, availability of basic health services, safety from accidents, provision of good housing etc.
- c) Socio-economic and cultural factors- family size, family income, health education in school, tradition and beliefs of community regarding health, superstition, religions, health behavior, nutritional food habit, way of living, hygiene etc.

2.4 Cultural Factors in Health and Disease

All people, whether rural or urban, have their own beliefs and practices concerning health and disease. It is now widely recognized that cultural factors are deeply involved in all the affairs of man. Not all customs and beliefs are bad. Some are based on centuries of trial and error and have positive value, while others may be useless or positively harmful. Where a change of behavior was involved, the resistance of people was maximum in accepting new programmes. Information about these factors, i.e. customs, cultural mores, habits, beliefs, and superstitions is still woefully lacking. Cultural factors relating to health and disease are:

1. Concept of etiology and Cure:

Broadly, the causes of disease, as understood by the majority of rural people, fall into two groups

(a) supernatural and (b) physical

(a)Supernatural Causes:

People believe that diseases (e.g. smallpox and chickenpox e.t.c.) are due to the wrath of some god or goddess, administration of drugs is considered harmful. Pujas are made to appease the gods. (Wrath of gods and goddess)

Breach of taboos is believed by some people to be responsible for certain diseases (e.g. venereal diseases are believed due to illicit sexual intercourse with women of low caste. (Breach of taboo)

Diseases like leprosy and tuberculosis are believed by some due to past sins. (Past sins)

Some diseases especially of children's are considered to be most susceptible to the effect of evil eyes. In order to ward off the effects of evil eye, charms and amulets are prescribed and incantations recited by the exorcist. (Evil eye)

Some diseases (such as hysteria, epilepsy etc.) are regarded as due to a spirit or ghost intrusion into the body. The service of an exorcist are sought to drive away the evil spirit or ghost. (Spirit or ghost intrusion)

(b)Physical Causes:

Physical causes are also considered to be responsible for certain diseases. Some of these are:

The cold weather is considered to the attack of common cold. (Weather)

Impure water is associated with diseases. (Water)

Skin diseases (e.g. scabies and boils etc.) are considered to be due to impure blood. (Impure blood)

2. Environmental sanitation

Disposal of human excreta: Most people in rural areas use open fields for defecation. People are ignorant that faeces is infectious and pollutes water and promotes fly breeding.

Disposal of wastes: The waste is invariably thrown in front of the houses.

Water supply: *Padhera* is common meeting place of men and women in villages. It is the place where people bathe and wash their clothes and animals also washed and given a drink. These cultural practices lead to the pollution of water.

Housing: Rural houses are usually *Kachcha* and damp, ill-lighted, and ill-ventilated.

3. Food habits:

Food habits have deep psychological roots and are associated with love, affection, warmth, self-image and social prestige. Vegetarianism is given a place of honor in Hindu society. Muslims abhor pork, and Hindus beef- these food habits have a religious sanction from early days. The concept of hot and cold food is widely prevalent. Fast is considered important adjunct to religion. Alcoholic drinks are tabooed by Muslims and high-caste Hindus. Hindu women often take food left over by their husbands. In some societies men eat first and women last and poorly. Some people do not eat unless they have taken a bath.

4. Mother and child health.

Mother and child health is surrounded by a wide range of customs and beliefs. The various customs in this field have been classified as good, bad, unimportant and uncertain. These vary from society to society.

Good:-Prolonged breast-feeding, oil bath, massage and exposure to early morning sun are good customs.

Bad: - Some foods (e.g. eggs, meat, fish, and leafy vegetables) are forbidden during pregnancy in some societies. Most deliveries are conducted at home.

Unimportant: - punching the ear and nose, application or paste of turmeric on the anterior fontanelle etc.

5. Personal hygiene:

Hindus have an immense sense of personal cleanliness, much of which is closely interwoven with ritual purification.

Oral hygiene: Many rural people do not brush their tooth. Some use twigs of neem tree as tooth brush, some use ashes and some Charcoal. Educated and those who have come in contact with urban life use toothbrushes.

Bathing: Bathing naked is a taboo. The women after menstruation must have a purifying bath.

Shaving: Barber does not sterilize the instruments because he doesn't have any idea of micro-organisms.

Smoking: It can spread tuberculosis. Many diseases are known to be associated with smoking-cancer, tuberculosis, chronic bronchitis, emphysema, coronary artery occlusion, angina pectoris etc.

Wearing shoes: The transmission of hook-worm disease is associated with bare feet.

6. Sex and Marriage:

Sexual customs vary among different social, religious, and ethnic groups. For certain religious groups' menstruation is a time of unholy when women are forbidden to pray or have intercourse.

There are differences in marriage-age by caste. (Source: Park J E: 2002,)

Some groups, particularly in remote or isolated poor populations, have cultural or traditional values about health that lead to seeking traditional, ancestral or spiritual healing first and seeking modern medicine only when these traditional interventions fail. These initial care-seeking steps can delay diagnosis and may cost patients time and material resources, especially if there is no system for referral to modern health services.

(WHO/HTM/TB/2005.352, p.28)

The responsibilities for diagnosis, prescription and treatment generally lie solely with the patients themselves, without the assistance of a health professional. Most importantly, the many culturally influenced factors, including community perceptions of the nature, causes and treatment of tuberculosis, may well conflict with the management message they have heard. It is fairly easy to see that these cultural influences will have a stronger impact on the action they take than distant. Sometimes conflicting messages come from outside of their home environment.

The field of cultural belief is wide range and many aspects have been studied by different anthropologists, social scientist and health professionals in Nepal. However, certain aspects of direct relevance to the task of understanding the cultural obstacle faced create problems for effective tuberculosis prevention and treatment messages. Firstly, it is important to know what people believe causes of tuberculosis because this may influence the action taken to treat it. The second area of importance relates to the current practices of regular treatment, nutrition, housing and hygiene during illness so that beneficial practices can be reinforced in health education messages. Thirdly, the vocabulary used to describe different symptoms of tuberculosis and its

severity is important because it should provide more understanding of how communities perceive and describe tuberculosis. For example, people call tuberculosis by different names in their different tribes such as Chhyayarog, Khabate, Sucaute etc. Finally, it is important to know whether communities have any concepts and hence vocabulary for complication or severity of tuberculosis, and if not, the symptoms of severity which they worry about, describe and make an effort to treat. These signs could be used as indications for prevention and treatment of tuberculosis.

Reported natural causes of tuberculosis have been diet, extremes of climate and heredity. Dietary causes are the most widely described and include 'Cold', 'Hot', not sleeping well, alcohol drinking, hard working, eating hot spicy food etc. The hot-cold (Garmi-Sardi) principle explains why some foods and fluids and extremes of climate (including exposure to cold and heat) are thought to cause tuberculosis and other illness. This principle is used by people who subscribe to the Ayurvedic system.

Treatments have included the administration or restriction of certain foods and fluids, and the use of herbs. The basis for these treatments appears to be the hot-cold principle. For example, tuberculosis thought to be caused by hot is treated by foods, fluids or herbal remedies which are thought to have cooling qualities. Restriction and administration of certain foods and fluids appears to be the most popular practice. The reasons of each food/fluid belief were not always reported, but when given were based upon the hot-cold principle. Faith healers give them herbal medicine for the natural causes.

There have been various observations that tuberculosis is ascribed a supernatural cause and treatment. The most common supernatural causes are evil spirits (Lago), for example, ghost (Bhoot, Pichas), a dead Boksi (Dain), spirit of funeral place (Masan) which may be sent by a witch (Boksi). 'Bewitched food' for example, was blamed for a chest pain, cough, fever, anorexia even haemoptysis. Other supernatural causes are Gods and Goddesses, Nag and other divine power. The cause of tuberculosis is also considered the result of sin.

The treatment of TB suspected to be caused by evil spirits is reported to follow the same pattern as the treatment of any other supernaturally caused illness and can involve a variety of approaches, including the exorcism (Jharfuk) that is blowing of mantras, the wearing of amulets and offering of food. It is also known that TB can be attributed to the influence of planets or Gods, the performance of prayer and sacrifice animal to the God.

It is interesting to note that faith-healers have been observed to treat TB cases not only by exorcising evil spirits but also by exorcising evil spirits but also by prescribing herbal remedies and specific dietary restrictions, thus treating natural and supernatural causes simultaneously.

2.5 The Stigma of Chronic Illness

In our society, as in most, any illness is negatively valued, and non-curable long-term illnesses are particularly problematic. Parsons (1972, 1975) suggested that illness is dysfunctional to the social system because it hinders individuals and weakens their effective performance of social roles. He said that society views illness as a form of deviance that needs to be controlled because it poses problems both for the individual and society. (<http://www.questia.com>)

Lessened and impaired social contact and a sense of social isolation are among the more detrimental consequences of chronic illness. Social isolation refers to a negative state of aloneness or diminished participation in social relationships. Impaired social interaction relates to the state in which participation in social exchanges occurs but is dysfunctional or ineffective because of discomfort in social situations, unsuccessful social behaviors, or dysfunctional communication patterns. Of course, the worse the illness (and/or its phases), then the more the probability exists that the ill persons will feel or become isolated. This isolation might happen in two ways: either the ill person, because of the symptoms, unexpected crises, difficult regimens, and loss of energy, withdraws from most social contact, or the ill person is avoided or even abandoned by friends and relatives. In either case, social relationships are disrupted or falter and break down (Strauss & Glaser 1975). All persons with long-term health problems are at high risk for social isolation. Social relationships are frequently disrupted and usually disintegrate under the stress of chronic illness and its management because chronic illnesses often involve disfigurement, (ibid)

While care work can immensely be rewarding, tapping as it does into the love and compassion within a family, stress, anger, and frustration can be equally real. Family members often stagger under the burden and may become sick themselves. Given the absence of good quality alternatives to family care giving, families may perceive their only choices as total immersion into the responsibilities of long-term care, or abandonment. Too often, that perception is

accurate. Yet the belief that complete self-denial is the fullest expression of obligation and live can become a deterrent to commitment. A wider range of options would allow family members to offer care at a lesser personal cost while meeting their own needs of other family members. (LaGioia, 2002, p.12)

2.6 Stigma associated with Tuberculosis

Stigma is defined as an undesirable attribute in a person that is viewed as setting that person apart from rest of the society, while shame is the consciousness or awareness of dishonor, disgrace, or condemnation. It is also an intense negative emotion that results from a person experiencing failure in relation to personal or other people's standards, feeling responsible for that failure and believing that the failure reflects on inadequate self and stress. Stigma is particularly complex as it operates at many different levels and has both social and psychological aspects. People who experience shame and stigma are less likely to adopt preventive strategies; seek early care for TB. (Thirubhalluvan E et al: 2008, STAC, p 15)

Stigma and discrimination with TB greatly affects the lives of both patients and former patients. Perceptions of risk from TB are inextricably tied up with understandings about the disease's transmission. Likewise, fearfulness is found to be associated with the disease curability. Even those who have awareness about the disease are not confident in its complete curability. People feel the behavior that is aimed at TB patients to be associated with the disease curability. (HERD, Annual Report, 2008)

Strong prejudices towards TB patients persist in the community including an openly stated fear and avoidance of these individuals. Taking the case of TB, it is considered as a social stigma, incurable, some people don't know that its treatment is free. In many developing countries that now provide free counseling, testing, and free drugs for people, the biggest barrier remains the social stigma of being TB patient.

In some settings TB is considered to be an inherited and/or incurable disease associated with unclean or undesirable habits or livelihoods. This kind of perception is often reinforced among the poor by impaired access to information and when the costs of reaching diagnosis and cure are out of reach. When such perceptions are widespread, the associated stigma of TB leads to fear of loss of employment and income, social exclusion and diminished marriage prospects. Women,

more often than men, face very different, and sometimes extreme, reactions to TB and stigma. This fear can promote denial, undermine self-esteem and, ultimately, prevent timely diagnosis and effective treatment of TB.

These perceptions can also result in resistance to helping people who are being treated for TB. In some places, incorrect notions persist about the dangers of TB patients as a source of disease, the difficulty of treatment, the suffering accompanying the disease, the need for removal of TB patients from normal social environments and the likelihood of dying from the disease even if treated. Often, marginalized groups and the poor have limited access to information sources, so the knowledge and messages promoting behavioural change that would help dispel stigma are not effectively disseminated. Where female literacy and education levels are low, the consequences of stigma may be particularly marked for women. Health providers can themselves reinforce stigma through their own practices and interactions with TB patients. It is common, for example, to see health professionals wearing surgical masks in the presence of TB patients. During health education sessions, stigma can be reinforced by emphasizing the importance of safe disposal of sputum at the expense of conveying the message that modern treatment rapidly renders patients non-infectious. (WHO/HTM/TB/2005.352, p.25)

Stigma and consequent discrimination have double impact on TB control. First, concerns about being identified as a person with TB make it more difficult for people with a cough of long duration who suspect they may have TB to seek care, because of the public nature of the TB diagnostic process. By delaying seeking care, these people may develop more serious symptoms, meaning they will be more difficult to treat; and as they remain infectious for longer, they are more likely to transmit the disease to others. Second, concerns about stigma and discrimination for TB make it more difficult for patients to continue with care, because their fears of being identified as being, or having been infected with TB hinder their access to services on a daily basis. Again, this also leads to serious symptoms and increased transmission.

TB is highly stigmatized regarding its transmissibility, treatment and curability. Factual information sharing and knowledge transfer can play a vital role to reduce the stigma. Many patients are worried whether or not they will be cured. Increased self confidence that one is cured and can live normal life even being infected with TB can help patients. Even when it is known to be curable, worry continues regarding the lengthy treatment; need to attend a health facility

regularly, finding accompanying person, additional expenses for travel and nutritious food deemed important for full recovery. (Nepal A.et all, 2008)

2.7 Medical Sociology

Medical sociology is the study of individual and group behaviors with respect to health and illness. In this regard, "medical" is a bit of a misnomer, because the focus is not on medical professionals or their behaviors, but on human behavioral responses to health and illness, which overlaps with the domain of nursing more than that of medicine. Medical sociology is concerned with individual and group responses directed toward assessing well-being, maintaining health, acting upon illness (whether real or perceived), interacting with health care systems, and maximizing health in the face of physiologic or functional derangement. Along with analyzing the ways in which our health is a result of the psychological conditions as a result of our environment.

(http://www.knowledgerush.com/kr/encyclopedia/medical_sociology/)

Medical sociology involves the [sociological](#) analysis of [medical organizations](#) and [institutions](#); the production of knowledges and selection of methods, the [actions](#) and interactions of healthcare professionals, and the social or cultural (rather than clinical or bodily) effects of medical practice. The field commonly interacts with the [sociology of knowledge](#), [science and technology studies](#), and [social epistemology](#). Medical sociologists are also interested in the qualitative experiences of patients, often working at the boundaries of [public health](#), [social work](#), [demography](#) and [gerontology](#) to explore phenomena at the intersection of the social and clinical sciences. [Health disparities](#) commonly relate to typical [categories](#) such as [class](#) and [race](#). Objective sociological research findings quickly become a [normative](#) and [political](#) issue.

(http://en.wikipedia.org/wiki/Medical_sociology)

Some have argued that medical sociology should be thought of as a loosely connected network of disparate subgroups rather than as a single discipline. Many medical sociologists tend to argue against certain axioms in the biomedical model of health and illness. They reject the reductionist approach of biomedicine, which claims that health and disease are natural phenomena that exist in the individual body rather than in the interaction of the individual and the social world; they reject the doctrine of specific etiology, the vision that disease can be induced by introducing a single specific factor into a healthy animal; and they reject biomedicine's claim to scientific

neutrality. Like sociology in general, subgroups within medical sociology vary according to dichotomies such as human agency versus social structure, conflict versus consensus, and idealism versus realism. Subgroups also vary according to subject matter, thus the sociology of medicine can be distinguished from the sociology of health and illness, the sociology of healers, and the sociology of the health care system. Medical sociologists also distinguish between the sociology of health, the study of health, illness, and health care to further sociological theory; and sociology in health, the use of sociological insights to complement biomedicine's objectives and priorities. There are four often interrelated areas of research in medical sociology: the social production of health and illness, the social construction of health and illness, postmodern perspectives on health and illness, and the study of the health care system and its constituent parts. (<http://www.answers.com/topic/medical-sociology>)

Earlier social theorists did write on subjects of concern to medicine, health, and illness, but medical sociology, as a sub-discipline of sociology, developed in the post-World War II period. Early debates in medical sociology were concerned with the role of sociology as it relates to medicine: Should the field be critical and analytical, concerning itself with the sociology of medicine (i.e., examining how medicine works); or should it be largely applied, focusing on sociology as a handmaiden for medicine? Like many such formative debates, there could be no conclusive answer. However, the field has developed into two groups: those (largely within academic settings) which focus on the sociology of medicine; and those (primarily in schools of public health and governmental institutions) which focus on the application of sociology to medicine. Later debates related to whether the focus should be on health sociology or medical sociology. This debate has moved the field to a broader, more ecological, view of medicine and health. (ibid)

2.8 Sociology in Public Health

Public health has been and remains a much applied field. It is also characterized by a population-based approach to health, and statistical methods are deemed the appropriate underlying method for the field. It is viewed as a science that seeks to intervene, control, and prevent large-scale processes that negatively affect the public's health. By these criteria, there is a strong logical fit of sociological principles and practices within public health. Nonetheless, sociology has not been the key social science discipline in public health. That position has gone to psychology, where the emphasis on individual behavior resonates more with a biomedical model. Despite this, many of the primary concerns of present-day public health, with large-scale variables such as social capital, social inequality, social status, and health care organization and financing, remain topics best suited to the sociological perspective and methodology. The emphasis in public health is thus shifting toward a sociological perspective.

Sociology in public health is reflected in the myriad of sociological concepts that pervades the practice of public health. More than any other social science, sociology has the discussion of socioeconomic status at its very core. Social-class variation within society is the key explanatory variable in sociology—for everything from variation in social structure to differential life experiences of health and illness. Indeed, there appears to be overwhelming evidence that Western industrialized societies that have little variation in social class experience have far better health outcomes than societies characterized by wide social-class dispersion. In short, inequalities in health are directly related to social and economic inequalities. Much of later-twentieth-century public health is devoted to the reduction of these inequalities. (<http://www.answers.com/topic/sociology>)

Within public health, surveillance is seen as a key approach to describing the distribution and dynamics of disease. In sociological approaches to public health, the role of social and behavioral factors in health and illness is central. Survey methodology has occupied a central place in sociological research since the middle of the twentieth century. The concern has been with the collection, management, analysis, interpretation, and use of large quantities of data obtained by direct interview with respondents. Social surveys are characterized by large random samples, complicated questionnaires, and the use of multivariate statistics for analysis. By their very nature, most sociological variables are complex to measure and to analyze. For example, the assessment of socioeconomic status of an individual requires the accurate measurement of

several variables that sit within a larger social context. Socioeconomic status (SES) is regarded as a product of several components, including income, residence, education, and occupation. Determining the relative weight of each of these components is a major analytical problem. Thus, when considering the role of socioeconomic status on health care outcomes, there is no easy answer to what mechanism actually works to determine the observed relationship between SES and health. The chief role of sociology in public health remains its evaluation of those macro components of society that affect public health at the population level. Such evaluations provide an understanding of why inequalities in health exist, and they help elaborate upon the mechanisms and processes that sustain these inequalities. This relates to the long-standing theoretical concern with social structure among sociologists. Further, sociology reveals the mechanisms for long-term changes that may lead to a reduction in health inequalities. The product of sociological thinking in public health is neither immediate nor easily understood by those who seek quick and easy solutions to the suffering of humanity. Nonetheless, the long-term role of sociology in public health is to change and improve the public health. (ibid)

2.9 Social Medicine

Social medicine is the study of man as the social being in his total environment. Its focus is on the health of society as a whole. Social medicine stresses the importance of social factors in the etiology of a disease. It emphasizes the strong relationship between medicine and social sciences. The concept of social medicine plays a major role in developing epidemiological methods and their application to the investigation of a disease. It is concerned with all the factors affecting the distribution of health and ill health in population including the use of health services. (Pathak and Giri P.10)

Developments in the field of social sciences rediscovered that man is not only a biological animal, but also a social being, and the disease has social causes, social consequences and social therapy. Its focus is on the health of all the community as a whole. Professor Crew had ably stated that social medicine stands on two-pillars- medicine and sociology. Others stated that maiden sociology married public health and became social medicine. (Park, 2002, p.7)

Sociology in medicine, it is argued, works within the constraints and parameters of medicine, accepting its objectives and priorities. Sociology of medicine adopts a more detached, critical approach, in which the sociological enterprise has priority over the medical. According to this

argument, the sociology of medicine is consequently a legitimate field of sociology, whereas sociology in medicine is not. However in both cases the field is still defined in relation to medicine. Other writers prefer a broader designation of the territory, such as the sociology of healing or of healers, or the sociology of health care systems, in order to make it clear that doctors are not the only group involved in healing or the only components of the health care system. There are a range of health carers, such as nurses and physiotherapists, as well as informal carers, whose work needs to be examined and should not be subsumed under the umbrella of medicine. A further problem with the delineation of the field concerns the relation of the sociology of medicine to the sociology of health and illness. Many would argue that the sociology of medicine necessarily embraces the sociological study of health and illness, since these are the core of medicine concern; others would argue that the focus should be rather narrower and concentrate on medicine as a profession, and that the sociology of health and illness should be treated as a separate field of study. (Marshall, 2004)

2.10 TB and Poverty

Tuberculosis (TB) is the archetypal disease of poverty. Of the 22 countries that have 80% of the world's TB burden, 17 have an annual gross national product per head of less than US\$760, the criterion used by the World Bank for classification as a low-income country. Within these countries, the poorest have least access to treatment.

Even in those countries with strong TB control programmes that offer free diagnosis and treatment, the poor can face catastrophic health expenditure because of high costs of care before diagnosis (e.g., repeated buying of cough linctus, time lost from work) and high indirect costs during treatment (such as travel or childcare costs).(www.thelancet.com)

Poverty is the greatest impediment to human and socioeconomic development. The United Nations and its specialized agencies are focusing on poverty reduction as a leading priority. In the health sector, poverty represents a principal barrier to health and health care. (WHO/HTM/TB/2005.352, p.10)

Throughout the world, poor people and those from disadvantaged social groups suffer more illness and die sooner than the more privileged. Poor and socially excluded people face greater exposure to many health threats, and when they fall sick they are much less likely to receive adequate care. Social factors including the effects of poverty account for the bulk of the global

burden of disease and death and for the largest share of health inequalities between and within countries. In high-income countries, the average estimated incidence of tuberculosis (TB) is 10/100 000; in low-income countries it is 20 times higher. (ibid, p.4)

Economically poor and vulnerable groups are at greater risk of infection with *Mycobacterium tuberculosis* compared with the general population because of overcrowded and substandard living or working conditions, poor nutrition, intercurrent disease (such as HIV/AIDS), and migration from (or to) higher-risk communities or nations. In addition, for isolated ethnic communities (e.g. indigenous groups in Latin America and North America), the risks may be particularly high given relatively recent initial population exposure to TB bacteria and result in high rates of initial infection and development of disease. (ibid, p16)

All communities are vulnerable to tuberculosis. Although this infectious disease affects all sections of society, most frequently, it affects the poorest and the most vulnerable.

Poverty has always been and will continue to be a major obstacle to health development. Poverty brings with it severe health consequences, trapping the poor into a vicious cycle of sickness and penury. High costs of health services make poor people poorer. There is a strong link between poverty and ill health, each potentiating the effect of the other. (WHO New Delhi: World TB Day 2002)

Increased probability of becoming infected with TB and of developing active TB are both associated with malnutrition, crowding, poor air circulation, and poor sanitation, all factors associated with poverty. In developed countries, there was a significant decline in tuberculosis between the mid 19th and mid 20th centuries, before the advent of drug treatment. This was largely brought about by factors that reduced transmission: improved working conditions and less overcrowding. Because effective drug treatment for TB was introduced in developed countries at a time when the incidence of TB was already rapidly declining, this may have led to an over appreciation of the role of chemotherapy in the decline and underestimation of the impact of changing socioeconomic conditions. In the developed world as well, people living in poverty experience conditions that are more conducive to TB, have little access to health care, which delays diagnosis, and if they get treatment it is more likely to be inconsistent or partial.

The socioeconomic burden of TB is particularly acute as it has its greatest impact on adults in their most economically active years. Three quarters of the new cases of TB each year are among men and women between the ages of 15 and 54. The results of the India studies

reflect averages throughout the developing world: three to four months of work time, the equivalent to 20-30 percent of annual household income, are typically lost to TB. The cost is higher if patients have delayed seeking treatment and remain ill longer. Incurred debt, combined with lost income, may trigger sale of assets such as land or livestock, which can have a permanent impact on a child's health. Children may be removed from school because there no money for uniforms or fees or because they must begin work to help support family. In the India study, one fifth of school children discontinued their studies. (WHO/CDS/STB/ 2001.9)

Poverty and the tubercle bacillus create another vicious circle. Poor people, plagued by hunger and crowded into close, non-hygienic quarters, are easy victims in an environment where TB flourishes. Once taken ill with TB, people's capacity to work is diminished, even as treatment expenses spiral, exacerbating poor people's poverty. The poor receive inadequate health care, which often inhibits the detection of TB in the first place. Treatment is often incomplete, to non-existent. The poor are less likely to seek and receive proper care when ill, exacerbating the impact of the disease. In addition, some studies suggest that the poor are two or three times more likely than other income groups to self-medicate. Self-medication and partial treatment encourage the emergence of drug-resistant TB, further increasing the impact of TB on the poor and the risks to others in society. (WHO, Stop TB Partnership, 2002 Page 30)

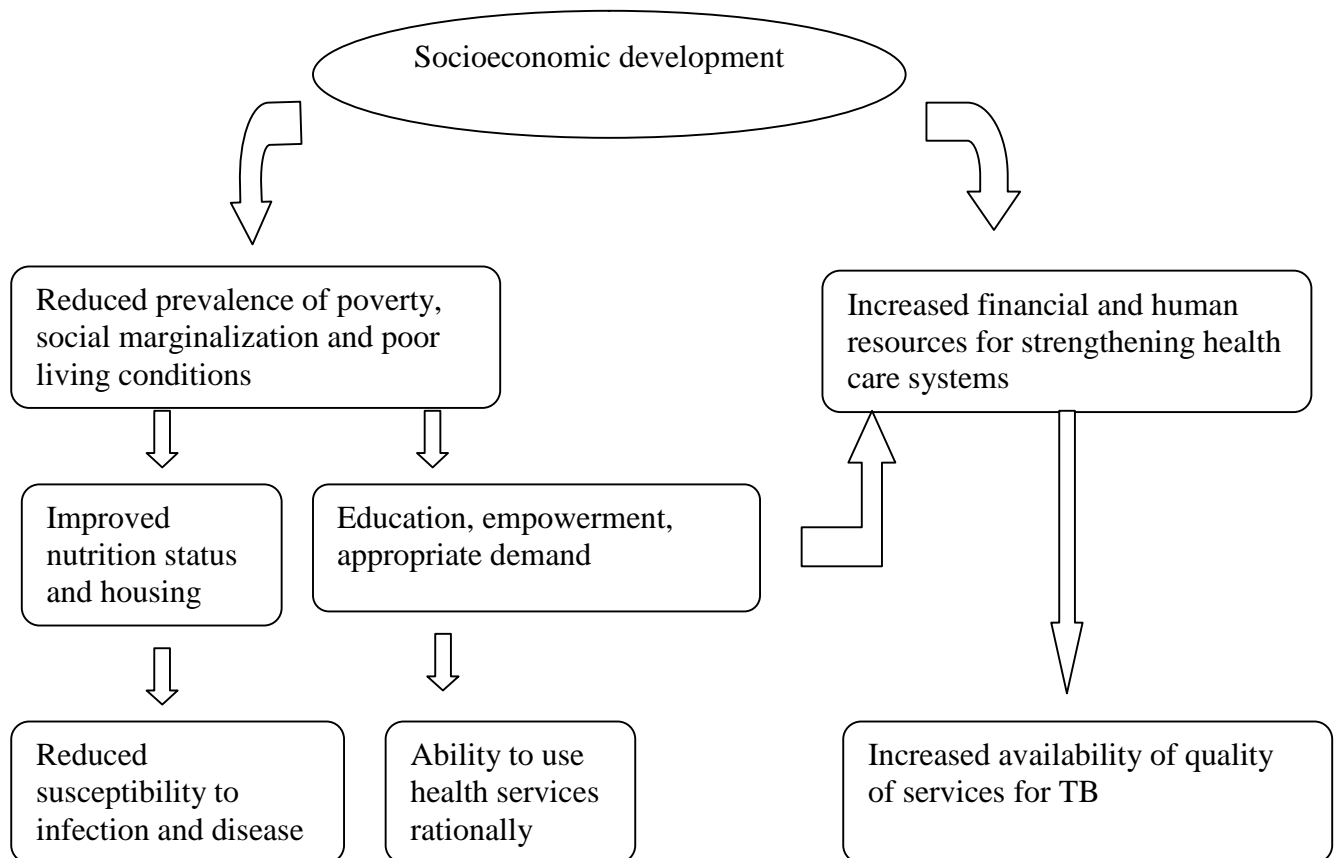
Poverty directly affects the communities TB burden-in general poorer communities tend to have the most TB. Globally, the gap between rich and poor is increasing. Billions of people live on less than 1 USD per day and have no access to safe water (Granich: 2000, P.5)

The poor do not generally seek a cure for the disease until it has reached such advanced stages that they are unable to work.

TB imposes a considerable economic toll on patients and their families. Because more than three-quarters of people with active TB are in the economically active age group (15 to 54), the economic and social costs to them and society are huge. They are income providers of the family. They are the parents of young children who need their economic and emotional support in order to thrive. They have elderly parents and relatives who depend on them. They are the citizens whose productivity and talents are essential to their countries' development. The result of TB is that access to opportunities and choices- a key principle of human development –is blocked. Ill health, malnutrition and high fertility are three main reasons why households become or remain poor. They cause poverty through diminishing productivity, reducing household

income and increasing health expenditure. A more complete view of poverty includes deprivation not only from money income, but also human development, financial and physical security, expanding opportunities and especially participation in key aspects of social life. Poor families have no buffer against loss of income-no savings and very limited access to borrowing. The way they cope with this economic adversity may provide short-term benefits – that is cash-but in long term makes them and their children destitute. The sale of assets such as land is a common response to large medical expenses. Income poverty leads to ill health and ill health contributes to income poverty. Poverty is also seen as a lack of basic human development indicated by poor health, malnutrition and educational development. Gender is in particular an important variable affecting both health and poverty.

Links between socio economic development, TB and TB Care



(Source: The Global Plan to Stop TB 2006 – 2015, World Health Organization)

2.11 TB and Gender

Sex is biologically determined differences between men and women for e.g. visible sexual organs that distinguish men from women, where as gender are the socially determined expectations for what it means to be male and female. It is caused by the psychological and social development of individuals within a society.

Gender refers to physiological differences between the sexes as well as variety of behaviors, expectations and roles attributed by cultures and societies to women and men. (Kumar: In STC Newsletter, Vol-VIII, No-2, July 1998)

A gender approach to health and illness examines the differences in disease manifestations in women and men, the perceptions as well as significance given to these manifestations by men and women. It is concerned with differences in the impact of disease on women and men within their social, economic and cultural context. Women's socio-economic status and cultural position in developing countries differs significantly from those of men and these differences influence both the health risk of women and constraints as well as opportunities experienced by women to solve their health problems. (ibid)

Worldwide, over a billion people live in absolute poverty and seventy percent of these are women. Health risks of poverty are far greater for female than for males, of which infectious diseases are a major part. Although, both males and females in poor countries suffer from poverty, deprivation and class inequality, women are at a far greater disadvantage than men due to cultural, social and structural factors.

Gender differences identified in disease epidemiology as a result of gender disparities /inequalities is mostly pronounced in infectious disease like TB and HIV/AIDS. The low female case detection rate is a question of true reflection or not, therefore it needs further study. Women's poor health seeking behavior could be assumed as a possible reason, with currently practiced passive case detection in TB control programme. (SAARC Tuberculosis centre, 2003 Page xi)

Women are marginalized population in society and are less likely to seek health care services for their ailments. Their economic dependence and poor family support compound the problem associated with their social status and pose a barrier in access to the health Services. (Sarin at all, 2004, p.10)

There is a real need to collect gender specific information on the prevalence and incidence of TB in Nepal in addition to data covering the outcome of treatment. A mechanism to improve women's access to diagnosis and treatment is needed urgently. (DOHS, Page 118)

The stigma associated with TB may be greater for women than men and the consequences can include ostracism, abandonment by the husband and /or his family, divorce or the husband's taking of a second wife, and consequent loss of social and economic support, lodging, access to one's children, etc. Marriage chances may be affected if women are known to have TB or even if they have a family member with TB have particular difficulty finding a marriage partner, and some families go to great lengths to deny or hide an unmarried daughter's illness.

The available literature on the subject, much of it dating from the pre-chemotherapy era, is "confusing and controversial." Yet up to 70 percent of deaths due to TB occur during child bearing years. The lack of data on diagnosis of TB in pregnant women, on the effects of TB on the health of the mother, fetus and infant, on the complications of treatment, on barriers to treatment, etc. means that there are no guidelines available for health professionals on the diagnosis and management of TB in pregnancy. Commonly held beliefs among women, such as that pregnancy increases intolerance of TB drugs or makes them ineffective have been linked to women interrupting their TB treatment when they became pregnant. (WHO/CDS/STB/ 2001.9)

Gender discrimination, even when not directly related to health care, for example denying girls and women access to education, information, and various forms of economic, social and political participation, can create increased health risk. Even if the best public health services are available, a woman has to be able to decide when and how she is going to access them, and that implies that she has to have the ability to control and make decisions about her life.

While in treatment, women may be dependant on men for successful compliance. In some cultures, women must be accompanied by a male relative when they go to health facility. The men consult with the provider outside the women's presence, and women may be dependent on the men for their supply of TB drugs. Cultural barriers such as these can deprive women of their

rights to information and participation, freedom of movement, privacy and individual autonomy, and impair their right to health. (ibid)

Women living in a male dominated society are facing many injustices with deleterious impact on their health. The physical inaccessibility and poor functioning of the public health services make access to health care problematic specifically for women. Due to inherent gender bias and the stigma of the disease, many women are only admitted to hospital when they are no longer able to perform domestic duties.

Poor women with TB tend to suffer from fear of being rejected by the family and the community. It has been shown that the stigma of TB is often more pronounced among women than men. While men usually worry more about loss of wages and capacity for work, women worry most about social rejection – from husbands, in-laws and the community in general. There are anecdotes of young married women who have been forced out of the family or divorced because of having TB. There are also examples of single women whose chances of getting married are reduced by having TB.

2.12 TB and Children

There was a myth previously, that tuberculosis is a disease of older age but in reality, TB is affecting large proportion of children in developing countries. Over 10% childhood hospital admissions and 10% hospital deaths are reported in children due to TB, moreover children having HIV are more vulnerable for getting TB. (Kumar P.: In Vol. XI, No. 1, January-March 2001, p 15)

Of the estimated 8.8 million new cases of TB that occurred globally in 2005, about 1 million (11%) were children aged under 15 years. children with TB differ from adults in their response to the disease in ways that may have important implications for the prevention, diagnosis and treatment of TB. Furthermore, children are at increased risk of progression of primary M. tuberculosis infection to disease, and are therefore a target group for preventive treatment. Children also develop primary TB more commonly than adults. Although bacteriological confirmation of TB should be sought whenever possible, this is often not possible in young children with pulmonary TB who usually cannot produce a sputum sample. (WHO: 2008 p.59)

Although tuberculosis can have profound health consequences for the affected child and his or her family, childhood tuberculosis has a limited influence on the immediate epidemiology of the

disease within a community because children are rarely a source of infection to contacts. However, the occurrence of tuberculosis in children is a marker for ongoing transmission of infection among all age groups in a society. Infected children also represent a large portion of the pool from which future tuberculosis case will arise.

Sputum often can not be obtained from children, and smear and culture results are usually negative when it can be obtained. As a result, the majority of cases of tuberculosis in children in most developing countries are not diagnosed because of the lack of appropriate radiographic and laboratory facilities. (STAKE: In LEE B. REICHMAN AND EARL S. HERSHFELD, 1993, p.329)

A quarter of million children still develop TB every year: particularly vulnerable to infection from household contacts, many of these children have been infected in their own homes, by parents or other relatives with active, infectious TB. Diagnosis of TB in children is notoriously difficult, as early symptoms and signs are easily missed. Most NTPs have little in the ways of services for children. Tuberculosis in the family also has serious impact on children. (WHO, Stop TB Partnership 2002, Page 31)

Children are exposed to TB primarily through contact with infectious adults with special risk in high TB-HIV settings and will continue to be at risk for TB as long as those adults remain untreated. Curing TB and preventing its spread in the wider community is thus one important strategy to reducing children's vulnerability to TB.

Children are also vulnerable to the direct and indirect impacts of other family members having TB. Marginal households that lose income or incur debt due to TB will experience even greater poverty as budgets are cut and assets sold. If their primary care giver is ill or is preoccupied with caring for other ill family members, the child's care and education may be neglected. If the principle family provider is ill and cannot work, children risk malnutrition, which increases susceptibility to TB and brings with it lifelong deleterious effects on both health and education. Children are especially vulnerable if their mother becomes sick and dies. There is a strong correlation between maternal survival and child survival to age 10. One study in Bangladesh revealed that whereas a father's death increased child mortality rates by 6 per 100000 for both boys and girls, a mother's death was associated with increases of 50 per 100000 in sons and 144 per 100000 in daughters.

Children in households with TB may also be taken out of school or sent to work. Both scenarios deprive them of their right to education and put them in situations that may expose them to more

prolonged contact with persons with active TB. Even if not removed from school, children from poor or marginalized communities where poor nutrition and ill health prevail have a below average school enrolment and attendance rate and, as a result, lower than average educational attainment. Lack of education correlated negatively with access to health services, and the neglect of the right to education on children's current and future health can be profound. (WHO/CDS/STB/ 2001.9)

2.13 TB and Migrants

Migration is social phenomenon caused by constellation of factors, including poverty, conflict and war, policies of structural adjustment and globalization. It predominantly affects developing countries where two-thirds of migration flows occur.

Health risks are increased because of migrants' vulnerability due to lack of full enjoyment of human rights, including access to housing, education and food because, at their destination, however affluent it may be in general, many migrants are likely to move into social and economic conditions characterized by overcrowded, substandard housing, poor sanitation, and lack of access to medical services. Access to TB treatment is particularly difficult for seasonal migrant workers. The transient nature of their work and the long duration of TB treatment make it difficult for seasonal migrant workers to balance their economic needs with their health needs. (WHO/CDS/STB/ 2001.9)

Compared to locals, migrant TB patients have faced more difficulties, during the diagnosis and treatment of disease. Problems are mainly rooted in financial issues in addition to such issues as distantly located DOTS centers, difficulty in strictly complying with DOTS rules, mostly due to working as daily laborers, need to repeatedly visit various facilities in order to get a diagnosis caused by lack of timely referral, which has significant economic, psychological, health and time implications, including delayed diagnosis. Likewise, health workers face difficulties in making migrant patients follow the DOTS rules: if they become stricter, there is a chance of patients defaulting on their treatment or transferring to other centers due to their own socio-economic problems.

(HERD, Annual Report, 2008)

Urban-rural migration, migration from conflict zones, and cross-border migration between Nepal and neighboring countries present challenge for both timely treatment initiation and treatment completion. (NTP In-depth review, 2007 page 41)

2.14 TB and Substance abuse

Substance abuse is a significant risk factor for acquiring TB infection and progressing to active TB. Abuse of drugs and alcohol are often cofactors alongside poverty, unemployment, homelessness, and a lack of access to social services. Injecting drug use is also a primary risk factor for HIV transmission, and HIV increases the risk of getting sick with TB. In addition to the links between drug abuse and other factors that increase vulnerability to TB such as poverty, poor nutrition, homelessness, and infection with HIV, drug use sites such as shooting galleries and crack houses can foster the spread of TB. Because drug using populations are both marginalized and criminalized, their trust and cooperation may be particularly difficult to gain. Innovative and expanded TB outreach and services, especially those that respect individual rights and dignity, are necessary to reach these populations. Another instance of substance use that contributes to increased vulnerability to TB is tobacco use. Smoking is associated with almost every population worldwide and is rapidly expanding. Tobacco consumption is steadily increasing in low-economic countries, fueled by population growth, the self-perpetuating nature of smoking prevalence, and lowering of social taboos against women smoking. It is also fueled by a lack of awareness among the general population of the health risks of smoking and intensive marketing campaigns by the tobacco industry directed at women and young people. Populations exposed to tobacco industry advertising have a right to information on the health risks of smoking and to public health messages countering denials by the tobacco industry of those health risks. Where vulnerability to TB is already high due to a lack of basic human needs such as adequate nutrition, housing, and clean water, the expense and health risks associated with tobacco consumption can only further lower living standards, degrade health, and increase vulnerability to TB. (WHO/CDS/STB/ 2001.9)

The increased risk of TB disease among people who abuse alcohol has been shown in many studies. Analytical epidemiological studies that have controlled for important confounding factors have reported relative risk of TB disease ranging between 2 and 8 for people with very

high alcohol consumption or a diagnosis of alcohol abuse or alcohol dependence. This risk increase might be explained by specific social mixing patterns and living conditions for people abusing alcohol leading to increased risk of infection as well as by compromised immunity linked to toxic effects of alcohol or to medical conditions caused by alcohol abuse. A definite causal link between alcohol abuse and TB disease has not yet been established. (WHO: 2008 p.87)

More than one billion people smoke with nearly 70% of them in low and middle-income countries. Smoking substantially increase the risk increases the risk of TB and death from TB. More than 20% of global TB incidence may be attributable to smoking. Controlling the tobacco epidemic will help control the TB epidemic. Smoking is a risk factor for TB, independent of alcohol use and other socioeconomic risk factors.

Smoking increases the risk of TB disease by more than two and a half times WHO recommended policies to combat tobacco and TB is to control tobacco everywhere, but especially where people are at risk of infection, coordinate national TB and tobacco control programme, cross train TB and tobacco control health workers, register TB patients' tobacco use and offer them counseling and treatment, promote and enforce smoke free policies particularly where TB services are delivered and to implement smoking cessation procedures through Practical Approach to Lung Health (PAL). Government has failed to establish linkage between TB and tobacco control programmes. There is urgent and compelling need for Nepal to formulate policy regarding coordination between NTP and Tobacco Control Programme to reduce the menace of their interaction. There exists a considerable base that joining these programmes can be beneficial. (KISHAN :In Vol. XX NO. 1 Jan-Jun 2010, p.10)

Both active and passive smoking increase (i) susceptibility to TB infection, (ii) progression to active TB disease and (iii) the risk of adverse anti-TB treatment outcomes. Systematic reviews suggest that the risk of TB disease among smokers is increased two- to threefold compare with people who have never smoked. There is insufficient evidence to support an association of smoking and patient delay, default, slower smear conversion or risk of acquired drug resistance. Weighted smoking prevalence across countries with a high TB burden was about 18% in 2004–2005, with much higher prevalence among men than among women in most countries. The prevalence of smoking is increasing in developing countries.

Tobacco control and smoking cessation among people with TB can therefore play an important role in limiting the burden of TB. NTPs should support activities to control use of tobacco at

national and local levels. Smoking cessation could be a part of the package of services delivered under PAL. (WHO: 2008 p.85)

2.15 Multi-Drug Resistance Tuberculosis

If TB patient do not take medication at the prescribed time in adequate dosage or are unable to complete the full course of treatment, their tuberculosis may become resistant to those medications.

Over the past 15 years, however, incomplete TB treatments due to shortage of medicines and medical personnel, faulty prescriptions, inadequate treatment taken by the patient due to poverty, civil disruptions and socio-economic barriers for patients have led to a proliferation of strains of tuberculosis resistant to at least two of more TB medications. TB caused by these strains known as multi-drug resistant (MDR-TB). (Shrestha, L: STC Newsletter Vol. XVII. 2007, Page 14)

Consequently, the world is facing a much more serious situation as we approach the twenty first century in than in the mid 1950s. Due to demographic factors, socio-economic trends, neglected tuberculosis control programmes in many countries, and in addition, the HIV epidemic, there are many more smear positive pulmonary TB cases, often undiagnosed and / or untreated. When TB cases are treated, poor drug prescription and poor case management are creating more TB patients excreting resistant TB bacilli.

(Shrestha B. NTP Souvenir 2002)

This is a case of tuberculosis (usually pulmonary) excreting bacilli resistance to one or more anti-tuberculosis drug. MDR is currently the most severe form of bacterial resistance.

MDR TB Situation:

- MDR among new cases: 2.9%
- MDR among previously treated cases: 11.7%

(National Tuberculosis Center: National Drug Resistance Survey 2007)

Nepal was the first country in the SAARC region to introduce DOTS-Plus, integrating it with the NTP since 2005. It was started at 5 main centers and 16 sub-centers in September 2005. After

two consecutive reviews of the DOTS Plus programme by Green Light Committee NTP was approved to continue the DOTS -Plus Programme till 2011.

(NTC: Annual Report 2063/64, page16)

Four national surveys of anti-TB drug resistance have been undertaken in Nepal. The first, in 1996, showed a prevalence of 1.1% of multi-drug resistance in patients never previously treated for tuberculosis. This prevalence was 1.0% in 1999, 1.3% in 2001, and 2.6 % in 2006. (NTP In-depth Review, 2007 Page, 11)

The best prevention is to give each new case of sputum positive pulmonary tuberculosis an effective regimen of short course chemotherapy with four drugs given under direct Observation. Patients are overwhelmingly from socio-economic disadvantaged groups and have great difficulties paying for relocation to the areas where the DOTS PLUS treatment is provided and the daily transportation costs to and from clinics for DOT; this may result in patients defaulting from treatment once they feel better. (NTP, In-depth review, 2007 Page 47)

MDR-TB is a threat to global TB control. If MDR-TB is not properly addressed, TB cannot be controlled. The key actions for preventing and controlling drug-resistant TB include use of recommended treatment regimens, a reliable supply of quality-assured first and second-line anti-TB drugs, and adherence to treatment by patients and to its proper provision by health care providers. (WHO, 2006)

Insufficient socioeconomic support and lack of infection control are key challenges for MDRTB management in Nepal. Similarly, there are no extra remunerations and no provisions of health hazard allowance for HWs working for MDR TB programme which is seen as disincentive and discouragement. (NTC, ANNUAL REPORT 2065/66 p.11)

Good NTP can minimize MDR TB. The success and failure rate should be monitored on regular basis. The best prevention is to give each new case of tuberculosis an effective regimen of SCC. (Rijal, et al.: 2007 P. 14)

Multidrug-resistant (MDR) tuberculosis is a treatable, airborne infectious disease that killed an estimated 1.5 million people between 2000 and 2009 — an annual rate 10 times that of the H1N1 influenza virus. During this period, barely 0.5% of the estimated 5 million people who became ill with MDR tuberculosis received treatment with quality-assured second-line drugs. The rest continued to transmit resistant bacteria to others — in

their homes, communities, workplaces, and other places where people congregate. The same interventions as in DOTS are urgently needed to stem the global epidemic of MDR tuberculosis: rapid case detection, proper infection control, timely access to quality-assured second-line drugs and the building of capacity to deliver treatment effectively. Indeed, as with drug-susceptible tuberculosis, prompt and effective treatment is the best way to stop the spread of drug-resistant strains. (Keshavjee and Farmer: 2010)

2.16 TB and HIV

Tuberculosis is the most common opportunistic infection and one of the leading causes of death among individuals infected with the human immunodeficiency virus. Today, one-third of the 40 million people worldwide who are HIV positive are also infected with tuberculosis; and, in sub-Saharan Africa, up to 75 percent of individuals with TB are co-infected with HIV. Without proper treatment, approximately 90 percent of HIV positive patients die within months of contracting tuberculosis. (IUATLD: 2005, p. 19)

The Human Immunodeficiency Virus (HIV) pandemic is affecting the epidemiology of other diseases as well. One of the diseases affected by HIV is TB. HIV poses monumental challenge to control of TB. The HIV pandemic is posing a serious threat to the TB epidemic. TB is a leading killer of people living with HIV and AIDS. Co-infection is increasing the negative impact of both diseases. Addressing one should address the other.

About one-third of the 40 million PLHA worldwide are co-infected with TB. Worldwide, about 2 million people died of TB, including 195,000 HIV positives. Each disease accelerates the bad prognosis of the other disease, and TB considerably shortens the survival of PLHA. Moreover, in the absence of optimum treatment, approximately 90 percent of those PLHA die within months of contacting TB. HIV positives with latent TB are up to 50 times more likely to develop active TB than HIV negatives. (NCASC, NTC: 2009, p.8)

The co-infection of TB and HIV affects millions and threatens global public health. Since the mid 1980s, HIV has increased TB rates by as much as 500 percent in some countries of sub-Saharan Africa, and this information tells us a lot about the urgency to control the co-infection. The co-infection exerts a negative impact on TB and HIV AIDS control programme. Improved collaboration between TB and HIV AIDS program leads to more effective control of TB among

HIV infected people, which lead into significant public health gains. The absence of HIV testing services for TB patients might also contribute to missed opportunities for diagnosis of co-infection. Provider initiated testing and counselling (PITC) of TB patients is an effective strategy to address the co-infection. Provision of antiretroviral therapy (ART) to HIV AIDS cases with TB helps in preventing deaths and achieving mortality targets of both TB and HIV mentioned in Millenium Development Goals(MDG) (NTC Nepal: 2066, page 44)

HIV and TB have been described as the “Diabolical Duet”. The reason is that the two go together. When someone is infected with HIV, the Virus weakness their immune system usually helps to fight off diseases, so they are now more susceptible to infections. (Jha at all: p 22)

The risk factors for explosive growth of HIV infection exist within countries e.g. large commercial sex trade and low condom use; injection drug use; lack of HIV awareness; lack of blood safety; high mobility; extensive poverty; high illiteracy; trafficking of women and young girls within the sex trade; and low and unequal status of women. The mobile migrant population in search of work, sexual pleasure, precious gems/jewelry and drugs; the truckers and salespeople who create an infectious highway as they move; the high risk groups such as MSM, IDUs, CSWs, multiple sex partners etc. who proliferate the transmission of disease; the ignorance as to the risk factors and spread of HIV/AIDS; the lack of awareness as to control measures; the cultural taboos that prohibit discussions; the discrimination and stigmatization; the high levels of illiteracy; the inequality of the sexes with women having little control of their bodies; the trafficking of women and young girls within the sex trade, and the lack of political involvement and commitment by government, presents special challenge of TB-HIV co-infection. Evidence is accumulating to show that the areas with highest rates of HIV are also reporting greatest increases in TB cases. HIV/AIDS thus has the potential of decimating all present and future gains from TB control programs. One cannot successfully prevent and control TB without prevention and control of HIV and there must be marriage of the two strategies. (SAARC Tuberculosis Center: Articles..., page 5)

Conditions that enhance vulnerability to TB-poverty, homelessness, substance abuse psychological stress, poor nutritional status, crowded living conditions also enhance vulnerability to HIV. Both epidemics register their highest rates of infection among populations that are typically disadvantaged or marginalized in their own societies.

In many societies, preserving confidentiality about one's HIV or TB status is difficult. Merely visiting a TB or HIV associated clinic can arouse community suspicion and begin a cycle of stigmatization. This can act as a deterrent to diagnosis. Individuals have a right to privacy that protects them against both mandatory testing and disclosure of their health status. They also have a right to education and information about TB, HIV, and the synergy between the two infections so that they can make informed choices about testing and treatment options. (WHO/CDS/STB/2001.9)

HIV infection is the most potential risk factor for converting latent TB into active TB, while TB bacteria accelerate the progression of HIV to AIDS. It is essential to establish the mechanism of collaborative service mechanism among TB HIV program to fight against TB as well HIV AIDS. So it is essential to establish the mechanism of collaboration between TB and HIV AIDS program to address the TB HIV co-infection problem in systematic manner. From the TB control program, objective of program collaboration is to reduce the burden of TB in PLHV, establishing and enhancing the program collaboration mechanism in between NTP and NACP through developing joint policy, strategy, planning and implementation for providing quality preventive and treatment, care and support services for people living or at risk of TB HIV. (NTC Nepal: 2066, page 7)

The HIV epidemic fuels the TB epidemic. HIV promotes the progression of recent and latent Mycobacterium Tuberculosis infection to active TB disease; it also increases the rate of recurrent TB. The HIV epidemic has caused a substantial increase in the percentage of cases of smear negative pulmonary and extra pulmonary TB disease. HIV-positive patients with smear negative pulmonary TB has worse treatment outcomes and higher mortality than smear-positive pulmonary TB. In the long term, only effective control of the HIV epidemic will reverse the associated increase in TB incidence. In the meantime, interventions to reduce HIV-related TB morbidity and mortality need to be implemented. (WHO Geneva, 2002)

2.17 TB and Private Practitioners

In most countries National TB programs have ignored the private sector and opted to deliver services through government channels. In Nepal, a pilot project for service linkage, to introduce DOTS using both public and private services was initiated in Lalitpur municipality in May 1998.

The role of private sector in delivering health services in developing countries is a subject of current interest for governments and donors. In many developing countries, public resources are diminishing and widening role for the private sector is viewed as a way of increasing the overall resource available for health. Patients may have greater confidence in private providers. Easier access and shorter waiting periods, more flexible opening hours and better confidentiality can contribute to greater consumer satisfaction and may be difficult to achieve in the public sector. (Swan: In Dr. Shanta Bahadur Pande, 2002)

There are few data on the size and composition of the private sector in developing countries and little information on the demand for and utilization of services. Defining and appropriate role of the private sector in the provision of tuberculosis services is a vexed issue, in part because TB treatment is both a private and public good. Ineffective TB services, from a population perspective, can be considered worse than no services at all. Though inadequate can still reduce mortality and prolong the life of individual patients, partial treatment prolongs infectiousness leading to more transmission and more cases in future. The problem of poor TB control at a societal level is complicated by the fact that poor treatment leads to the development of antibiotic resistance. The treatment of MDR TB is much more expensive than disease that responds to the standard regimen. Moreover, as the proportion of new cases that are resistance increases, standard treatment protocols become less effective in curing the majority of patients and confidence in public programmes may be undermined. (Pande , 2002,)

Many PPs have their own labs or links with private labs performing sputum smear microscopy, which is not covered under the laboratory quality control processed in the NTP.

Private providers normally retain patients who can afford private sector treatment. There are some barriers for referrals from private sectors, as well as from hospital doctors. There is no clear mechanisms allowing PPs to treat with program drugs and no feedback from the program after suspects and cases have been referred. (NTP In-depth Review: 2007)

2.18 Public-Private Mix

PPM is a mechanism to engage all health service providers of different sectors and stakeholders within one umbrella in order to make sure that they carry out some procedures and standards in TB control activities guided by NTP. (NTC, 2066, Page 50)

The delivery of care for TB patients through public sector health services is generally the main focus of NTP activities. However, many patients with symptoms of TB, including very poor patients, seek and receive care from a wide variety of private and public health-care providers outside the network of NTP services. The involvement of these non- NTP providers varies greatly from country to country. The systematic involvement of all relevant health-care providers in delivering effective services for diagnosis of TB and treatment of TB patients to all segments of the population is an essential component of the Stop TB Strategy. Table 22.1 lists the major provider groups that may manage TB patients outside the NTP. (WHO: 2008 p.152)

A major strategy in expanding access to DOTS services today is the engagement of private providers in national TB control programmes. There is strong evidence from all regions to show that poor people consult private providers, as well as district and tertiary hospitals, for diagnosis and care for a range of reasons. (WHO/HTM/TB/2005.352, p.62)

The private sector manages an estimated 50% of patients with TB, but these patients are unregistered, do not receive standardized treatment regimens, receive little or no monitoring of treatment progress and their outcomes are unknown. This leads to delayed cure, increased numbers of chronic transmitters and drug resistance, and hence an increasing incidence of TB. (NTC, Thimi, 2009 page 1)

Nepal has a large private medical sector that provides services to all segments of population, both rich and poor. Private providers also include practitioners who may not be formally qualified, such as traditional healers in rural areas and informally-trained practitioners Civic groups working with disadvantaged communities and non-governmental organizations (NGOs) provide TB care in many countries. Urban areas in most countries have a mix of public sector providers, which include medical college hospitals, specialty centers such as chest clinics, general public hospitals and special group hospitals. In spite of being a part of the public sector, these providers do not always coordinate with NTP policy. (NTC, 2066, Page 51)

There are many private institutions/ individuals providing health care. Private physicians, paramedics, other private practitioners and traditional healers play significant roles in the initial stages of health seeking by TB symptomatic. It is difficult for private practitioners to provide proper management of TB patient for the full course of treatment. Improper management of infectious TB cases is very dangerous for families and communities. TO prevent such serious situations and to support the programme, private practitioners can play important role in the

Tuberculosis Control Programme by referring TB suspects to appropriate DOTS centre for diagnosis and treatment or diagnosing and then referring TB cases to an appropriate DOTS centre for treatment. (NTC, 2009, p 35)

The first step in engaging all health-care providers is to map all relevant public and private providers in a given setting. Next, suitable roles for them in implementation of the stop TB strategy should be identified. It is essential for the NTP to develop and maintain strong stewardship capacity in order to guide and oversee collaboration between private and public providers. (WHO, 2006)

With realization of growing role of the private sector in TB control and after a successful implementation of DOTS in public sector, the Nepal NTP started involving private health care providers in TB control.

There are opportunities to increase and speed up case finding, improve treatment outcomes and share the service delivery load through enhanced patient acceptance in a coordinated Public - Private Partnership (PPP) for TB control. However, a strong NTP is essential to establish effective PPP in TB Control. (Newell J N et al, 2004, p.47)

2.19 Community Participation

Health is not merely a concern of state and international community; relatively individual and local communities are equally responsible for maintaining healthy practices in their lives. Communities should be aware of their own problems, resources and its utilization for the betterment of the society. The meaningful involvement of community in the planning, implementation, and maintenance of health services contributes much to the society in terms of sustainability of health care programs. (Sapkota: 2004, p.53)

Community Participation in TB care implies establishing a working partnership between the health sector and the community- the local population, especially the poor, and TB patients, both current and cured. Ensuring that patients and communities alike are informed about TB, enhancing general awareness about the disease and sharing responsibility for TB care can lead effective patient empowerment and community participation, increasing the demand for health services and bringing care closer to the community. (WHO, Stop TB Partnership, 2006, page 15)

A basic principle of TB control is provision of care as close as possible to the patient's home and community based volunteers can play a major role in this regard. Community volunteers, local leaders, civil service organizations, colleagues in the workplace, religious leaders, shopkeepers, teachers and many others can be actively and usefully involved in helping cure TB. (NTC, Annual Report 2005/2006)

Community awareness and involvement in care and education is crucial to sustainable activities to eliminate disease and promote health. TB control has been hindered by a lack of community awareness concerning TB, by social barriers against access to care (for example, stigmas-particularly for women), and by traditional models of health care delivery based primarily on health service institutions. (WHO, 2002, p.47)

Effective partnerships between health services and the community may facilitate access by bringing services to people's homes, and reducing the cost of care-seeking for patients and health services as well as the cost of workload for staff. Carefully designed community and/or patient involvement initiatives also facilitate patient and community empowerment. Through the involvement of local communities, education on relevant health issues and stimulation of change in health-related behaviour, communities become increasingly knowledgeable and self-reliant.

The empowerment of patients and communities requires knowledge of individual rights and responsibilities, the ability to exercise them at social and political levels, access to information and the ability to utilize knowledge and skills as needed. The Patients' charter for tuberculosis care (the charter) sets out the rights and responsibilities of patients. The rights concern care, dignity, information, choice, confidence, justice, organization and security. The responsibilities cover sharing information, adherence to treatment, contributing to community health and showing solidarity.

Effective community and patient involvement yields positive results, such as improved case-finding and treatment outcomes, raised awareness concerning the nature of the disease and the availability of effective treatment free of charge, or general health promotion. To be successful, community and patient involvement initiatives should be designed and implemented with community members involved as equal partners.

2.20 Global TB Burden

Tuberculosis has a devastating impact on the economic well-being of families and entire communities. TB causes sufferers to lose up-to 9 months of work time. TB deaths often mean the loss of the primary income-earners for entire households. (WHO/CDS/STB/2001.16)

According to a 2002 estimate by the WHO, nearly 1 billion people will contract TB between then and 2020. About 150 million will get sick and 36 million will die. That's the population of Belgium, The Netherlands, Switzerland and Luxemburg combined. (<http://www.viipphoto.com/showstory.php?nID=491>)

Tuberculosis is a curable disease, yet nearly 5,000 people still die from it every day-close to two million each year. Ninety eight percent of these deaths are in low-income countries. (IUATLD, 2005)

In the future it is expected that TB will remain one of the 10 leading causes of mortality in the world. Although the rate of TB will decrease in many countries, the total number of TB patients will increase to ten million new cases in 2020.

The main reasons for the increasing global TB burden are the following:

- ♦ Poverty in various populations, not only in developing countries but also in inner city populations in developed countries.
- ♦ Changing demographics, with increasing world population and changing age structure.
- ♦ Insufficient and inadequate health coverage of the population, especially in poor countries, and of the vulnerable groups of the population in all countries.
- ♦ Neglect and under funding of TB Programmes, with inadequate case detection, inadequate case management and poor cure rates.
- ♦ In several countries, mainly in Africa and in Asia, the impact of HIV epidemics.

(Chaulet, Campbell, and Boelen 1998, p. 10)

Tuberculosis is a major cause of illness and death worldwide, especially in Asia and Africa. According to the WHO, one third of the world's population has been exposed to the tuberculosis pathogen. By the end of 2007, 202 of 212 countries and territories had reported case notifications for 2006 and /or treatment outcomes for patients registered in 2005. These countries include 99.6 percent of the world's population. Surveillance and survey data has estimated that 9.2 million new cases of TB occurred in 2006 (139 per 100000), including 4.1 million (62 per 100000) new smear positive cases. These numbers also includes TB in HIV positives. In terms of incidence, among the top five countries, India ranks first followed by China, Indonesia, South Africa and

Nigeria. In 2006, Asia (South East Asia and Western Pacific Regions) accounted for 55 percent of global cases Africa 31 percent and other regions accounted for remaining fraction of cases. (WHO, 2008)

Among the 9.2 million new cases of TB in 2006, it is estimated that around 709000 (7.7%) were HIV positives. The rise in HIV infections and the neglect of TB control programs have enabled resurgence of tuberculosis. The emergence of drug-resistant strains has also contributed this new epidemic. From 2000 to 2004 it is estimated that 20 percent of TB cases are resistant to standard treatments and 2 percent resistant to second-line drugs. (Bhatt et al, 2009 (STAC) p. 31)

2.21 TB control Programme in Nepal

It is said that Rana Prime Minister, Chandra Shamsher suffered from haemoptysis. Whether it was tuberculosis or Bronchiectasis in origin could be anybody's guess. Any way, he allocated twenty lac rupees for opening a Tuberculosis Sanatorium. (Das, 2000, P.20)

Rana Prime Minister Chandra Shamsher established a Sanatorium with 50 beds at Tokha, Kathmandu in 1934. With the hard efforts of Dr. YR Joshi the central chest clinic started its functioning in 1951 at Mahabauddha, Kathmandu. Simultaneously from the community side, Nepal Anti TB Association was established in 1953 as a NGO providing chest clinic services. In the same year a Shining Hospital in Pokhara started treatment of TB patients by International Nepal Fellowship. In 1960, 7th day Adventist Sheer Memorial Hospital at Banepa started anti TB activities. In 1965, a TB control project established, HMG/WHO and UNICEF jointly started BCG vaccination in Kathmandu valley under the TB control pilot project in 1966. Britain Nepal Medical Trust (BNMT) commenced TB control activities in eastern region of Nepal in 1968. In 1969 The Shanta Bhawan opened the TB clinic at Patan. First the integration of health services was started in Bara and Kaski district under the name of integrated community Health Project in 1972. In Tanahun district, the Thomas Dooley Foundation started anti TB activities in 1973. In the same year INF started treatment of TB and leprosy patient at Ghorahi in Dang district of med-western region. In 1975 TB control Project expanded its activities to active case finding programme through sputum microscopy. The first national TB control seminar was held in Kathmandu in 1978, second in Biratnagar in 1980, and third in Pokhara in 1981. Based on the recommendations of the seminars, a TB coordinating committee was formulated to advise the ministry of health for the formulation of the National TB control Programme. In 1986 German

Nepal TB Project started OPD services in Kalimati under the NATA. The short course intermittent chemotherapy started along with the culture and sensitivity tests. In 1987 a record of discussion signed between the HMG and the government of Japan to establish in Kathmandu and regional TB center in Pokhara. After the establishment of NTC, both the chest clinic and TB Project merged into one organization under the name of NTC to strengthen the National TB control Programme. In 1994, TB control programme jointly evaluated by HMG and WHO. Based of the review recommendations DOTS was adopted as a policy in 1995 formulating the five year plan. First DOTS was introduced in April 1996. Gradually DOTS had been expanded to all over the country. (Bam: 2002)

Nepal has long and successful history of TB control. The Tokha sanatorium was established in 1937. Secondly the Central Chest Clinic (CCC) came into existence in 1951 with facilities of diagnosis and treatment services for the TB patients on domiciliary basis.

Nepal National Tuberculosis Programme (NTP) was launched in 1965 with tripartite agreement between Government of Nepal, World Health Organization and UNICEF. DOTS strategy was adopted as national policy for TB control in 1996. DOTS programme started initially in four districts of the country. By year 2001 DOTS based TB control services were provided in all over the country.

National TB control has effective coordination with public and private sectors, local government bodies, I/NGOs, social workers educational sectors and other various sectors of the society in order to expand DOTS and sustain the present achievement made by the programme. (NTC 2008, P.36)

Evolution of TB control in Nepal:

| Year | Major Events |
|-------------|---|
| 1934 | 50 bedded TB Sanatorium at Tokha in Kathmandu |
| 1951 | Chest Clinic at Bir Hospital, Kathmandu |
| 1953 | NATA at Kalimati, Kathmandu with establishing Kalimati chest Hospital at Kalimati |
| 1960 | 7th Day Adventist-Sheer Memorial Hospital, Banepa started anti-TB activities |
| 1961 | Central Chest Clinic at Mahabouddha, Kathmandu |
| 1965 | TB Control Project-started working for TB Control |
| 1966 | Direct BCG vaccination to school children in Kathmandu valley |

- 1968 BNMT commenced TB control activities in Eastern Region of Nepal
- 1969 TB Clinic at Shanta Bhawan-established
- 1972 Integrated Community Health Project started in Bara and Kaski districts
- 1973 Thomas Dooley Foundation started anti TB activities in Tanahu District and INF started treating both TB and Leprosy Patients in Dang District
- 1975 Active case finding program by sputum microscopy
- 1978 First National TB Control Seminar in Kathmandu
- 1979 Passive Case Finding Program
- 1980 Second National TB Control Seminar in Biratnagar
- 1981 TB co-ordinating committee to advise Ministry of Health and Task Force to formulate National TB Control Programme (NTP)
- 1982 INF TB Project in Pokhara and Ghorahi
- 1985 Discussion between HMG and INF to start TB Control Program in Mid-western Region
- 1986 German Nepal TB project started under central NATA, Kathmandu
- 1987 Record of discussion signed between HMG Nepal and Japanese Govt. to establish NTC in Kathmandu and RTC in Pokhara
- 1988 NTC and RTC started functioning from New Building
- 1992 Established SAARC Tuberculosis Centre in NTC
- 1993 WHO declared TB as a Global Emergency
- 1994 Review of NTP
- 1995 Policy of DOTS adopted
- 1996 4 DOTS demonstration sites established in April
- 1998 Public Private Mix Linkage started in Lalitpur district.
- 1999 DOTS in Jail
- 2000 DOTS committee strengthen, Community mobilization and Participation
- 2001 DOTS Expanded to all district of the country
- 2002 Kathmandu urban DOTS strengthen
- 2003 Partnership with Pharmacists strengthen
- 2004 Initiation of DOTS Plus Project
- 2005 DOTS Plus Program started
- 2006 DOTS Plus program expanded
- 2007 Agreed to implement PAL as pilot project in two districts
- 2008 The TB/HIV Strategy was finalized

(Source:SAARC Tuberculosis and HIV/AIDS Centre, Bhaktapur: History of TB Control Programme in the SAARC Region)

After implementation of DOTS strategy in 1996, Nepal has been able to expand DOTS throughout the country, achieve and sustained the global target in case finding and cure rate. Still TB control in hard to reach area is a challenge.

Nepal NTP adopted DOTS strategy in 1996 and nationwide coverage was achieved in 2001. All DOTS sites are fully integrated within the general health services or run through NTP partner organizations in public private sectors. By mid July 2009 a total of 4383 health institutions including 1251 TCs and 3132 STCs were offering DOTS. Beside government health institutions several NTP partners also provide DOTS including; private nursing homes, polyclinics, factories, I/NGOs health clinics, eye hospitals, prisons, refugee camps, police hospitals, medical colleges, municipalities, Village Development committees and District Development committees. (NTC, Annual Report 2065/66 p.5, 6)

Key Challenges and Constraints:

- © Secure sustainable funding.
- © Expansion of partnership with public and private sector partners.
- © Establishment of Collaboration with National HIV/AIDS program and National Public health Laboratory.
- © Continue and expand management of MDR_TB through DOTS PLUS programme.
- © Address the issue of TB among Marginalized and at risk populations such as migrants, slum areas, prisons.
- © Address issues relating to internal and outside country migration including cross border collaboration for TB control.

Strengths:

- ♦ Tuberculosis is listed priority one program of the Ministry of Health and Population.
- ♦ The program has good health service performance indicators.
- ♦ The program is a global pioneer in the DOTS PLUS activities for care of drug resistant TB.

Weaknesses:

Finance of program activities and public health services remain a challenge

- ♦ There is an overly high dependence on external funding.
- ♦ Program management capacity is suboptimal in a number of areas.
- ♦ Insufficient human resource capacity to carry out management responsibilities.
- ♦ There is limited formal strategic planning capacity at the national level.
- ♦ Limited capacity in logistics, warehouse facilities and procurement.
- ♦ The post of "RTLI" lacks authority to execute its duties and there is no post for laboratory "Regional Quality Control Assessor".
- ♦ ACSM which is the responsibility of the National Health Education, Information and Communication Center" is inadequate.
- ♦ There is poor capacity and an ad-hoc approach.
- ♦ There are very few information, education and communication materials.

(Source: National TB control Program 2008, P.47)

2.22 Urban TB Control

The urban environment is fertile ground for the transmission of tuberculosis. In the overcrowded, unhygienic conditions of many of the world's larger cities, one infected person can transmit tuberculosis to 10-15 other people in one year. (IUATLD 2005 p. 16)

Lower income individuals, irrespective of race, postpone seeking primary care until their need for treatment becomes urgent, and they tend to rely on emergency rooms and hospital clinics for health services. Although this is often assumed to represent risk-taking behavior, the institutional barriers that discourage poor urban residents from seeking medical care are not sufficiently emphasized and are frequently overlooked. For, as long as individuals are being released to conditions of homelessness, unemployment, and widespread drug abuse, tuberculosis in our inner cities is here to stay. (CHARLES and JEAN: In REICHMAN AND HERSHFELD, 1993 p.498)

At present, healthcare provision in urban areas is largely unplanned and uncoordinated. While the government has devolved the principle that the responsibility of primary health care provision to the municipalities, the municipalities are currently under no obligation to provide

these services. There is very weak public primary health care infrastructure in most cities. It is a challenge to ensure that sufficient resources to health care from the municipal budgets.

The burden of TB in urban areas is high, due to rapid growth in urban populations, development of slum condition and TB/HIV infection. Addressing the burden is complex because of multiple service providers and diverse needs of recipients.

(NTC, HERD: 2009, page 9)

CHAPTER III

METHODOLOGY

Health research policies are necessary in order that the research organization's actions are consistent with one another. Without them, its actions will be unjustified and fragmented, and the organization is likely to be ineffective. (Htwe: 2001, p.50)

Increased research efforts in sociological aspects of tuberculosis are needed for successful implementation of TB control program. There is a need to explore the feasibility of including diverse groups such as private practitioners, social workers, female volunteers, traditional healers. We can also investigate the utilization of other agencies like HIV control programs.

This chapter presents the methodology adopted to investigate the socio-cultural aspects of Tuberculosis. The chapter describes about the study site, study subjects and its size, techniques and tools administered for documenting information, and data management and analysis. Reliability and validity follows afterwards with ethical aspects of this study.

3.1 Research Design

The descriptive and explorative research design was employed to find the problems of Tuberculosis control Program. It describes the knowledge attitude and behaviors of community

peoples towards TB. It also explores the facts about real situation from TB Patients, their problems, attitude of the community people towards TB patients.

3.2 Study Site

The place for study is Community setting for high sample representation to the population in Tansen municipality ward no. 7 Kailashnagar Tol of Palpa district. The reason of choice of place for study was having more Tuberculosis cases in that community.

3.3 Study Population

According to the Tansen municipality record, the total population of Tansen Municipality ward no. 9 Kailashnagar is 848. The respondents on the study were head of the households or other member above the age of 15 years either male or female irrespective of the literacy status In this study three methods i.e. household survey and case study methods were used to collect data.

3.4 Sampling Procedure

In this study, the basis of sampling was taken from Krejeie and Morgan In: Bernard Russel's Research Method in Cultural Anthropology, 1970.

In the first phase of field work household survey was done to assess the study area, size of households, size of samples, geographical situation etc. Household data was collected with systematic random sampling method. By this method 120 households were selected for the study.

Similarly TB patients taking anti-TB medication and their family members were also the respondents to probe the situation.

3.5 Nature and sources of Data

As per need of the study, both primary and secondary data was collected in this study. The priority was given to the collection of primary data. The primary data has both qualitative and quantitative. Priority has given to qualitative data, but some important quantitative data had been collected by employing household survey, questionnaire schedule, focused group

discussion and informal interviews. Secondary data had been collected from different published and unpublished sources as per need.

3.6 Primary and Secondary Data Collection Technique

The whole process of collecting data is called instrumentation. It involves not only the selection or design of instrument, but also the conditions under which the instrument will be administered e.g. where, when, how, often and who will collect the data. (Jack R. F, Normal E. 1993). Based on the research objectives following techniques were adopted to collect primary data.

a. Interview

A semi-structured questionnaire form was developed by investigator himself and used for data collection as a guideline. The tools were translated into Nepali, so that the perception and interpretation of the concept might not be different between interviewee and interviewer. That helped in maintaining validity.

The investigator himself and two volunteers were involved in data collection activity. Face to Face interview method was used for data collection with support of structured and semi-structured questionnaire form. This technique is the main tool for the collection of primary data to collect required data. With the consent, the respondents were interviewed for the required information. Careful attention was paid for not distorting the respondent's comfort while interviewing for the information. It took around 30 minutes for a single interview.

b. Observation

Both direct and indirect participant's observation was adopted to get relevant information for the study. Participant observation is the core of sociological and anthropological studies. TB affected persons, their role in the family, their economic status; family and society's behavior towards TB patient were observed.

c. Case Study

For getting special insights on certain aspects regarding people's perception towards tuberculosis and collecting more important qualitative data case study was carried out. 6 persons selected for the study who are taking anti-TB medicines in the hospital at the study period.

d. Literature Search

The literature search was started since November 2009. Basically, it was done by two ways. The first was the reviewing the printed materials, including journals and books. Most of the printed materials had been searched from the library of SAARC TB and HIV center, Bhaktapur, Nepal. The second approach was internet search. It was carried out since January 2010, and lasted till the July 2010.

3.7 Pre-test

Pre-test is the data collection done for maintaining validity of tool before research. To ensure that the tools were properly designed, they were pre-tested in the area to five respondents. After pre-testing, necessary changes were made and interview was finalized for administration to the respondents.

3.8 Data Processing

Collected data have been analyzed both qualitatively and quantitatively. Computer software programs used to analyze data. Tabulation and graphic presentation were made. The non-quantifiable data was managed manually and analyzed descriptively. Efforts were made to maintain the objectivity of the data and avoid data error by comparing them with different data collected from different sources.

3.9 Reliability and Validity of Data

Validity refers to whether a measurement instrument accurately measures, what is supposed to measure. When an instrument is valid then only it truly reflects the concept. Reliability is defined as the extent to which the instruments give the same result on repeated measures. Reliability is concerned with consistency, accuracy, stability, equivalence and homogeneity.

The researcher himself is the main person of field work. All the information collected by himself and his friends with the direct guidance of the researcher. Most of the information based on the primary data. The researcher himself finalized the questionnaire, check lists and they were updated from experts. Validity of the instruments ensured from careful planning of questionnaire schedule and interview schedules. Reliability of the data was assured by taking relatively larger samples of the respondents.

An adequate number of data sets of tools were pre-tested and validity of the tools in its contents and accuracy of information was ensured. For ensuring the external validity of the study is maintained, adequate concerned literature were reviewed; opinions from the experts in the concerned field of tuberculosis were obtained; comments from experts were invited and shared with research supervisor throughout the research process.

3.10 Ethical Consideration

The principle of justice requires that there be fair procedures and outcome in the selection of research participants. Individual justice in the selection of participants requires that researchers exhibit fairness. (NHRC, 2001)

An informed consent was taken from each research subjects before data collection. This informed consent had followed the ethical norms and values as stated in the National Ethical guidelines for Health Research in Nepal.

CHAPTER IV

AN INTRODUCTION OF STUDY AREA AND BACKGROUND CHARACTERISTICS OF RESPONDENTS

This chapter presents the Palpa profile in short and general introductory background of Tansen municipality. It also includes the findings of socio-economic and health background investigated in Tansen Municipality-7 Kailashnagar.

4.1. PALPA PROFILE

a. Geography:

Palpa district lies in the Western part of Nepal. It is situated at the 27°14' north to 27°57' North latitude and 83°14' east to 84°1' East longitude. The area of this district is 1373 sq. km.

b. Administrative Division:

There are 65 VDCs, 13 Ilaka, one municipality and three electoral regions in this district.

c. Population (2058)

According to the census 2058, the population of this district the total population of this district is 2, 68,558. Among them 1, 43,490 are male and 1, 25,068 are female.

d. Health status of Palpa District

There are more health facilities in Palpa district in comparison to other hill districts of Nepal. Most of the advanced health facilities are concentrated in Tansen municipality. The life expectancy rate of the people of Palpa is not better than national average.

There is a District Health Office including one District Hospital. There are 3 PHCs, in Rampur, Tanhoo and Khaseuli. There are 9 Ilaka Health Posts and 53 Sub-health Posts. 6 doctors, 29 nurses, 85 paramedics, 65 VHWs and 53 MCHWs are providing the health services in this

district from the government institutions. In addition these, there are 615 FCHVs in each ward of every VDC to provide preliminary advices and services.

The united Mission Hospital was established at 2011 Chaitra, serves people not only of this districts but also neighbouring districts of Nepal and nearby district of India. It has the capacity of 165 beds with 30 doctors, 86 nurses and 41 paramedics and provides about 300 outdoor patients and 40 emergency patients on an average, daily. It runs a nursing School to produce mid-level nurses.

The Lumbini Medical College and Research Center was established on.....with the objectives of; to produce efficient and qualitative manpower in the field of medical and health science by effective running of the well-equipped hospital of international standard. It, now, runs a Staff Nurse and an MBBS Classes to produce efficient health manpower. It provides about...outpatient and..... emergency patients on an average, daily.

There is one district level Ayurvedic Health Center in Tansen and 6 Ilaka level Ayurvedic Dispensaries in the district.

Lions Lacoul Eye Hospital provides services of eye problems. Initially Nepal Netra Jyoti Sangh was running the eye clinic since 1985.

Nepal Family Planning Association provides the services of family planning and safe abortion care. It is also running a VCT Clinic for counseling and testing of Vulnerable HIV clients.

Merrie Stopes Center also provides the service of temporary and permanent family planning services. Large numbers of unwanted pregnant clients are receiving the safe abortion care service from here.

In addition to the above mention health institutions, there are about two hundred private clinics and pharmacies are running in the district to provide medicinal facilities to the sick.

Focus should be given on the equitable access of quality health services to all with special focus on the women, children and most vulnerable groups. The foremost challenge is to narrow the disparity in health between urban and rural areas and between rich and poor.

Tuberculosis is continuing to be major public health problem in Palpa district. So many cases are diagnosing every month. In many places of Palpa, the stigma associated to TB is still a problem to diagnose early and continue full course of treatment.

4.2. TANSEN MUNICIPALITY

Different people have compared Tansen with different hill stations and health resorts. Some have compared it with Darjeeling while others with Nainital. Due to the boon Tansen has become famous as a place of healthy people. Perceval Landon, an earlier European visitor to this region has appreciated in his book "Nepal" the healthy condition of this place in the following words, "The healthiness of her inhabitants is proverbial; a recent visitor was enthusiastic over their good looks: 'all her men, women, and children have rosy cheeks and golden complexions and seem stout and strong'".

People from far and wide have naturally been attracted towards Tansen for centuries for the treatment of diseases and gaining better health. Thus Tansen is gradually developing as a resort for health-tourists as well. (Kasaju 2001)

The first settlers in Tansen were Magars. Therefore the town's name has its origin in Magar language, meaning 'northern settlement'. In the district and the surrounding villages, the percentage of Magars is still high. The core area of Tansen appears rather Newar dominated, who originated from Kathmandu but as traders migrated to most of the administrative headquarters. Hence the main languages in the region are Nepali, Newari and Magar. Hinduism and Buddhism are the main religion followed in Tansen, and they are exercised in a harmonic, non-exclusive way. There are also small communities of Muslims and Christians. The many diverse colorful festivals appreciably illustrate the richness of religious traditions and cultures still being preserved and visible not only Tansen, but also surrounding villages. (Palpa Chamber of Commerce and Industry, 2007)

Tansen is a small ancient hill town of Palpa district. Before unification of Nepal, Tansen was the capital of the Palpa Kingdom and ruled by the Sen Dynasty. It is situated in 1372 meters above sea level and located at 27°50' north to 27°53' north latitude and 83°31' east to 83°35' east longitude. It covers the area of 22 square km.

The climate of Tansen is most pleasant throughout the year. In summer it stays mild and charming not exceeds temperature than 32°C. In winter, it is quite warm and sunny the temperature does not fall less than 0°C.

Tansen municipality is very famous for tourism point of view. Many tourists come here to view various beautiful peaks. Shrinagar Danda is a 1600m high hill just north of Tansen, from where

there are excellent views over the Kali Gandaki River of the Himalaya. During the sunny days, Dhaulagiri, Annapurna, Manaslu, gauri Shankar and other peaks can be seen from Shreenagar Danda. Tansen is not only famous for various tourist places but also for many historical places like Shital Pati, Amar Narayan temple, Bhagawati temple, Vihars, Takshar Karuwa product area, Shrinagar Ganesha temple, Tundikhel, Parbhas lotus lake, Amarganesha temple etc. Besides these, Tansen is also well known throughout the country for other places which are near the Tansen municipality, such as Rani Mahal, Ridi, Satyawati Lake, Bhairabsthan temple and so many different beautiful places which are religiously important for local and abroad tourist.

In the past, Tansen was one of the trade route between the plains and the hills. Tansen is still accounted as trade center for some villages of Palpa, Gulmi, Syangja districts. Further more, Tansen is also an educational center for weatern part of Nepal, where students arrived for here higher education. It is also a famous for its traditional product for Nepali Dhaka and Karuwa.

Tansen municipality had done a 100 percent household survey with the help of GTZ/udle and published "Socio-economic Status of Tansen Municipality". According to the publication, some of the findings are given below.

There are 4383 households in Tansen municipality and total population is 20881. Out of total male and female population is 10387 and 10454 respectively. The majorities caste/ethnicity are the Brahmins (27.1%) and followed by Magar (20.7%), Chhetri (18.3%) and Newar (15.1%), Dalits (11.5%) and (7.3%) in Tansen municipality. More than 72 percent households reside in their own housing unit, 18 percent are renters, and 2.2 percent are living as squatters. Higher percentages (more than 44%) of households are living in temporary (Kachchi) house, 16 percent are semi-permanent, 3 percent are in huts, and only 37 percent are in permanent houses. The main source of drinking water is piped water (more than 85%), 10 percent households depend on spout/spring water and only 5 percent households depend on well and other sources of water. Overall 78.5 percent households in Tansen have proper toilet facility in their dwelling and 21.5 percent households have no proper toilet facility. Eighty seven percent of the populations five years of older are literate in Tansen municipality. There are gender disparities in literacy rates: 93 percent male are literate as compared to 82 percent female. The nominal mean annual house income for this municipality is Rs. 20768.

More than 80 percent of the households are treating their illness in private health organizations and among of them 61 percent in medicine shop. Where as 44 percent of the households are

treating their illness in public health facilities. Only few households are using traditional, natural and other type of treatment method during illness. Around 91 percent of households in focus areas who had the pregnant women are checking up Antenatal care regularly. Similarly 5 percent of households are checking sometimes when some problems occurred during pregnancy and 4 percent of households were not having check up at all. 50 percent of households received assistance from skilled health workers during delivery.

More than 72 percent of households reported that their children aged 0-4 yrs are immunized, while 26 percent of households could not immunize their children.

About 96 percent of households in the Tansen municipality area have heard about HIV/AIDS. Only 4 percent of households are not aware of HIV/AIDS.

About 39.6 percent of peoples are migrated from their origin.

There are 186 households in Tansen municipality-7 Kailashnagar and total population is 848. Out of total male and female population is 414 and 434 respectively. The majorities caste/ethnicity are the Brahmins (9.9%) and followed by Magar (26.4%), Chhetri (23%) and Newar (12%), Dalits (25.9%) and (2.7%) in Tansen municipality-7 Kailashnagar. More than 73 percent of households had permanent residence; about 22 percent households had long term temporary residence, while 5 percent of households had short term temporary residence. Higher percentages (more than 48%) of households are living in Permanent (Pakki) house, 36 percent are semi-permanent house, 10 percent are in temporary house (Kachchi), and only 6 percent are in huts. The main source of drinking water is piped water (more than 93%), 6 percent households depend on spout/spring water and only 1 percent households depend on other sources of water. Overall 86 percent households in Tansen municipality-7 Kailashnagar have proper toilet facility in their dwelling and 14 percent households have no proper toilet facility. 89 percent of the populations five years of older are literate in Tansen municipality-7 Kailashnagar. There are gender disparities in literacy rates: 97 percent male are literate as compared to 82 percent female. The average monthly house income for this Tansen municipality-7 Kailashnagar is Rs. 4072.

More than 96 percent of the households are treating their illness in private health organizations and among of them 94 percent in medicine shop. Where as 82 percent of the households are treating their illness in public health facilities also. Only 17 percent households are using traditional, natural and other type of treatment method during illness. 100 percent of households

in focus areas who had the pregnant women are checking up Antenatal care regularly. 86 percent of households received assistance from skilled health workers during delivery.

More than 90 percent of households reported that their children aged 0-4 yrs are immunized, while 9 percent of households could not immunize their children.

About 99 percent of households in the Tansen municipality area have heard about HIV/AIDS. Only 1 percent of households are not aware of HIV/AIDS.

About 44.6 percent of peoples are migrated from their origin.

(Based on Tansen Municipality: Socio-economic Condition, 2007)

4.3 Background characteristics of the Respondents.

4.3.1. Socio-demographic characteristics of the study Population

The table describes the socio-demographic characteristics of the study population.

Most of the study subjects were of age between 21 to 50 yrs. This is the economically active age group and in Nepal, this group is potential for every dimensions of country's development.

Table 4.1: Socio-demographic Characteristics (n=120)

| S.N. | Characteristics | Frequency | Percent |
|------|-----------------|-----------|---------|
| 1 | Age | 15-20 yrs | 10 |
| | | 21-30 yrs | 33 |

| | | | | |
|---|-------------------|-------------------|-----|-------------|
| | | 31-40 yrs | 26 | 22 |
| | | 41-50 yrs | 27 | 23 |
| | | 51-60 yrs | 15 | 13 |
| | | 60 + yrs | 9 | 8 |
| 2 | Gender | Male | 54 | 45 |
| | | Female | 66 | 55 |
| | | Brahmin | 15 | 12.5 |
| | | Kshetri | 36 | 30 |
| 3 | Ethnicity | Magar | 31 | 25.8 |
| | | Newar | 14 | 11.6 |
| | | Kami/Damain/Sarki | 22 | 18.3 |
| | | Others | 2 | 1.6 |
| 4 | Permanent address | Local | 104 | 86.6 |
| | | Non-Local | 16 | 13.3 |
| 5 | Marital status | Married | 102 | 85 |
| | | Unmarried | 18 | 15 |
| | | Illiterate | 16 | 13 |
| | | Literate | 28 | 23 |
| 6 | Education | Primary | 10 | 8 |
| | | Secondary | 33 | 28 |
| | | Above | 33 | 28 |
| | | Hindu | 118 | 98.3 |
| | | Bauddha | 0 | 0 |
| 7 | Religion | Islam | 0 | 0 |
| | | Christian | 2 | 1.7 |
| | | Others | 0 | 0 |
| | | 1 to 4 | 43 | 35.8 |
| 8 | Family Size | 5 to 8 | 70 | 58.3 |
| | | 9++ | 7 | 5.8 |

(Field survey, 2010)

Most of the study subjects were age group of 21-30 years (28%). Most of the respondents are age between 21 to 50 years (73%). This indicates that the respondents are matured and economically active group.

The percentage of female respondents is high. More than 55 percent respondents were female in this study.

Caste is extreme form of social class organization in which the position of individuals in the status hierarchy is determined by descent and birth. Caste refers to a hierarchical system or social control with each sub-group assigned with a ranked status depending on its origin and religion strictness. The data shows that the highest numbers of respondents are Kshetries (30%) and second highest are Magars (26%). There are remarkable numbers of respondents of Dalits (18%) in the study area. According to the data of the study area is mixed in population.

The above table 1 also shows the marital status of the respondents. In this table out of total respondents 85 percent stood as married and 15 percent as unmarried i.e. most of the respondents were married.

Education is a prerequisite for the development of human being. It is vitally important for overall development of society. Education as a social institution has a great importance especially in the modern, complex industrialized societies. In the table, 28 percent of respondents completed higher level of education and the same percentage is on the secondary level. It indicates that most of the respondents were well educated. But they are not equally aware about health and disease.

The religion is the macro institution of society. It is the belief of spiritual being. It holds or runs the whole society and teaches us what to do or what not to do in the society. Religion is the major concern of men. It is one of the earliest and deepest interests of human beings. Religion is universal, permanent and perennial interests of man. The table shows more than 98 percent of respondents were Hindus. It is no doubt that most of the population is Hindus in the study area.

Family is one of the fundamental units of every society. It is one of the most important institutions of the society which defines individual's roles, positions and authorities. It is the micro institution of the society. It is the group defined by sex, relationship sufficiently precise and enduring to provide for procreation and upbringings of the children. It is also known as biological social unit composed of husband, wife and children.

Above presented table 1 refers the highest 58.3 percent of the total respondents have five to eight members in their family. Similarly the second highest 35.8 percent of the total respondents have one to four members in their family respectively.

4.3.2. Economic status of study Population

Table 4.2: Economic Characteristics

| S.N. | Characteristics | Frequency | Percent | |
|------|-------------------------|--|---------|--------------|
| 1. | House ownership | Yes | 101 | 84 |
| | | No | 19 | 16 |
| 2 | Type of House | Permanent(Pakki) | 44 | 37 |
| | | Temporary (Kachchi) | 76 | 63 |
| 3 | Land Ownership | Yes | 94 | 78 |
| | | No | 26 | 22 |
| 4 | Family Source of Income | Business | 35 | 29 |
| | | Service (Job Holder) | 45 | 37.5 |
| | | Agriculture | 6 | 6 |
| | | Others (Labourers, Carpenters, Cobblers etc) | 34 | 28.75 |
| | | Less than 25000 | 7 | 5.8 |
| 5 | Family Annual Income | 25000-50000 | 23 | 19.2 |
| | | 50000-100000 | 21 | 17.5 |
| | | More than 10000 | 55 | 45.8 |
| | | Don't Know | 14 | 11.7 |
| 6 | Income sufficiency | Sufficient anyhow for a year | 58 | 48.3 |

| | | | | |
|---|--|------------------|----|-------------|
| | | More than enough | 20 | 16.6 |
| | | Not sufficient | 42 | 35 |
| 7 | Difficulty in Treatment expenditure | Yes | 52 | 43.3 |
| | | No | 68 | 56.6 |

(Field survey, 2010)

It is known fact that a positive co-relation exists between tuberculosis and social stratification. Example of stratification, data associated poverty has always been associated with tuberculosis. Masses of people crowded into sub-standard housing and the social factors involved are usually a community problem.

Man is not only a social animal; he is also economic being. He is incessantly engaged in what are known as economic pursuits or activities. This economic activity is so multifaceted, varied and complex that they constitute what is known as economy.

The table two shows that most of the respondents live in their own houses and remaining 16 percent of respondents live in rented house.

The table 2 also show that the most 63 percent live in temporary (Kachchi) houses i.e. the houses that is not built by RCC is called temporary houses in this study. Most of the houses of the respondents were tin roofed. The houses that are built by RCC are called permanent houses in this study. Remaining 37 percent of the total respondents live in Permanent houses.

Occupation is used mostly to refer to specialized and established kind of work. It refers to some kind of work with which and individual becomes engaged. It denotes the habitual employment, profession, craft or trade of an individual. It takes up much of his time and attention.

The above table 2 shows that most of the respondent's source of income is service (37.5%). Service means employment in government or private institution in this study. The second highest 29 percent of the total respondent's source of income is from business. Business means selling goods to earn money at a shop in this study.

The above table 2 shows that the most 45.8 percent of the total respondent's family income is more than 100000. In the same way 19.2 percent, 17.5 percent and 5.8 percent of the total respondent's family income is 25000 to 50000, 50000 to 100000 and less than 25000 respectively. Most of the respondent's family income is sufficient anyhow for a year (48.3%) and

35 percent respondents family income is not sufficient for a year in this study. Similarly 56.6 percent of the respondent's family do not faces any difficulties for the treatment if any family member becomes ill in the family and remaining 43.3 percent of the respondent's family faces difficulty for the treatment of their family members. They have to borrow money for treatment expenditure.

4.3.3. Exposure to mass media.

In the modern age, no one can ever dream of living without communication. In the developed countries, communication means like television, radio, newspaper and other modern inventions are widely used for not only communication purpose but also for education as well as entertainment. Information and communication has made the world a global village but in the context of Nepal, we cannot expect this type of technology. Cheap means like radio, TV and to some extent newspapers, however, create awareness about health and sanitation.

Table: 4.3 means of communication

| Means of Communication | Radio | Television | Newspaper | Other | No any means of communication |
|------------------------|-------------|-------------|------------|----------|-------------------------------|
| Number | 74 | 91 | 11 | 0 | 10 |
| Percentage | 61.6 | 75.8 | 9.2 | 0 | 8.3 |

(Field survey, 2010)

The respondents of 91.6 percent have means of communication. Altogether there are 74 radios 91 television. Only 8.3 percent of households have not any means of communication

4.3.4. Health Characteristics

We know that "health is wealth" and equally "Prevention is better than cure." In each community there are typical practices about the treatment of case or diseases. In the society, some go to see the doctor; some practice Ayurvedic ways and some go to witch doctors. Their

pursuits of getting treatment depend upon their level of awareness about health. In the study period among 120 households 98 households were free from illness and other 22 households had some signs of illness. In this community, when they became sick or any kind of illness their practice of treatment is allopathic treatment practice. Most of the people go to either government hospital or private hospitals or both institutions. Due to lack of awareness, only about 3 percent of families go to treat in traditional healers.

Table 4. 4: Health Characteristics

| S.N. | Characteristics | Frequency | Percent | |
|------|--|-------------------------|----------|-------------|
| 1. | Family Illness | Yes | 22 | 18 |
| | | No | 98 | 83 |
| 2 | Place of Treatment | Govt. Hospital | 37 | 31 |
| | | UMH | 72 | 60 |
| | | LMC | 24 | 20 |
| | | Medical Hall | 22 | 18 |
| | | Ayurvedic Health Center | 1 | 0.8 |
| | Traditional Healers | 4 | 3 | |
| 3 | BCG Vaccination | Yes | 45 | 90 |
| | | No | 5 | 10 |
| 4 | No. of families having Cough more than two | Yes | 4 | 3.3 |
| | | No | 116 | 96.7 |

| | | weeks | | |
|---|---------------------------------|-------|-----|-------------|
| | | Yes | 34 | 28 |
| 5 | Smokers in The family | No | 86 | 72 |
| | | Yes | 36 | 30 |
| 6 | Alcohol drunkards in the family | No | 84 | 70 |
| | | Yes | 8 | 6.7 |
| 7 | Family members taken ATT before | No | 112 | 93.3 |

(Field survey, 2010)

Immunization protects from killer diseases. BCG is given specially in the body through intra-dermal route. Special vaccines developed for special diseases e.g. BCG protects from severe type of Tuberculosis. Among 120 households, there were 50 household having children under one year. 90 percent of the families vaccinated their child with BCG but 10 percent of the families did not vaccinate their child, due to lack of knowledge.

Cough more than two weeks is the vital sign of tuberculosis. If a person have cough more than two weeks, he is supposed to be a suspected tuberculosis and National Tuberculosis Programme recommends him to examine his/her sputum. In this community 3.3% of households have this symptom to one or more family members.

Smokers and alcohol drinker population is vulnerable to many diseases like cancer, heart diseases, asthma, cirrhosis of liver as well as tuberculosis. The community where the practice of Smoking and drinking alcohol is high, the chance of getting Tuberculosis may also increase. In this community, as the above table describes, 28 percent of household have one or more family members have the habit of smoking and 30 percent of households have one or more family members have the habit of alcohol drinking. This indicates that this community is at risk of tuberculosis disease.

We know if there are more persons affected by tuberculosis, there is more number of people already infected with tuberculosis. According to the district hospital, this community is

the second highest affected by tuberculosis. As the table 4 refers, 6.7 percent of the households already were affected by tuberculosis.

CHAPTER V

KNOWLEDGE ABOUT THE DISEASE

This chapter mainly focuses on the knowledge about TB i.e. its cause, mode of transmission, method of diagnosis, treatment methods etc.

According to GWA Turner, Attitude to leprosy and TB are the two main public health problems and ignorance of the dangers of Tuberculosis and prejudice towards leprosy sufferers must be overcome by public education. The public health service is not meeting needs and preventive rather than therapeutic measures should be promoted and adopted. (Turner1967, 111-4)

Knowledge often comes from experience. We also gain knowledge through information provided by teachers, friends, patients, books, and newspapers. We can usually verify whether our knowledge is correct or not. If we cannot verify this directly ourselves, we know people who can.

Health education must begin with people's own etiological concepts even if those are not "scientific". Ethno medicine is the term now widely uses to refer to traditional beliefs and practices having to do with disease etiologies and therapies. The importance of these traditional beliefs and practices is shown again and again in the case of studies of health education programme. (Sharma, Hirachan et all 2044-2049)

Knowledge of respondents about symptoms and disease was assessed by asking some fundamental questions about cause, important symptoms, and mode of transmission, diagnosis and treatment of TB.

5.1. Cause of TB:

Every disease has its etiology. Tuberculosis is caused by bacillus. It is called Mycobacterium Tuberculosis. It is better every people to know the exact cause of tuberculosis.

Table: 5.1 Causes of TB

| Causes | Germs | Drinking alcohol and Smoking | Stale food and dirty environment | Heredity | Witch/Evil eye | Hard Work | Don't Know |
|-------------------|-------------|------------------------------|----------------------------------|----------|----------------|------------|-------------|
| No | 45 | 53 | 10 | 6 | 0 | 3 | 15 |
| Percentage | 37.5 | 44 | 8 | 5 | 0 | 2.5 | 12.5 |

(Field survey, 2010: Percentage based on multiple responses of 120 Respondents)

Majority of the respondents believe that the TB is caused by smoking and alcohol consumption (44%) followed by germs (37.5%). Smoking and alcohol consumption is not the direct cause of TB but smokers and alcoholics are vulnerable to TB. A remarkable no of respondents did not know the cause of TB, which shows that the people still don't know the exact cause of TB.

5.2. Signs and Symptoms of TB:

If the majority of people are aware of signs and symptoms of TB; it is easy to finding cases hidden in the society. Early detections of TB cases and prompt treatment is one of the most important part of NTP. Early case finding helps to cut the chain of transmission of the disease. As described in the first chapter, cough more than two weeks is the vital sign to detect the cases early. Other signs are chest pain, loss of appetite, weight loss, evening rising mild fever with sweats and blood in sputum.

Table 5.2: Signs and symptoms of TB

| Symptoms | Cough | Chest pain | Fever | weight loss | Blood in sputum | all | Don't Know |
|-------------------|-----------|------------|----------|-------------|-----------------|-----------|------------|
| No. | 30 | 13 | 4 | 19 | 60 | 29 | 6 |
| Percentage | 25 | 11 | 3 | 16 | 50 | 24 | 5 |

(Field survey, 2010: Percentage based on multiple responses of 120 Respondents)

Table 6 refers that only 24 percent of respondent has the proper knowledge about signs and symptoms of TB. All symptoms described above are the symptoms of TB. Just one forth of the respondents had knowledge of coughing for two weeks or more as the important symptoms of

TB (25%) and most of the respondents (50%) believed that blood in cough is the important symptom for suspecting TB. This is not the good message for NTP because blood in sputum is not the early sign; at this stage TB patient already may transmit the disease to others.

5.3. TB Transmission

The spread of TB occurs through the air from droplets which transmit infection from one person to another. The bacteria are released in the air when a person with pulmonary TB coughs or sneezes. The droplets may be inhaled by nearby people and they become infected.

Table 5.3: TB Transmission

| Transmission | Taking food together | Coughing and Sneezing | Dirty water | Stale food | Don't Know |
|-------------------|----------------------|-----------------------|-------------|------------|------------|
| No. | 32 | 75 | 7 | 4 | 16 |
| Percentage | 27 | 63 | 6 | 3 | 13 |

(Field survey, 2010: Percentage based on multiple responses of 120 Respondents)

According to the table 7, most of the respondents (63%) had the understanding that TB is transmitted mainly nearby coughing and sneezing from a TB patient. There are diseases transmitted by taking food together, dirty water, stale food, but TB transmits mainly from droplet infection.

5.4. Diagnosis of TB:

At present, microscopic examination of sputum is the best method for diagnosis of Pulmonary TB. Chest X-ray may help in diagnosis of TB of the lungs. The smear microscopy is better

method of diagnosis than X-ray because it is simple, easy to perform; less expensive and more reliable. (Saarc Center: 2006, page, 11)

Table 5.4: Diagnosis of TB

| | Blood Exam | Stool/ Urine Exam | In the Basis of S/S | Sputum Exam | X-ray | Don't Know |
|-------------------|------------|-------------------|---------------------|-------------|-----------|------------|
| Number | 49 | 14 | 8 | 61 | 22 | 4 |
| Percentage | 41 | 12 | 7 | 51 | 18 | 3 |

(Field survey, 2010: Percentage based on multiple responses of 120 Respondents)

Almost half of the respondents had said that TB can be diagnosed by sputum examination. At the same time 41 percent respondents also added TB can be diagnosed by blood exam also. Simply TB cannot be diagnosed by blood exam only; Stool and urine exam in TB has no significance; X-ray has a role of supportive diagnostic tool in TB. This data indicates that the majority of population has knowledge how TB is diagnosed.

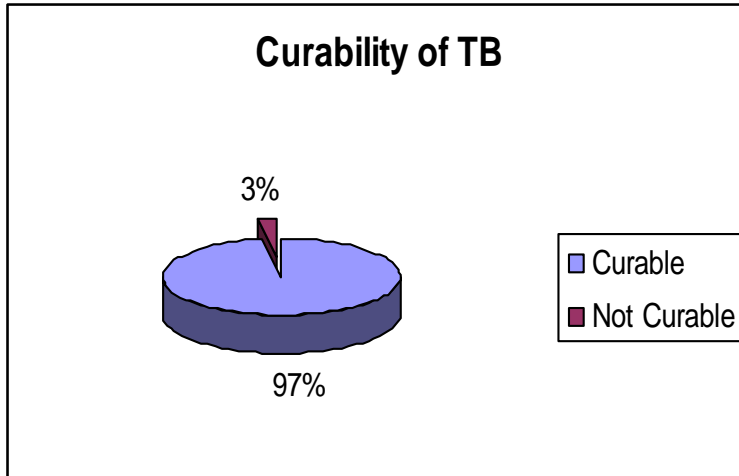
5.5. TB Curability

The fate of a patient with TB, in terms of disease outcome, depends on whether s/he seeks treatment. The likelihood of receiving treatment is related to the patients access (in terms of time, money and approximate) to health care. Having sought help the likelihood of a cure depends on whether they complete the full course of treatment, which is 6 to 8 months. Patients who are either not diagnosed or drop out before completing treatment may die.

According to Government of Nepal, Ministry of Health and Population, National Tuberculosis Centre has free supply of anti-TB drugs in the country. In the periphery, once it is diagnosed, the peripheral health institutes i.e. treatment centres and sub-treatment centers provides anti-TB drugs free of cost to all.

In relation to acceptance of treatment of TB, there is still ignorance about this disease, as well as with so many other public health problems in the community.

Figure 5.1: curability of TB



There is often a long delay between the first symptom of the disease and the patient seeks help from allopathic health services. There is often long delay before correct diagnosis and management instituted.

TB is fully curable disease. TB drugs are available at free of cost in all government health facilities. The figure 1 given below refers that most of the people (97%) were found to be understood that TB can be cured.

There are various types of methods of treatment to cure the ailments. The table given below lists the different views of respondents expressed how TB is cured.

Table 5.5: Methods of treatment

| Method | Worshiping Gods | Traditional Healers | Ayurvedic medicine | Allopathic medicine | Don't Know |
|-------------------|-----------------|---------------------|--------------------|---------------------|------------|
| Number | 0 | 1 | 4 | 114 | 1 |
| Percentage | 0 | 0.8 | 3.3 | 95 | 0.8 |

(Field survey, 2010)

Most of the (95%) of the respondents were found to be understood that TB can be cured through allopathic medication.

5.6. Prevention of TB

Early diagnosis of disease and prompt initiation of treatment is essential for an effective tuberculosis control programme. Delay in diagnosis may worsen the disease, increase risk of poor clinical outcome, including death and enhance transmission of tuberculosis in the community. (Demissie, Lindtjorn, Berhane. 2002; 2: 23)

From the public health point of view, the best way to prevent TB is to provide effective treatment to the infectious TB cases. This interrupts the chain of transmission. Simple measures to decrease the risk of transmitting TB from TB suspects and TB patients include covering the mouth with the hands when coughing, and using sputum pots with lids. Good ventilation helps reduce TB transmission. Sunlight is a source of ultraviolet light which can kill TB bacilli. A facemask decreases the risk. The benefit of BCG is in protecting children against severe TB.

Table 5.6: Prevention of TB

| Method | Using Masks | Isolation of Patient | BCG Vaccination | Early Diagnosis and proper Treatment | Don't Know |
|-------------------|-------------|----------------------|-----------------|--------------------------------------|------------|
| Number | 16 | 20 | 21 | 69 | 16 |
| Percentage | 13 | 17 | 17.5 | 57.5 | 13 |

(Field survey, 2010: Percentage based on multiple responses of 120 Respondents)

All methods described in table 11 are the ways of prevention except isolation of patient. Isolation of patient is against humanity. 13 percent of respondents did not know how to prevent TB. Early diagnosis and proper treatment for prescribed duration is the best way and more than 57 percent of respondents were found to be understood that TB can be prevented from this way.

CHAPTER VI

ATTITUDE TOWARDS TUBERCULOSIS

The way a person views something or tends to behave towards it, often in an evaluative way is called attitude. This chapter includes various subject matters of socio-cultural aspects. This chapter focuses about the community's attitude towards TB and belief, stigma and discrimination of TB patient etc.

6.1. Perception about symptoms and disease:

Way of perceiving; awareness or consciousness about certain thing is called perception. Level of perception was assessed by asking respondents to respond on some fundamental statements about perceived severity, economic impact to individual society, mode of transmission, and diagnosis and treatment of TB.

Table 6.1: **Perception about symptoms and disease:**

| Statements | Perception | | | | | |
|--|------------|--------------|----------|------------|----|-------------|
| | Yes | % | Not sure | % | No | % |
| I. Coughing for 2 weeks or more is not a serious matter, which is most of the time self recovered. | 30 | 25 | 13 | 11 | 77 | 64 |
| II. There is no harm of getting TB disease in your society | 36 | 30 | 7 | 6 | 77 | 64 |
| III. If one member of a family gets TB; there is high chance of developing TB to other members. | 105 | 87.50 | 1 | 0.8 | 14 | 11.6 |
| IV. TB is communicable disease. | 108 | 90% | 2 | 1.6 | 10 | 8 |
| V. TB is fatal disease, if untreated. | 112 | 93 | 3 | 2.5 | 5 | 4 |

(Field survey, 2010)

25 percent of the respondents perceived that coughing for two weeks or more is not a serious matter, which is most of the time self recovered and 11 percent not sure. Majority of the respondents had positive perception towards coughing for two weeks or more. More than 30 percent of the respondents had perceived that there is no harm of getting TB in their society, where almost two third (64%) had positive perception. Similarly, most of the respondent (87.5%) perceived that if there one member of a family gets TB; there is high chance of developing TB to other members of the family. 90 percent of the respondents had a good perception that TB is a communicable disease; similarly 93 percent of respondents had perceived that TB is a fatal disease, if untreated. However, 2.5 percent of the respondents were not sure about the

Communicability of TB; 4 percent of them had perception that TB is not a communicable disease.

The table 12 describes that most of the people had a good perception about symptom and disease. Most of the people are aware of TB disease.

6.2. Belief, attitude and stigma about TB

These beliefs usually derived from our parents, grandparents and other people we respect. We accept beliefs without trying to prove that they are true. Every country and community has its own beliefs, for example, in many countries there is regarding which foods a pregnant women should and should not eat. Beliefs will classify such as some are harmful, some are helpful or neutral.

Culture defines etiological concepts of disease, methods of diagnosis and therapy. For instance, some cultures believe that haemoptysis is caused by witch-craft and all that the house hold need do is to take the patient to the witch doctor.

In most developing societies, folk and traditional forms of health care existed and were used commonly by the population before the introduction of modern medicine. Further more folk and traditional healthcare is both socially and culturally closer to the people.

Gesler states that healing or treatment has two functions: control of sickness and providing meaning for a person's experience of sickness. Modern health care performs only the first function, but traditional health care performs both. In other words, modern health care can treat a problem effectively, whereas traditional healers not only treat a problem but also offer a satisfying and culturally meaningful interpretation of the illness.

Thus, in spite of their effectiveness and curative power, modern health care services are not used widely in rural area.

Health behavior research should identify the psychological reason for the stigma but these should not be used as rationales for the failure of TB control must be addressed the issue of law to change attitudes, research on TB must address the issue of law to change attitude and behavior of all concerned including practitioners.

Nepal is a multi ethnic society. Various groups of our society have their own concepts of disease, various methods of dealing with illness. Nepalese pray various deities for protection, not only at

times of stress but for comfort and well-being in future years. There special deities to whom special offerings and special request can be made.

In the developing countries, traditional healers are an important resource who should be fully employed in the effort to provide adequate health care. They should include herbalists, divine healers, spiritual faith healers, traditional midwives, shamans, traditional Chinese doctors bone setters and others (Jha and. Kannan: 2001, p.38)

There is continuing world wide evidence that: a heavier burden of illness and greater exposure to health hazards exist in the more socially disadvantaged groups in society; and health services are often least accessible and of poorer quality in disadvantaged areas. (Than at all : 2001, p.41)

The traditional healers are found everywhere in the world. They live close to the people and their treatments are based on various combinations of religion, magic and empiricism. There are different types of traditional healers in Nepal. Dhamis and Jhakris are very famous for caring for illness. Jharne and Fukne practices are popular in our society. These popular healers heal the illness by different methods, Jhakris by spiritual medium, Tantrik by practicing tantrism or Deuta i.e. healer possessed by a mother goddess. Sudeni (Traditional Birth Attendant) is always playing vital role at the time of delivery. Only a few percent of delivery is conducted by health workers.

The use of herbs as medicine existed from time immemorial. Traditional healers such as Dhamis and Jhankries also use the herbs as the means of cure. All areas in Nepal where medicine is available a certain amount of self-care takes place. Buying simple remedies over the counter is permissible and the many medical halls cater to this demand.

A western investigator Streefland concluded about medicine in Nepal as following :(Dixit : Page 35)

-) Different medical systems can co-exist. Each whilst its own expertise will generally cater for the common ailments.
-) People may adopt behavioral aspects of medical systems without fully the theories involved.
-) People's actual health behavior in situations results after considering the pros and cons that exist.
-) Another factor was the costs of health behavior, in relation to what people can afford and to the quality of services that they will get.

) People move from one system of medicine to another, from one interface to another.

There are different levels of health institutions, district hospital at district level, Primary Health Care Centers at electoral region, Health Posts at Ilaka level and Sub-health Posts at VDC level to provide health services to the people. However, the government health services, the health institutions, are not the first choice because of the fact that the treatment given by the traditional healers are cheap and easily available.

TB is associated with poverty and often results in discrimination and stigma, and abuse of human right. In some places there has always been a stigma attached to TB. People risk losing their jobs and housing if it becomes known that they have TB. The stigma and stress may be worse for women. In some cultures, having TB may make it difficult to find a husband or result in divorce. Links between HIV and TB are worsening the stigma.

(AHR TAG, UK: Issue 31)

Encouraging people to seek and complete TB treatment is essential for successful TB care and control. Understanding local beliefs, community education and health worker training all play important roles. Beliefs about TB and its causes are important influences on people's behavior.

For example studies have found that people may:

-) believe that TB cannot be cured and do not know that with proper treatment people no longer infectious
-) think TB is disease sent from god, or caused by magic or witchcraft
-) be unaware of TB and its symptoms, how it is spread, and its seriousness
-) think that TB only affects 'cursed' or 'bad' people
-) consider TB patients are the result of unclean behaviour
-) link TB with HIV leading additional stigma.

People may self treat or use traditional healers instead of modern health services and drugs, if illness is believed to be caused by magic or witchcraft. Stigma means people may deny their community or family. Fear or rejection can be an important reason for not seeking help from health care services and for not completing a course of treatment. Understanding these attitudes and beliefs can help health workers to give more appropriate advice and to provide more relevant community health education. Health worker attitudes and resources can cause people to delay seeking treatment and fail to complete their therapy (AHR TAG, UK: Issue 31)

6.2.1. Attitude toward TB Patient:

Every cultural group has its way of defining illness and disease and the behavior of the family towards health related matters is mainly governed by the household knowledge about healthy living and also by the adherence to cultural attitudes related to health.

The misconceptions about TB and varied attitudes of patients and providers are prevalent in our society. The belief that TB was caused by former misdeeds were misconceptions held by our society resulted in different behavior to the TB patients. The causes of discrimination were the beliefs that TB was retribution for former misdeeds. This belief was compounded by a widespread perception that TB is associated with alcoholism and smoking.

Figure 6.1: Attitude toward TB Patient

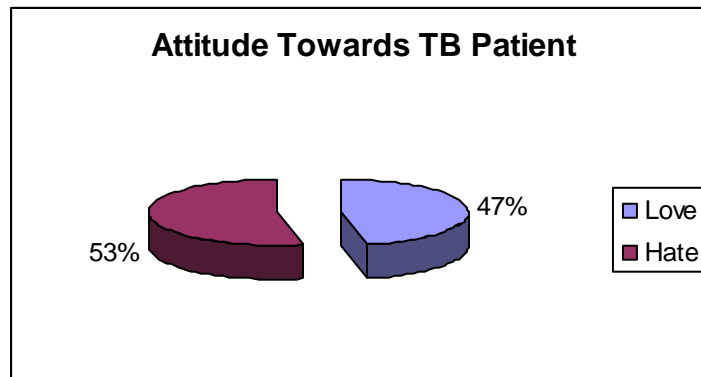


Figure 2 shows that more than 53 percent of the people hate TB patient. They are not interested to help TB patient because of the negative perception about the causes of disease. However, 47 percent of the respondents had said that they want to help TB patient.

Table 6.2: Reasons for Love TB Patients (n=56)

| Reasons | To care them is everyone's duty | They are in critical condition | It is religious work |
|-------------------|---------------------------------|--------------------------------|----------------------|
| Frequency | 35 | 18 | 6 |
| Percentage | 62 | 32 | 11 |

(Field survey, 2010: Percentage based on multiple responses of Respondents)

Among 120 respondents only 56 respondents (47%) had paid attention positively towards TB patients. The reason for love; as shown in table 13; most of them (62%) thought that to care TB patients is every one's duty. 32 percent had considered TB patients are in critical condition. They are ill, poor and helpless therefore it is necessary to help TB patient.

Remaining 11 percent had thought that to help such persons is religious work.

Table 6.3: Reasons for Hate TB Patients (n=64)

| Reasons | TB is the result of curse of sin. | They are smokers and drunker | They can transmit disease to other | Other reasons |
|-------------------|-----------------------------------|------------------------------|------------------------------------|---------------|
| Frequency | 4 | 22 | 35 | 7 |
| Percentage | 6 | 34 | 55 | 11 |

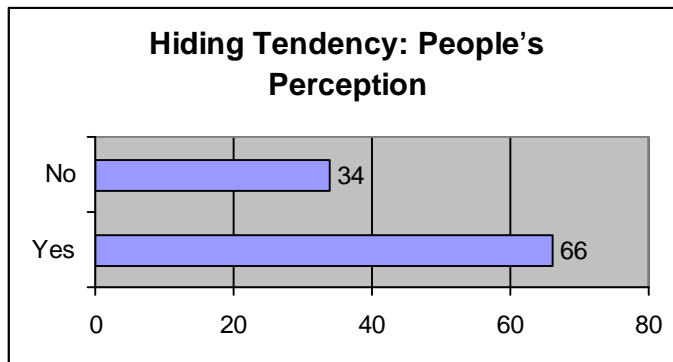
(Field survey, 2010: Percentage based on multiple responses of Respondents)

Among 120 respondents 64 respondents (53%) had shown negative attitude towards TB patients. Most of the respondents who hate TB patients had said that TB patients transmit the disease to other. 34 percent hate them because of the previous habit of the TB patient. According to them TB patients were smokers and drunker. They are evil of the society. Only 6 percent of the respondents had perceived that TB is the result of curse or sin.

6.2.2. Disease Hiding Tendency

Patients are coping with the stigma and discrimination they face of being infected with TB. Mostly they isolated themselves and avoided the contact with persons especially those who they think to have negative attitude toward them. However, being infectious disease patient may try to separate so as to protect other from the infection. Patients may worry and scare with diseases are frustrate with the difficult treatment. (Nepal et all, 2008). Self-discrimination is also identified included fear of transmitting TB, and avoiding gossip and potential discrimination. (Macq, Solis, Maertiny, Dujardin (2005). 205-217.)

Figure 6.2: Hiding Tendency



The figure 3 clearly refers that from the people's perception; most of the TB patients (66%) want to hide the disease, whereas only 34 percent people had thought that they do not want to hide the disease.

Table 6.4: Reasons for hiding the disease:

| | | | | |
|---------|----------------------|---------------------|-----------------|-------------------|
| Reasons | Fear of being hatred | Fear of humiliation | not prestigious | lack of knowledge |
|---------|----------------------|---------------------|-----------------|-------------------|

| | | | | |
|-------------------|-----------|-----------|-----------|-----------|
| | | | | about TB |
| Frequency | 58 | 17 | 8 | 13 |
| Percentage | 73 | 22 | 10 | 16 |

(Field survey 2010, Percentage based on multiple responses of Respondents)

Among 120 respondents 79 respondents (66%) had said that TB patients want to hide their disease. Among them most of the respondents (73%) had thought TB patient want to hide their disease because of fear of being hatred; 22 percent of them having the fear of humiliation; 10 percent of them had the thought of being as TB sufferer is not prestigious at all and remaining 16 percent had lack of knowledge. This indicates that there is the link between TB and social prejudice.

6.2.3. Stigma

Stigma is a powerful negative social label, stemming from a discrediting attribute of the individual which dramatically changes their social identity (Goffman, 1963). It is the perception of stigma by other people or the stigmatized person him/herself that leads to discrimination and feeling of unworthiness or guilt, leading to lack of self-worth and depression and abnormal behavior such as self-isolation and introversion. (Mai Chiang: 2006). Stigma is the negative attitude of society towards a person affected by disease. Often in Nepal, stigma causes a person to believe that ha has sinned. The stigma felt by people with TB is very real-it can be seen in everywhere, the person who sets aside for fear of disease transmission. Although inside the health institution, the thinking may have changed tremendously, one-step outside shows that in the community nothing has changed. Respondents were asked to respond on six stigma-related statements contextual in the local socio-cultural perspective to assess the level of stigma.

Table 6.5: Stigma related to TB

| Statements | Yes | % | Not sure | % | No | % |
|------------|-----|---|----------|---|----|---|
|------------|-----|---|----------|---|----|---|

| | | | | | | |
|---|----|-----------|----|------------|-----|-------------|
| I. People would become alone when they get TB. | 92 | 77 | 11 | 9 | 17 | 14 |
| II. People are interested to stay away from TB patients. | 77 | 64 | 9 | 8 | 34 | 28 |
| III. TB patients are reputed very normal in your family. | 71 | 59 | 12 | 10 | 37 | 31 |
| IV. In our society, it is difficult to get married for an unmarried young woman who got TB. | 87 | 73 | 8 | 7 | 25 | 20 |
| V. TB is the disease of poor only. | 13 | 11 | 1 | 0.8 | 106 | 88.2 |
| VI. In fact, TB is caused as the punishment for sinful acts. | 7 | 6 | 9 | 7 | 104 | 87 |

(Field survey, 2010)

Table 16 describes that 77 percent of respondents had the belief that people would become alone when they got TB; only 14 percent did not believe so. Almost two-third was found interested to stay away from their neighbours and friends when they got TB. 59 percent of the respondent had the belief that TB patients are reputed very low in their family as before getting the disease; 31 percent did not accept this. More than 73 percent interviewed had a belief that it would be difficult to get married for an unmarried young lady if she got TB; whereas only 20 percent of them didn't believe so. The statement "TB is the disease of the poor only" was responded 'yes' by only 11 percent of the respondents and 'no' by more than 87 percent. More than 86 percent of the respondents didn't blame God for the cause of TB, while only 6 percent of them were found believed that TB is caused as the punishment for sinful act the people did. This description reflects that this community has stigma associated with TB. The level of stigma is different in different aspects; in the supernatural causes the level of stigma is low but in socio-cultural aspect the level of stigma is quite high.

CHAPTER VII

TB SERVICE EFFICACY AND PATIENT'S PERSPECTIVE

Health care service focuses on providing health care to the people, though accessibility of health care services facilitates utilization, but the creation of demand is necessary. People need to learn that their government is asking for their help for improving their health through their own efforts and know how to carry out this mandate for their own benefit. The concept of 'Medical Care' is changed into health care, which means promoting, maintaining, monitoring or restoring health of an individual or communities through health services. (Bhattarai 1994 p.7)

Effective TB control requires a properly functioning health service with good management, diagnostic facilities, trained staff and regular drug supplies. A poor is worse than none at all, because of the risk of large numbers of people being given inadequate treatment. This means they will continue to be infectious to others and this can lead to the development of TB strains resistant to available drugs.

7.1. Service Efficacy

This section includes the service effectiveness from the people's perspective. Where do the TB services available; how do they get treatment services; causes of interruption of treatment; DOTS strategy etc has focused in this chapter.

7.1.1. Knowledge of Service availability:

People should have the health service availability. If people are not aware what types of services are available from the health institution; there will not effective utilization of health services.

Table 7.1: Knowledge of Service availability

| Knowledge of Health Service availability | | |
|--|-----------|-----------|
| Knowledge | Yes | No |
| Number | 83 | 37 |
| Percentage | 69 | 31 |

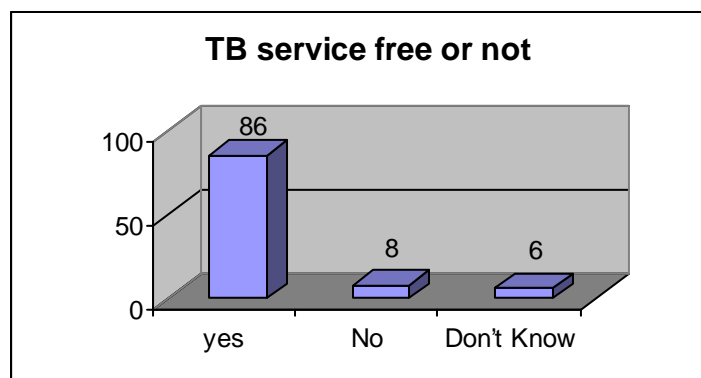
(Field survey, 2010)

As the above table shows that maximum (69%) of the respondents had the knowledge about TB services. This percentage is not satisfactory; most of the people should have the knowledge where they should go if symptoms of TB appear.

7.1.2. Diagnosis and Treatment expenses:

All the services of Tuberculosis should be free of charge. The diagnosis of the disease by sputum microscopy is free all over the country in public sector. But other diagnostic facilities are expensive and difficulty to reach of rural poor people. The medicines are available at the grass-root level with free of cost. People should be aware about these facts to utilize the services effectively.

Figure 7.1: Treatment free or not



Respondents were asked about the expenses of TB treatment services. It was found that 86 percent of respondents interviewed, who had knowledge of TB treatment services are free of cost; remaining 8 percent of them had said they had to buy TB medications and 6 percent of them had no idea about it.

7.1.3. Treatment compliance

Patient compliance is a key factor in treatment success. A significant proportion of patients stop treatment before completion, for various reasons. The premature interruption of treatment represents a problem for patients, their families, and those who care for them, and those responsible for TB programmes. (WHO: 2003 p.47)

The dimension of compliance includes availability of care, regularity of services, personal qualities of the provider, communication with the patient, and general satisfaction towards the service.

All diagnosed TB patient should complete the full course of treatment to be cured, to cut the chain of transmission of TB and to prevent from developing drug resistant TB.

Table 7.2: causes to interrupt TB Treatment

| | | | | | | | |
|--------------|-------------------------|---------------------------------|--------------------------|----------------------------------|------------------------|---------------|------------|
| Difficulties | Patient may think TB is | Feeling better from the Disease | Long period of treatment | Difficult to go everyday to take | Bad behavior of Health | Lack of money | Don't know |
|--------------|-------------------------|---------------------------------|--------------------------|----------------------------------|------------------------|---------------|------------|

| | not curable | | | medicine | workers | | |
|------------|-------------|----|----|----------|---------|---|----|
| Frequency | 11 | 54 | 20 | 27 | 0 | 7 | 12 |
| Percentage | 9 | 45 | 17 | 23 | 0 | 6 | 10 |

((Field survey, 2010: Percentage based on multiple responses of Respondents))

A question "what are the difficulties may influence to complete the treatment of TB for 6 to 8 months?" was asked to all respondents to assess the difficulties that lead to defaulters of treatment.

As shown in table 17 it was found that 45 percent of the respondents had the thought that the leading cause to be defaulted in treatment is feeling better from the disease after some time of treatment.

These difficulties should be addressed to the effective implementation of national TB control programme.

7.1.4. DOTS

DOT is a strategy in which TB patient is diagnosed by simple sputum test and the anti-TB medicines are provided to patient and he/she has to take those medicines in presence of a health staff, community volunteer or accountable person until patient declared cure.

(Kumar: page 16)

It is the proven cost-effective strategy to control TB by giving drugs to patients under direct observation of health workers/treatment supporters. DOTS has been found 100 percent effective to cure TB and prevent multi-drug resistance. Only DOTS ensures cure of diagnosed TB patients. It can also prevent relapse and death. (Saarc Center: 2003, Page 7)

Figure 7.2: Heard and Known about DOTS

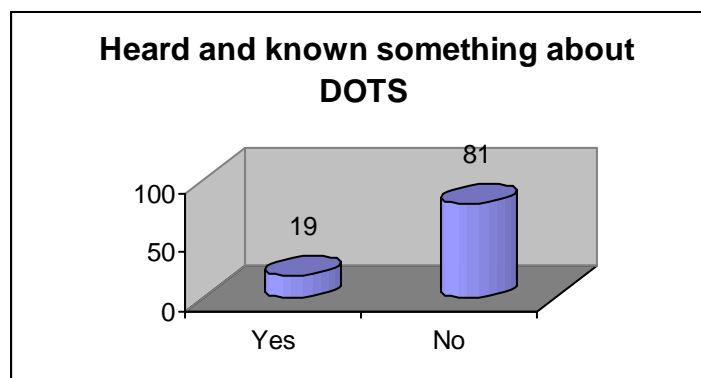


Figure 5 refers that most of the respondents (81%) had not heard about DOTS. Remaining 19 percent of them had heard about it but most of them were unable to explain the exact meaning of DOTS.

Therefore, it is necessary to increase public awareness by mobilization of community together with increase accessibility to quality services will improve TB control programme.

7.2 Case studies

This section includes case study of the patients suffering from TB; their hardships, feelings, knowledge, care seeking behaviour and socio-economic and cultural aspects.

Case 1

Mr. Ran B. Thapa (name changed) temporarily resident of Tansen; Magar; Hindu is 59 years old and has 3 family members with him. He is literate and he has land only enough for 3 months. He was retired from job (police). His source of income is only pension of his previous Job. He earns almost 50000 from his pensions. He had to spend all of his earnings for his livelihood. His two sons died from heart problem and he spent most of his property for the treatment of his sons. He had the habit of smoking and had taken alcoholic drink regularly before getting ill. First of all he was suffering from weakness, weight loss and fever for two weeks and came to private medical Hall (Dasharath Medical Hall). The medicine from that place didn't work. He became so serious that he had to reserve Jeep to go to another private medical hall (Ronit Pharma). The second time from private medical Hall he was referred to the public Hospital. He had spent almost 6000 rupees to diagnose. He had been taking medicines free of cost from Palpa Hospital. According to him TB is caused by drinking and smoking. Weakness, loss of appetite and fever are the main symptoms. He didn't know where the TB diagnostic and treatment facilities were available

before getting TB. He was getting better and had believed he would be cured from there. He thinks the disease is communicable but he didn't know exact how TB transmits from one person to another.

Family members had known about his disease he wants to tell about his disease only with his close friends. He wants to hide the disease in his society.

He feels different behavior from his friends, so he feels alone socially and mentally.

He had to come by Jeep daily to take medicines because he was serious at that time. At the time of interview he was able to walk. It takes almost 2 hrs to come to this hospital. The staff of the hospital had told him he had to come for 6 months to complete treatment. He is somehow satisfied from the service of the hospital.

Case 2

Tulsi (name changed), 22 years old, is resident of originally Kaseni VDC of Palpa district. She had been staying in Tansen because of her daughter's education and her treatment. She had just passed 8th grade and fall in love and married. After marriage, she had to drop her study. Her main source of income is her husband earnings. Her husband is working in Saudi Arabia. She was staying in Tansen Bazar in a room monthly rent Rs.1200. She didn't know about the cause of TB. She had not any idea about the cause and transmission of the disease. She didn't know where TB was diagnosed and treated before she suffered from TB. She had no any knowledge about its curability, treatment duration and method of prevention before diagnosis of her disease. After her diagnosis and during treatment health workers had told her about it. According to her she did not maintained any secrecy with her friends but was hesitant to tell about her disease in the society. She didn't feel any different behaviour from her family and her husband knows about her disease. Her father in law and mother in law were also treated as TB previously.

She was suffering from cough for one month, and evening raising fever for one month. At first she went Suraj Medical Hall and treated as UTI spent 6200 and her disease didn't improve and went to Ronit Pharma. At the second place she had done video x-ray, Chest x-ray and sputum microscopy and again she spent almost 5000. After that she came to the government hospital and treated as TB patient.

Case 3

Muna (name changed); 18 years old; permanent resident Masyam, Palpa; but for the study purpose she had been living in Tansen with her mother and two brothers. She is unmarried. Her father has worked in Indian Army and he earns enough for family according to her.

She was suffered from pneumonia and cured at the age of 11. She had been suffering cough chest pain for more than 2 months and went United Mission Hospital, Palpa. UMH again diagnosed as chest infection. UMH suggested the operation of chest to remove unnecessary tissues from her lungs and referred to Bharatpur Hospital. But she went India because her father is working in Indian Army, Rajasthan for the operation of her lungs. Rajasthan Army hospital could not treat her and again referred to Delhi Army Hospital. Delhi hospital started treatment and she had taken medicine for few days. During the treatment period she was diagnosed as pulmonary TB. Indian Army Hospital had given the diagnostic and treatment facility free of cost. Almost 30000 rupees expended altogether in Nepal and India including travel cost. She started the ATT from India and taken for one month. After one month of treatment she returned back to Nepal for treatment. She had no idea where the treatment facility is available; so she went to Shubham Pharma for consultation. This private medical hall referred her to Palpa hospital and continued her treatment. She was getting better from the medication.

After becoming ill and diagnosed as PTB she tried to learn about TB and had knowledge a little bit about TB, its cause, mode of transmission, treatment duration etc.

According to her, smoker and drinkers are at risk of TB; similarly polluted environment is also responsible of spread of TB. Polluted environment is the main cause of her illness; she feels so. She didn't have any problems from her family. She shared about her illness only of her close friends. She did not want to share about her illness all of her friends. Her villagers had not informed about her disease. She expressed verbally has not treated different behavior from her friends but her facial expression showed a little bit different. It seemed there was a hidden anxiety about her future in her face.

She had accepted some people who didn't know about the disease want to stay away from her. In the statement "In our society, it is difficult to get married for an unmarried women who got TB" she replied I don't know about it and looked serious.

Case 4.

Megh (name changed); 49 years; permanent resident of Tansen; has three members in the family these days. His wife had gone to Saudi Arabia to solve the economic problems. His two sons (older son was just 16, read in 7th grade and youngest son just 12 years and read 5th grade) was depending on him. He has owning no land except a kachhi house. He earns less than 25000 in a year by his profession (He is a cobbler). This income is not sufficient for him. His wife was not sending him money till the date.

He had been suffering from the disease for 3 months. He went private clinic Shubham Pharma and taken medicine. They didn't suspect TB. He spent almost 1200 rupees there. He didn't become well and went united mission hospital. At that time he was diagnosed as Typhoid, Jaundice and TB. He was mentally irritated at that time, and didn't want to talk every body. He didn't know the exact cause of TB. He had the thought that TB is not caused by germs and it doesn't transmit; it occurs itself by smoking and drinking alcohol.

He had the knowledge of place of treatment because his friend was already suffered by TB and treated from the hospital. He had not told his neighbours about his disease. He did not show any interest to tell the reason why he wanted to hide his disease. According to him, people would become alone when they get TB; people are interested to stay away from him who know that he is suffering from TB and being a TB patient he was reputed very normal in his society.

Case 5.

Maya Reshmi (name changed); 26 years old, permanent resident Khanigaun, Palpa.

She was staying at that period at Tansen where her mother lived. She had passed 8th grade. She is married and has got a son. After she became a widow, she faced so many financial problems. She has got a small piece of land and enough only for 3 months. She had to do laborious works. Sometimes her mother helps her financially.

Her father was suffered from TB 5 years ago; he was so serious that he had to be admitted at Palpa hospital but was so late, he died. Her husband had been working in India Gujarat, but became ill and diagnosed as TB patient and Cancer both and died at Ashadh 2067.

She had been suffering from illness for three months with cough, chest pain, and fever. She went to UMH and at the first time she is diagnosed other disease; her disease was going worsening

and again went there. The hospital had taken x-ray and diagnosed as TB and referred to government hospital. She had spent altogether six thousands for her diagnosis.

Even two members died with TB she had got few knowledge about TB. The cause, mode of transmission, diagnosis and methods of prevention she didn't know. According to her eating food together is the main mode of transmission. Her some perceptions about the disease were: Coughing for 2 weeks or more is not a serious matter; there is no harm of getting TB disease in her society to others. TB is curable disease and if not taken regular treatment TB again relapses.

She had not told about the disease to her friends she refused to take her photograph and neighbours. She accepted that people would become alone when they get TB and it is difficult to get married for an unmarried young lady who got TB.

Case 6.

Tulki (name changed), 62 years: permanent resident of Khaliban VDC of Palpa district.

Her daughter had fall in love and gave birth of a child and later her lover didn't accept. Her daughter had to stay in Tansen to fight in the court and started some laborious work in saw factory. Tulki also came to Tansen to take care of her daughter and her small child. Economically they were facing so hard time; sometime they had to eat one time in a day. She had been also suffering from gastritis. After facing 6 month long illness finally, party activists admitted her to United Mission Hospital and after few days diagnosed as TB. The hospital has shown 17500 bill but finally hospital didn't charge considering of her socio-economic status.

She is illiterate and didn't know about the disease. She had the knowledge that she had to take medicine regularly to get rid of TB. She had the feeling that TB is somehow related of the fate of a person. Many persons did not know about her disease because she was staying in rented room. She also didn't want to disclose her disease everyone because she had the fear that people will hate her.

7.3. Patient's Perception:

According to the cases described in 7.2 the findings are given below.

Initial actions- often numerous visits to local pharmacies before properly diagnosed. The local explanatory model of tuberculosis, particularly its causes- the disease is commonly held to be closely connected with too much alcohol and smoking. Social stigma, separation, even in the

cases of non-infectious tuberculosis is serious. Treatment adherence- impressively regular, yet at a great cost for many patients. Economic consequences; in spite of medication and treatment being free there are numerous expenses.

Most of the patient had poor level of knowledge about TB. Poor perception of patients about the cause and severity of diseases, and its economic, health and social impacts was found significantly associated with longer delay in diagnosis and treatment of TB. Most of the patients highly stigmatized and most of them were found seeking care of TB only after one or more months later of onset of symptoms they recognized.

This study found that most of the patients had visited private health care providers for the first time. It further supports the urgency of much better understanding the role of private sector in TB control, and a good option to develop effective PPM especially with a good network.

SUMMARY AND RECOMMENDATION

8.1. Summary of Findings

a. Socio-Demographic characteristics of the study Population

There is no direct relation of caste/ethnicity with tuberculosis. There is the relation with socio-economic and cultural conditions with tuberculosis. Most of the study subjects were age group of 21-30 years (28%). Most of the respondents are age between 21 to 50 years (73%). This indicates that the respondents are matured and economically active group. The percentage of female respondents is high. More than 55% respondents were female in this study. The highest numbers of respondents were Kshetries (30%) and second highest are Magars (26%). There were remarkable numbers of respondents of Dalits (18%) in the study area. Most of the respondents were well educated (56%). The highest 58.3 percent of the total respondents have five to eight family members in their family

b. Economic status of study Population

TB imposes a considerable economic toll on patients and their families. TB thrives in conditions of poverty and can worsen poverty. Most of the respondents (63%) live in temporary (Kachchi) houses and remaining 37 percent of the total respondents live in Permanent houses. 45.8 percent of the total respondent's family income is more than 100000 annually. 56.6 percent of the respondent's family do not face any difficulties for the treatment if any family member becomes ill in the family and remaining 43.3 percent of the respondent's family faces difficulty for the treatment of their family members.

c. Health Characteristics

In the study period among 120 households 98 households were free from illness and other 22 households had some signs of illness. In this community, when they became sick or any kind of illness their practice of treatment is allopathic treatment practice. Ninety percent of the families vaccinated their child with BCG but 10 percent of the families did not vaccinate their child, due to lack of knowledge. Twenty eight percent of household have one or more family members have the habit of smoking and 30 percent of households have one or more family members have the habit of alcohol drinking. 6.7 percent of the households already were affected by tuberculosis.

e. Knowledge about symptoms and disease:

Majority of the respondents believed that the TB is caused by smoking and alcohol consumption (44%) followed by germs (37.5%). Only 24 percent of respondent has the proper knowledge about signs and symptoms of TB. Almost half of the respondents had said that TB can be diagnosed by sputum examination. Most of the people (97%) were found to be understood that TB can be cured.

F. Perception about symptoms and disease:

Thirty percent of the respondents had perceived that there is no harm of getting TB in their society, where almost two third (64%) had positive perception. Most of the respondent (87.5%) perceived that if one member of a family gets TB, it has the chance to transmit the disease to other members of the family. 90% of the respondents had a good perception that TB is a communicable disease; similarly 93% of respondents had perceived that TB is a fatal disease, if untreated.

G. Belief, attitude and stigma about TB

More than 53 percent of the people hated TB patient. They were not interested to help TB patient because of the negative perception about the causes of disease. Most of the TB patients (66%) want to hide the disease. Most of the respondents (73%) had thought TB patient want to hide their disease because of fear of being hatred. 77 percent of respondents had the belief that people would become alone when they got TB. Almost two-third was found interested to stay away from their neighbours and friends when they got TB. 59

percent of the respondent had the belief that TB patients are reputed very low in their family as before getting the disease. More than 73 percent interviewed had a belief that it would be difficult to get married for an unmarried young woman if she got TB. More than 86 percent of the respondents did not blame God for the cause of TB.

H. TB service Efficacy

Maximum respondents (69%) had the knowledge about TB services availability. It was found that 86 percent of respondents who had knowledge of TB treatment services are free of cost. 45 percent of the respondents had the thought that the leading cause to be defaulted in treatment is feeling better from the disease after some time of treatment.

Most of the respondents (81%) had not heard about DOTS.

I. Patient's Perception:

Most of the patient had poor level of knowledge about TB. Many patients highly stigmatized and most of them were found seeking care of TB only after one or more months later of onset of symptoms they recognized. Many patients had visited private health care providers for the first time.

8.2. Conclusion

Although all ranks of the society get the disease, the poor are at greatest risk, due to being in contact with sufferers. In addition, because of poor nutrition their immune system is weakened. These people once identified, suffer considerable stigma and discrimination on account of their disease leading to delay in diagnosis and treatment ultimately being a major factor on TB control.

Local belief about tuberculosis and its cause will obviously vary in different areas, different cultures and even different groups of population in the same area.

Religion, caste, tribe or level of education, level of socio-economic status may influence people's ideas. In this study, many people believe that tuberculosis is due to excessive alcoholic drink and smoking cigarettes. In other places people may believe that TB is due to evil spirits which have got into the patient. Even where people know that TB is an infectious disease, they may think a particular person has got the disease because he has been bewitched. Some other people thought that the symptoms were often due to sin, such as adultery.

From this study, people are found of ashamed of the disease. They feel that it is a disgrace to the family. If a daughter gets TB, the family may be afraid that they will never find her a husband. This idea may remain even after she is obviously cured. It is a common idea and real problem in the society in which we live or work. The idea and belief disappears when the community realizes that good treatment is easily available, it is cost effective and always cures the disease.

From this study it seemed that people in studied area are still not aware about the real causes of the disease, its transmission, susceptibility and preventability of the disease. Knowledge is an essential component of self-care, and so is the growing perspective of need to acquire knowledge concerning the risk of TB before they can successful in preventing its spread, and seeking health care. Lack of awareness of risk posed to the community by a sputum positive pulmonary case is and impediment in the control of TB.

The majority (63%) of respondents had the poor knowledge about TB. And poor knowledge about TB causes significant delay in seeking TB care. The awareness raising programmes aimed at minimizing the severity of transmission may also reflect a coping mechanism, rather than longstanding ideas about the disease or lack of information.

The knowledge about the diagnostic and treatment facilities is important to get the services earlier. So, it is always acceptable to be informed where the diagnostic and treatment health facilities are available.

The stigma attached to TB in most cultures may make people unrevealing their illness, with the risk of exposing to family members, friends, neighbours, employers etc. and, making the health seeking delay and often poor treatment completion. In this study, stigma was found as a reason for people with TB to keep their disease secret. It is desirable to address the TB problem early enough, and so reduce the impact of infections from epidemiological and socio-cultural perspective.

Poor perception of patients about the cause and severity of diseases, and its economic, health and socio-cultural impacts was significantly associated with longer delay. It was found that most of the TB patients had visited private health care providers for the first time.

It is well understood that besides the agent factor (Tubercle bacilli) the social factor, cultural factor, economic factor, service delivery factor and environmental factor may play equally important role in causation and spread of the tuberculosis disease. Therefore, a purely technical

approach for TB control is inadequate. The effectiveness of TB control programme depends more on socio-economic and cultural factors than the technology of diagnosis and treatment.

8.3. Recommendation

Without regular attention, successful programmes become neglected and quality drops, and things start to go wrong. Sustainability can be ensured through regular drug and logistic supply; working through consensus; regular meeting and coordination; delegation and decentralization; mutual respect; transparency; ownership development for all stakeholders; and continuous dialogue.

1. The belief with regard to predisposing factors, natural and supernatural causes of TB can be changed through Health Education and Health Promotion programs. The most important aspect of belief, knowledge and attitude which must be changed by the Health Education Program is the acceptance by the community concerned, and this can only be satisfactorily achieved by ensuring the participation of the community. We should educate opinion leaders, religious leaders, faith or traditional healers so that patients and their families do not suffer from this additional social problem and mental anxiety.
2. As revealed by the study, there is an urgent need to develop a strategy with defining concrete activities to reduce stigma and discrimination associated with TB. The strategy should focus on the following activities which include; raising awareness to different groups and specific patient education, enable the patient to develop confidence in disease treatment, maintaining confidentiality, social rehabilitation/support to protect earnings, promoting family and community support.
3. More researches should be done about social and behavioral determinants of disease, including poverty, environment, culture, and stigma.

Annex 1

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Department of Sociology/Anthropology

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Interview Schedule

(Community People)

A. Demographic Profile

1. Age (in Yrs.):

2. Sex:

3. Permanent resident:

a. Local

b. Non-local

4. Last name (Family name):

5. Caste:

a. Brahmin

b. Kshetri

c. Magar

d. Newar

e. Kami/Damain/Sarki

f. Others

6. Religion:

a. Hindu

b. Bauddha

c. Islam

d. Christian

e. Others

7. Education

a. illiterate

b. literate

c. Primary

d. secondary

e. Above

8. Marital status

a. Married

b. Unmarried

9. No. of family members:

B. Economic Profile

1. House ownership

a. Yes

b. No.

If yes, what type of house? (Specify)

2. Land ownership

a. yes

b. No

If yes, how many ropani.....?

3 Source of income of your family?

- a. Business
- b. Service.
- d. Farming and cultivation
- e. Others.....

4. What is your family's annual income?

- a. less than 25000
- b. 25000 -50000
- c. 50000 -10000
- d. more than 50000
- d. don't know

5. income Source of your family

- a. Sufficient for year
- b. More than enough.
- c. Not sufficient

6. Do you have difficulty paying for health care services of your family member at the time of illness?

- a. yes
- b. No
- if yes, then How do you manage the cost of treatment?.....

7. Available Source of Communication?

- a. Radio
- b. Television
- c. Newspaper
- d. Others.....

C. Health Profile.

1. Do you have any kind of illness in your family now? a. Yes b. No.

If yes, what kind of illness?

2. Where do you go for treatment of any ailments?

- a. Government Hospital
- b. UMH
- c. LMC
- d. Medical Hall
- e. Ayurvedic Aushadhalaya
- d. Traditional Healers

3. BCG Vaccination for Child?

- a. Yes
- b. No
- If No, the reason a. Ignorance b. Laziness

4. Is there a member in your family, who has coughed more than 2 weeks?

- a. Yes b. No.
- 5. Are there smokers in your family?
 - a. Yes b. No.
 - If yes, how many members...
- 6. Are there any members who take Alcohol regularly in your family?
 - a. Yes b. No
 - If yes, how many members...
- 7. Are there any members who had taken ATT before or are taking now?
 - a. Yes b. No
 - If yes, interview with the key informants format to the TB patient.

D. Knowledge and attitude

- 1. What is the cause of TB?
 - a. Germs b. Drinking and Smoking c. Stale
 - foods and dirty environment d. heredity
 - e. witch/ evil/eye f. Hard work
 - g. Don't know h. others (Specify).....
- 2. What are the Sign/Symptoms of TB?
 - a. Blood in Sputum b. Weight Loss c.
 - Fever d. Cough e. Chest Pain
 - d. Don't know f. Others.....
- 3. How does TB transmit?
 - a. Taking food together b. Nearby Coughing and Sneezing
 - by TB patients. c. From dirty water.
 - d. Don't Know e. Others (Specify).....
- 4. How is TB Diagnosed?
 - a. Blood Exam b. Stool/Urine Exam
 - c. Basis of Signs and Symptoms d. Sputum Exam
 - e. X-ray f. Others.....
 - g. Don't know.

5. Is TB curable?

- a. Yes
- b. No.

6. How is TB cured?

- a. Worshipping god/goddess
- b. Traditional Healing (Jharphuk)
- c. Ayurvedic Medicine
- d. Allopathic Medicine
- e. self-recovery
- e. Others (specify)
- f. Don't know

7. How can we prevent from TB?

- a. Using masks
- b. Isolation of patient
- c. BCG Vaccination for Children.
- d. Early diagnosis and proper treatment.
- e. Others.....
- f. Don't know.

8. What did you think/feel about the following statements?

| Statements | Yes | Not sure | No |
|---|-----|----------|----|
| I. Coughing for 2 weeks or more is not a serious matter, which is most of the time self recovered. | | | |
| II. There is no harm of getting TB disease in your society | | | |
| III. If one member of a family gets TB, there is high chance of develops TB to other members. | | | |
| IV. TB is communicable disease. | | | |
| V. TB is fatal disease, if untreated. | | | |
| VI. There is no chance of getting cure from TB, once we got it. So, going for treatment is worthless. | | | |

E. Socio-Cultural beliefs

1 What are the attitudes towards TB patients?

- a. People love TB patents.
- b. People hate TB patients.

- a.If people love TB patients, what are the reasons?
- a. To care them is everyone's duty.
 - b. They are in critical condition.
 - c. It is religious work.
 - e. Others.....
- b. If people hate TB patients, what are the reasons?
- a. TB is the result of curse of sin.
 - b. They are smokers and drunker.
 - c. They can transmit disease to other.
 - d. others.....

2. Do you think some TB patient want to hide their disease?

- a. Yes
- b. No

If yes, why do some TB patients want to hide their disease to the community people?

- a. Fear of being hatred.
- b. Fear of humiliation
- c. not prestigious
- c. lack of knowledge about TB.
- d. Others.....

3. What did you think/feel about the following statements?

| Statements | Yes | Not sure | No |
|--|-----|----------|----|
| I. People would become alone when they get TB. | | | |
| II. People are interested to stay away from TB patients. | | | |
| III. TB patients are reputed very normal in your family. | | | |
| IV. In our society, it is difficult to get married for an unmarried young lady who got TB. | | | |
| V. TB is the disease of poor only. | | | |
| VI. In fact, TB is caused as the punishment for sinful acts. | | | |

F. Effectiveness of DOTS Policy.

1. Do you know where are the services of diagnosis and treatment is available?

- a. Yes
- b. No.

If yes, state the name of the facility and place of service.

2. Do they have to pay money for their diagnosis and treatment?

- a. Yes
- b. No.

- c. Don't know.
- 3. What difficulties may influence to complete the treatment of TB for 6 to 8 months?
 - a. Patient may think TB is not curable.
 - b. Feeling better from the Disease.
 - c. Long period of treatment
 - e. Difficult to go everyday to take medicine.
 - f. Bad behavior of Health workers.
 - g. Lack of money.
 - h. Don't know
 - i. others.....
- 4. Have you ever heard and know something about DOTS?
 - a. Yes
 - b. No.
- 5. How satisfied are you with the health service provided by the Govt. health facility?
 - a. Satisfied.
 - b. Neither satisfied nor dissatisfied.
 - c. Dissatisfied.
 - d. Have not been there ever.

Annex 3: Patient Charter

Patients' Charter for Tuberculosis Care

Short Edition 2010

The Charter (PCTC) outlines the Rights and Responsibilities of People with Tuberculosis. It empowers people with the disease and their communities through this knowledge. Initiated and developed by patients from around the world, the

Charter makes the relationship with health care providers a mutually beneficial one. Endorsed by the WHO, Stop TB Partnership, The Global Fund, governments and civil society organizations, the full edition* of the Charter is the document of reference, while this short edition is a simple summary, to better enable the TB community to:

Know Your Rights and Fulfill Your Responsibilities.

PATIENTS' RESPONSIBILITIES

You have the responsibility to:

Share Information

- Inform healthcare staff all about your condition
- Tell staff about your contacts with family, friends, etc.
- Inform family and friends and share your TB knowledge

Follow Treatment

- Follow the prescribed plan of treatment
- Tell staff of any difficulties with the treatment

Contribute to Community Health

- Encourage others to TB-Test if they show symptoms
- Be considerate of care-providers and other patients
- Assist family and neighbors to complete treatment

Show Solidarity

- Show solidarity with all other patients
- Empower yourself and your community
- Join the fight against TB in your community

Help turn these Rights & Responsibilities into realities. Join the mobilization for the implementation of the Patients' Charter. Visit: www.patientscharter.org

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PATIENTS' RIGHTS

You have the right to:

Care

- Free and equitable care for Tuberculosis (TB)
- Quality care meeting the International Standards (ISTC)
- Benefit from Community Care Programs

Dignity

- Be treated with respect and dignity
- Social support of family, community and national programs

Information

- Information about available care services
- Be informed about condition and treatment
- Know drug names, dosage and side effects
- Access to your medical records in local language
- Have peer-support and voluntary counseling

Choice

- A second medical opinion, with access to records
- Refuse surgery if drug treatment is at all possible
- Refuse to participate in research studies

Confidence

- Have privacy, culture, religious beliefs respected
- Keep your health condition confidential
- Care in facilities that practice effective infection control

Justice

- File a complaint about care, and to have a response
- Appeal unjust decisions to a higher authority
- Vote for accountable patient representatives

Organization

- Join or organize TB patient clubs and NGOs
- Participate in policy making in TB programs

Security

- Job security, from diagnosis through to cure
- Food coupons or supplements if required
- Access to Quality Assured drugs and diagnostics

*This edition of the Patients' Charter has been made possible by the generous support of the American people through the United States Agency for International Development (USAID). TB CTA, *Full edit.: www.worldcarecouncil.org/content/patients-charter-tuberculosis-care, and the World Care Council.*

(Source: WHO, Patient Charter, 2010)

Annex 4

THE STOP TB STRATEGY

VISION

A WORLD FREE OF TB

GOAL

To dramatically reduce the global burden of TB by 2015 in line with the Millennium Development Goals and the Stop TB Partnership targets

OBJECTIVES

- Achieve universal access to high-quality diagnosis and patient-centred treatment
- Reduce the human suffering and socioeconomic burden associated with TB
- Protect poor and vulnerable populations from TB, TB/HIV and multidrug-resistant TB
- Support development of new tools and enable their timely and effective use

TARGETS

- MDG 6, Target 8: Halt and begin to reverse the incidence of TB by 2015
- Targets linked to the MDGs and endorsed by Stop TB Partnership:
 - By 2005: detect at least 70% of new sputum smear-positive TB cases and cure at least 85% of these cases
 - By 2015: reduce prevalence of and deaths due to TB by 50% relative to 1990
 - By 2050: eliminate TB as a public health problem (<1 case per million population)

COMPONENTS OF THE STOP TB STRATEGY

1 PURSUE HIGH-QUALITY DOTS EXPANSION AND ENHANCEMENT

- a. Political commitment with increased and sustained financing
- b. Case detection through quality-assured bacteriology
- c. Standardized treatment with supervision and patient support
- d. An effective drug supply and management system
- e. Monitoring and evaluation system, and impact measurement

2 ADDRESS TB/HIV, MDR-TB AND OTHER CHALLENGES

- Implement collaborative TB/HIV activities
- Prevent and control multidrug-resistant TB
- Address prisoners, refugees and other high-risk groups and special situations

3 CONTRIBUTE TO HEALTH SYSTEM STRENGTHENING

- Actively participate in efforts to improve system-wide policy, human resources, financing, management, service delivery, and information systems
- Share innovations that strengthen systems, including the Practical Approach to Lung Health (PAL)
- Adapt innovations from other fields

4 ENGAGE ALL CARE PROVIDERS

- Public-Public, and Public-Private Mix (PPM) approaches
- International Standards for TB Care (ISTC)

5 EMPOWER PEOPLE WITH TB, AND COMMUNITIES

- Advocacy, communication and social mobilization
- Community participation in TB care
- Patients' Charter for Tuberculosis Care

6 ENABLE AND PROMOTE RESEARCH

- Programme-based operational research
- Research to develop new diagnostics, drugs and vaccines

