CHAPTER III

CONCEPTUAL FRAMEWORK

3.1 Study Perspectives

The terms theory and model are often used interchangeably. Theories specify the determinants and mechanisms governing the phenomena of interest (Bandura, 1986). Theories are basically concerned with very general and global classes of behavior and do not deal directly, as conceptual models do, with specific types from the discipline focused perspectives i.e. biological, sociological. Theories consist of one or more general and logically interrelated propositions offered to explain a class of phenomena (Bauman, 1980).

It has been observed that a conceptual model can be established by more than one theory and conceptualized multilevel i.e. Micro to Macro and the other way around (Bandura, 1986). A conceptual model as a set of concepts believed to be related to a particular public health problem (Earp and Ennett, 1991). From the above-mentioned perspectives, it can be said that a theoretical framework provides the substantial basis for practice. It assists in the explanation of how individuals and groups make health-related decisions.

The literature argues that the utilization of TB services varies in the developing world. Both access and utilization has been major public health concerns in countries like Nepal. In order to identify the reliable and valid findings, the National Tuberculosis Center (NTC) has proposed two objectives for all research: a) To improve the quality of care for people with Tuberculosis in Nepal and b) To assist the NTP in planning and implementing effective TB control (NTC, 2001). In the light of the prioritized objectives of NTC, the study has been focused to promote access to and utilization of TB services in the study areas.

Different theories have been proposed to ensure that there are both clear perspectives on the problem and its route of solution. The Health Belief Model refers to the major factors that influence the likelihood of a person adopting a recommended preventive health action. First, they must feel personally threatened by the disease: for example, they must feel personally susceptible to a disease with serious or severe consequences. Second, they must believe that the benefits of taking the preventive action outweigh the perceived barriers to preventive action (Fishbein summarizing Becker, 1974; 1981). The theory of reasoned action, social cognitive theory and nine other theories and the models have been reviewed to determine their applicability in this study. The Table 3.1 lists the theories and models that were reviewed during the study.

Table-3.1: Theories and Models

Theories	Sources
1. Precede- proceed	Theory at a Glance: A Guide for Health Promotion Practice. National Institutes of Health, National Cancer

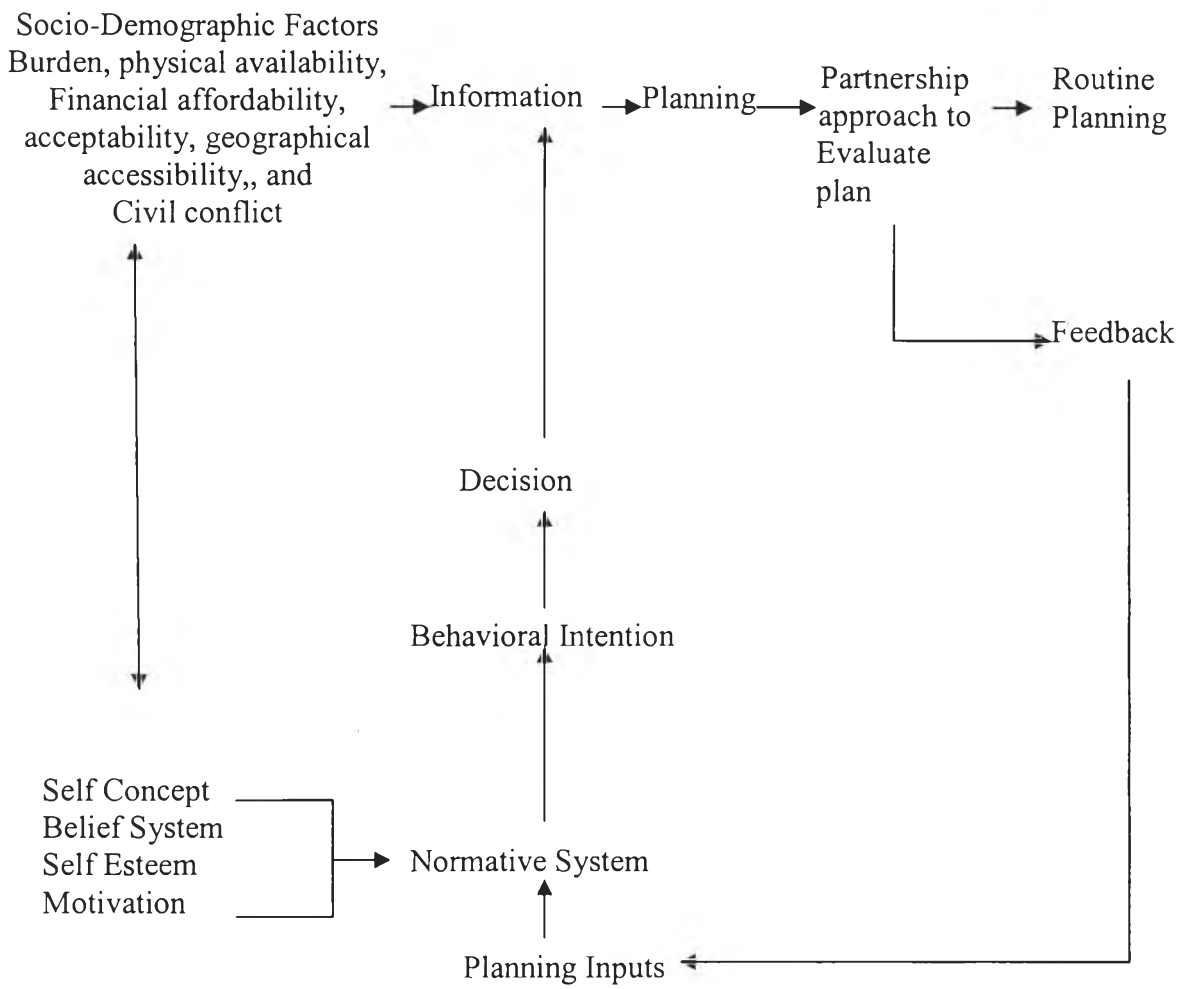
	Institute USA.
2. Health belief model	Fishbein summarizing Becker [1974, 1984], Janz and Becker [1984], Rosenstock, Strecher and Becker [1994]page 3 in Developing Effective Behavior Change Interventions, Fishbein M, Univ Of Illinois
3. Theory of reasoned action	Fishbein summarizing Fishbein and Ajzen [1975], Ajzen and Fishbein [1980] Fishbein, Middlestadt and Hitchcock [1991], page 4 in Developing Effective Behavior Change Interventions, Fishbein M, Univ Of Illinois
4. Theory of subjective culture and interpersonal relation	Fishbein summarizing Triandis [1972, 1977, 1980], page 4 in Developing Effective Behavior Change Interventions, Fishbein M, Univ Of Illinois
5. Social cognitive theory	Fishbein summarizing Bandura [1986, 1989, 19991, page 3 in Developing Effective Behavior Change Interventions, Fishbein M, Univ Of Illinois
6. Community-level structural Model	Alternative Models of Behavior Change - by Robert Hornick, Annenburg School for Communication, Working Paper 131, 1990, p 3/4
7. Behavior change spiral	The Behavior Change spiral from "What do they want us to do now?" AFAO 1996
8. Cultivation theory of mass media	Health Communication - Lessons from Family Planning and Reproductive Health, Johns Hopkins School of Public Health, Center for Communication Programs, 1997, by Phyllis Tilson Piotrow, D. Lawrence Kincaid, Jose G. Rimon II, and Ward Rinehart. P. 22
9. Diffusion model	Communication and Community Development for Health Information: Constructs and Models for Evaluation" by John E. Bowes, Review prepared for the National Network of Libraries of Medicine, Pacific Northwest Region, Seattle, December 1997. Jbowes@u.washington.edu

After the review of above-mentioned theories the Health Action Model has been modified and proposed for this study.

a. Health Action Model

The Health Action Model (HAM) serves as the theoretical basis to determine the various factors governing health decisions (Tones, 1987). HAM describes the interaction of knowledge, belief, values, attitudes, drives and of normative pressures and seeks to show how these relate to individual's intention to act.

Figure- 3.1: Health Action Model



(Health Action Model, modified from Ewles and Simnett 1999)

Based upon the literature (Lee, 2001; Marc, 2001; Kumar, 1998) it can be proposed that burden, physical availability, financial affordability, acceptability, geographical accessibility and civil conflict may assist to produce the information to be used by district health facilities. After implementation of the study in the field and

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financial situation have also influenced the decision as to what research design is to be used (IDRC, WHO, 1991). Based upon these, a cross sectional study design was chosen for this study.

3.4 Rationale for the Study Approach

The cross-sectional study design deals with the surveys of the situation existing in a given group or population at a given time (IDRC, WHO 1991). A comparison of the cross-sectional design with the other two commonly used study designs (cohort and case control) is shown in Table 3.2.

Table-3.2: Comparison of Three Research Design

Attribute	Study Designs		
	Cross-Sectional	**Cohort**	**Case Control**
Classification of Population	Population with no exposure and no disease, with exposure and no disease, no exposure and with disease and with exposure and with disease	Population free from condition or disease	Cases with the condition, with or with out the characteristic and controls
Sample represented	Survivors at a point or period in time	Non-diseased	Uncertain: the source population of the cases are unknown
Temporal sequence	Retrospective; relation revealed at a point or period in time	Prospective or retrospective	Retrospective
Function	Describes association between exposure and disease simultaneously	Compare Incidence rates in exposed and unexposed	Compare prevalence of exposure in case and control
Outcome (comparison)	Prevalence of disease in exposed and unexposed	incidence of disease in exposed and unexposed	Prevalence of exposure in cases and controls
Risk measurement	Prevalence ratio	Relative and attributable risk	Odds ratio
Evidence for causality	Only suggestive	Strong	Need more careful analysis
Bias	Difficult to manage	Easy to manage	Needs more efforts to manage

(Source: IDRC, WHO 1991)

The descriptive study approach is concerned with factors associated with health or disease such as exposure to environmental factors, socioeconomic attributes and demographic characteristics of the given sample population.

A cross-sectional study deals with the exposures and outcomes at the same time. The data will be obtained from the study subjects and will provide a snapshot of the poor access and utilization of TB services in study areas. The observation that the cross-sectional design was less time consuming and less expensive than the other study

was the motivation to select this study designs was the motivation to select this study design. Due to the civil conflict situation we cannot spend a long time to define each factor, the cross-sectional study is useful in studying the several factors and outcomes at the same time. Moreover it is helpful in program planning and designing (Natchaporn, Wiziz, 2002).

Cross-sectional study can be carried out in a total target population or in a representative sample. In this study, two districts were purposively two selected because selected districts were needed to represent the parts of Nepal with or without civil conflict. For the purpose of this study simple random sampling was used to determine the study subjects. Interview with structured questionnaire and focus group discussion instruments were used.

3.5 Conceptual Framework

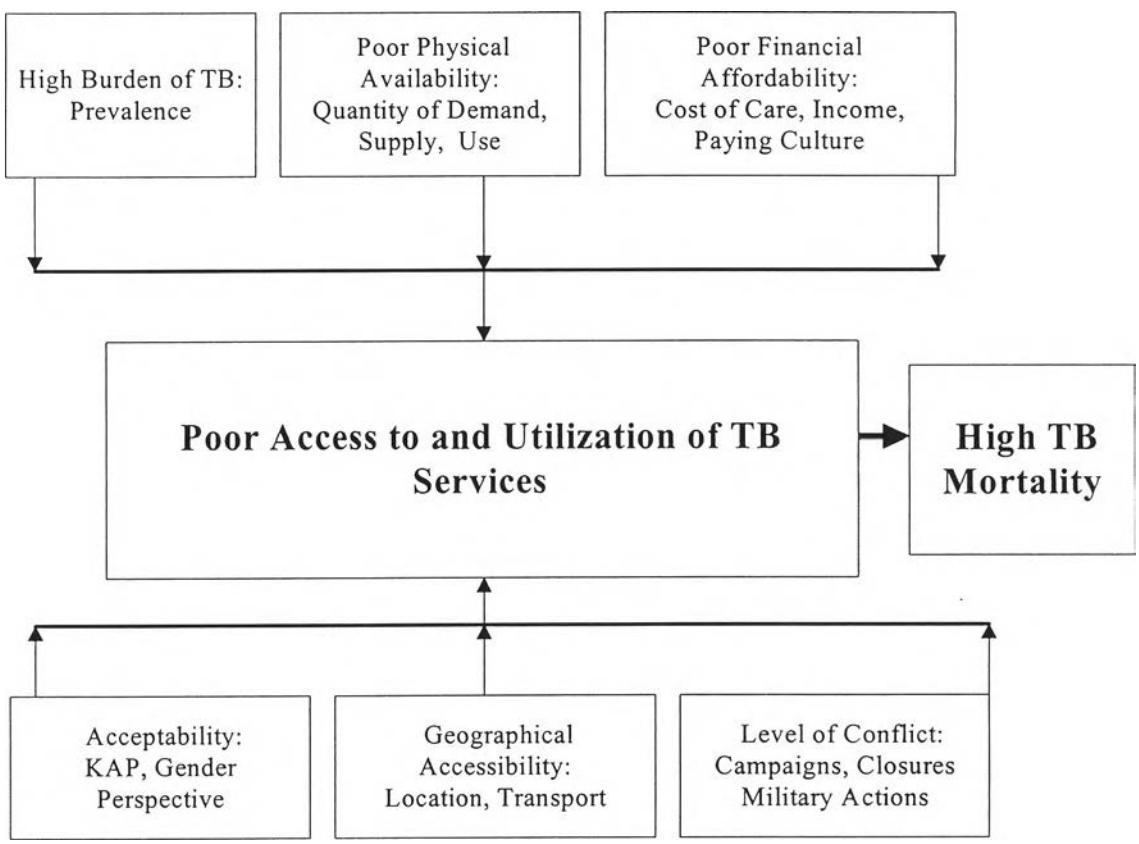
Several studies (NTC, 2001; WHO, 2002; Bam, 2002) have pointed out that access to and utilization of TB services has been influenced and determined by the various factors. WHO (2001) has been prescribed 5 pillars for DOTS: 1) political commitment, 2) diagnosis by microscopy, 3) uninterrupted drug supply, 4) daily-observed treatment and 5) accountability. The prescribed pillars are being threatened by various factors i.e. social, cultural, economical, medical, service and political.

3.5.1 Causes and Consequences

The organization of DOTS in mountain, hills, and in the private sector poses major challenges in Nepal (NTC, 2001). The constraints include: inadequate

microscopy services; logistics of drug supply; implementation in urban areas (where the lower units of public health do not exist i.e. community health volunteers); training of health workers and inadequate supervision (WHO SEARO, 1998). Increasing budget for the military and the declaration of the state of emergency nationwide indicates that the political commitment still has to be improved.

Figure -3.2: Causes and Consequences of Poor Access to and Utilization of TB Services



Source: NTC, 2001; DoHS, 2001; WHO, 2002; Lee, 2001; Kumar, 1998; WDR, 2001; and Gustafson, 2001, Stebbing 1999, Aliso 2002)

According to NTC the geo-politics, socio-economic, scocio-economical and cultural barriers still pose challenges to the control TB in Nepal (NTC, 2001). The major challenge pointed out in NTC's report 2001 is DOTS in the hard to access areas (hills and mountain areas). Different studies have argued that the burden of TB,

physical availability, financial affordability; geographical accessibility, acceptability and civil conflict are determining access and utilization of TB services. Figure 3.2 assists us in understanding the causes and consequences of poor access to and utilization of TB services in Nepal. The above factors mentioned contribute to the poor access and utilization of TB services in Nepal. Since TB has been well-understood killer of human beings, the mortality rate due to these factors will be increased in Nepal.

3.5.2 Developing Possible Options

Despite the observation that the burden of Tuberculosis has fallen in developed countries over the past 100 years, the problem persists as a major public health burden for the developing countries. TB comprises 25 percent of all avoidable adult deaths, particularly in the productive age group (Murray, Stylbo, Rouillon, 1990). The figure can be more sensitive because they persist despite the presence of effective medical treatment, available for over the past half century. Various options and interventions are being utilized to control the TB worldwide.

a. Poverty Reduction

Tuberculosis has been accepted as a disease of poverty. Some studies explain that the poor have nothing to choose but disease (Farmer, 1997). Based historical evidence and current experiences, the following publications have postulated the linkages between TB and poverty.

It has been identified that there is possibility to increase the likelihood of disease transmission through over-crowded and poorly ventilated accommodation at home and work (Elender, Bentham, Langford, 1998). Likewise improved housing and reduction in overcrowding environment have contributed to the decline of TB in industrialized countries (McFarlane, 1989). More recent evidence confirms that individuals in a severely malnourished state do have a high risk of morbidity and mortality from TB (.Cooper, Rotimi, Kaufman, Luke, 1996).

Poverty, however, provides a barrier to access and utilization of the necessary treatment, even when treatment is provided free of charge, to prevent spread of infection in a community and has been recognized as the single most important risk factor for poor treatment. Thus, a poverty reduction program needs to be introduced to increase the access and utilization of TB services in the country like Nepal. In order to introduce a poverty reduction program, various policies related to the development may need to be restructured. Likewise the amount of money that is needed to address poverty could be large scale. The country itself has the poverty reduction program and facing various problems in implementing it. For the purpose of this study the poverty reduction intervention cannot be handled as a first priority.

b. Education

The role of education, particularly for women, in the utilization of health services and the general well-being of families and communities has become apparent. The strategies used by educated mothers have been found to be significantly more successful in maintaining well being within the family compared with their non-

educated counterparts. Educated women are also known to benefit more from a health care program. More than 60 percent of women are illiterate in Nepal (NHDR, 1998). The lower proportion of female registration in TB service has continued to be seen in 2001. Smith (2001) reported that males and females ration is 2.6.:1 in Nepal. The overall education has also been reported to be poor in Nepal. Hence, in order to increase the access and utilization of TB services, educational programs need to be launched nationwide.

There is no doubt that an educational program can contribute to increasing the access and utilization of TB services. However, an integrated effort with large amount of money will be needed to promote education. Moreover educational goals cannot be achieved in a short time. Thus, due to resource time and scope of education program, it cannot be incorporated in this research.

c. Community Participation

The community participation approach (Khatidja et. al, 1993) is likely to work in the broader scale with certain issues. Countries with political commitment, voluntary work , and where women are able to work outside the home with adequate payment are likely to provide an environment where it will succeed. Otherwise it will only work on a small scale. The National Tuberculosis Center of Nepal has included the community participation approach in its policy (NTC, 2001). It is well accepted that community participation can promote the access and utilization of TB service.

In each infectious disease control program, policy makers need to be involved and must be able to maintain the integrity of technical support and funding structures. Within these structures, however, programs will also need to adopt a broader, longer-term and historically informed view and be willing to share responsibility for disease control with communities. Whether funding for a community approach is available locally, and whether, the donors are willing to provide funding to the community could be fundamental questions. Due to the civil conflict and state of emergency, the community participation approach is threatened. Based upon the above it can be said that for the purpose of this study the community participation approach may not be taken as a possible way of solution.

d. Planning

The National Tuberculosis Center Nepal is promoting the involvement of the community in planning, implementing and monitoring TB control services. Based upon the literature geo-political, socio-economic and cultural barriers pose challenges to the control of TB in Nepal (NTC, 2001). In order to understand the diverse factors affecting to TB control, we need to build up information that can provide ample evidence to prepare a plan. Routinely collected data from health services records does not provide a complete description of the current health status of the population suitable for use in health service planning (Lwanga, Tye and Ayeni, 1999). In such conditions functional participation of communities may be useful to prepare the best plan.

The Department of Health Services (2000) reported that 19 percent of the problems are related to coordination and planning. This report explored the importance of planning for better health outcomes. The G8 Group of Countries called for the

scaling-up of the interventions against TB and set a target for the reduction in TB mortality of 50 percent by 2010 (Watts, 2000). Likewise during the first DOTS Expansion Working Group meeting in Cairo, an objective was set to prepare 5 year strategic planning in each of the high burden countries. As noted earlier, the National Tuberculosis Center of Nepal defined two objectives for all research a) To improve the quality of care for people with Tuberculosis in Nepal and b) To assist the NTP in planning and implementing effective TB control (NTC, 2001). Referring to these and the complex situation of Nepal, planning could be an important tool to understand and sustain TB control in the countries like Nepal.

Indeed the notion of TB control i.e. control by 'we experts' puts the power firmly in the hands of health professionals and health policy makers and implementers, wresting it from the community. Thus, community participation needs to be encouraged in the planning process of TB programs. Community involvement in planning of TB services would promote sustainable TB control in Nepal.

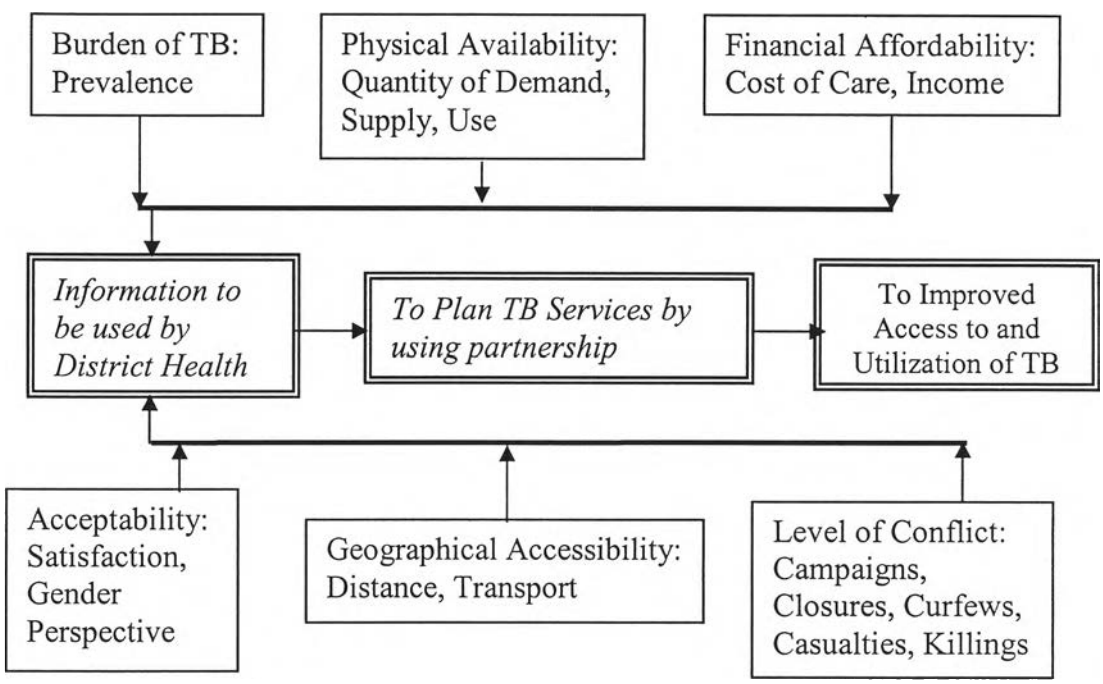
3.5.3 Applying Relevant Options

a. Planning and evaluation

The heart of the health care system is information. The system must provide adequate information so that planers and implementers can continually assess needs, adjust plans accordingly, monitor results, readjust plans and so on (Husein,.Wit 1993). Information provides the evidence for the management of a health program or system and for monitoring health activities. Health information is made up of mechanisms and procedures for acquiring and analyzing data and providing evidence i.e. health statistics, literatures (Lwanga,Tye and Ayeni, 1999). Thus, information is an important

tool in preparing TB service planning. My conceptual model shown in figurer 3.3 was used to determine the perspective, on how information were systematized and plans were developed.

Figure- 3.3:Conceptual Framework



The prevalence of the TB has been provided the number of cases in the study areas, which is the most important information for developing the plan (WHO, 1992). Physical availability deals with demand, supply and use of TB services (Marc, 2001). Cost of care, income and paying culture are part of financial affordability that provides economic information (Lee,2001; WDR, 2001). Acceptability deals with knowledge, attitude and practices of TB subjects and gender perspectives on TB service delivery and use. Acceptability deals with social factors, which provides the rational information for plan (Lee, 2001; UCLA, 2002). The location of health facilities and means of transportation to the health facilities are the factors considered in geographical

accessibility (Lee, 2001; DoHS, 1997). Likewise civil conflict will be denoted by the number of mass meetings, closures, causalities, curfews, government status and military actions (WDR, 2001; Gustafson 2001). The study will measure the association of each factor in the areas with and without conflict. All the factors will provide the information that will be most important to develop the best plan. The partnership approach will be used to evaluate the plans developed in both study areas.

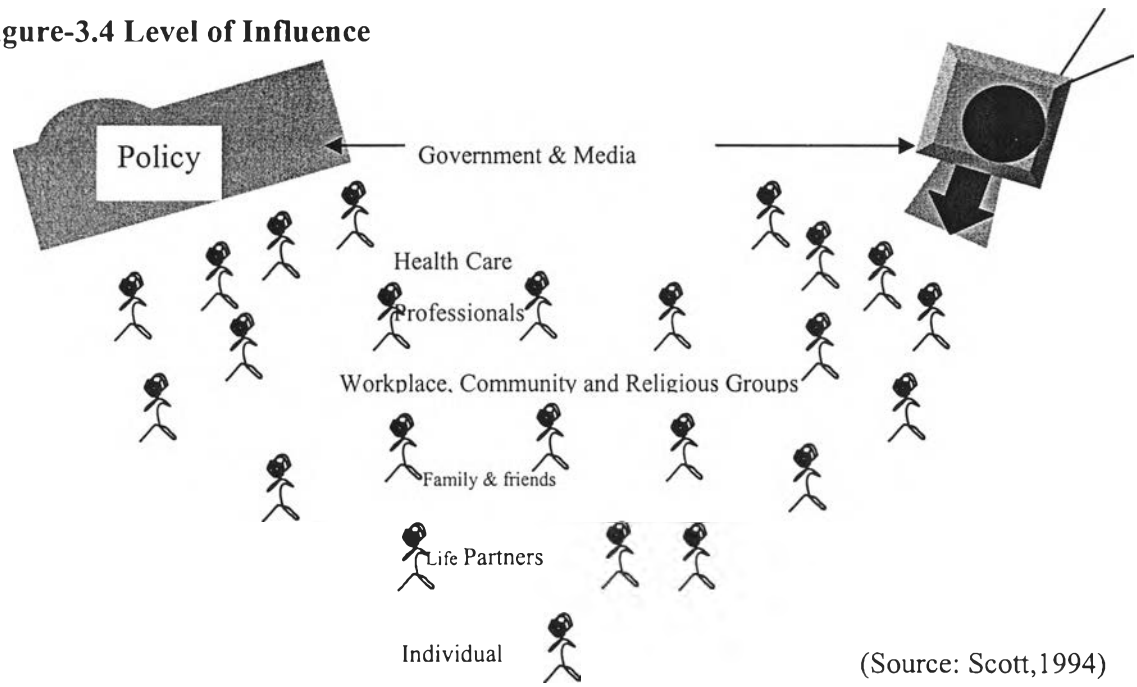
i. Planning to be Used by District Health Facilities

Different planning models are being used in public health sectors. After reviewing the some of the planning models, the following models have been identified to be useful in planning of TB services.

- **Level of influence**

Every plan has a direct relation to policy and actions. Importantly the plan needs to be prepared by having consultation with different levels of the community. The prepared plan needs to be verified and endorsed by policy makers. Figure 3.4 shows the steps which were utilized to understand how planning can be formulated.

Figure-3.4 Level of Influence



(Source: Scott,1994)

Planning of TB services moves from the individual to government level. The model was used to formulate and verify the information at different levels in study areas.

- **PHC MAP model**

In order to increase the access and utilization of TB services, a complete planning process is required. Primary Health Care Management Advancement Program (PHCMAP), planning and assessing health worker activities module number 3 was used during the planning of TB services (Khatidja, 1993). Following modified steps were used.

Step 1. Describe and map the catchments area

a) Collect the secondary data/information

b) Define the catchments areas

c) Describe the catchments areas

d) Make maps of catchments areas

Report of each sub-step were produced and compiled in one file. The reports were presented to the group and entered into the next step.

Step 2. Identify community needs and available resources

a) Define the indicators of access and utilization of TB services

b) Risk factors indicators

c) Health facilities

d) Identify internal and external resources

Having the participation of the community and district health facilities each sub-steps were determined.

Step 3. Set priorities and identify high –risk groups

a) Set the priorities

b) Determine the risk factors

c) Set the strategies to mitigate the risk factors

d) Determine the targets

e) Determine the high risk group

f) Use risk factors to monitor high risk group

Both priorities and high-risk groups were mapped out by having active participation of professional institutions, traditional healer, CBOs, the local researchers, community, TB patients and district health facilities.

Step 4. Plan TB service activities

a. List the services required

b. Identify the strategy to get and utilize them

c. List both hospital and community based activities

d. Determine the indicators of each activities

e. Determine resource i.e. time, money, and manpower

f. Develop a tool for monitoring

g. Determine the local supports needed

Each sub-step were reported carefully and tested in different levels.

All sub-steps were planned by having participation of TB patients, health personnel, and the community and district level. The modified PHCMAP model has been used in establishing health information that was useful to make functional plan on a routine basis. After completing all steps, one to four report was prepared and presented in each study area.

- **Partnership Approach to Evaluate the Plan**

In order to evaluate the planning a partnership approach is proposed in the study. The reasons behind using the partnership approach are;

a) The partnership approach has been using to monitor and evaluate the TB control program in DOTS at different levels

b) STOP TB, WHO and The World Bank have strongly recommended the community partnership in TB control

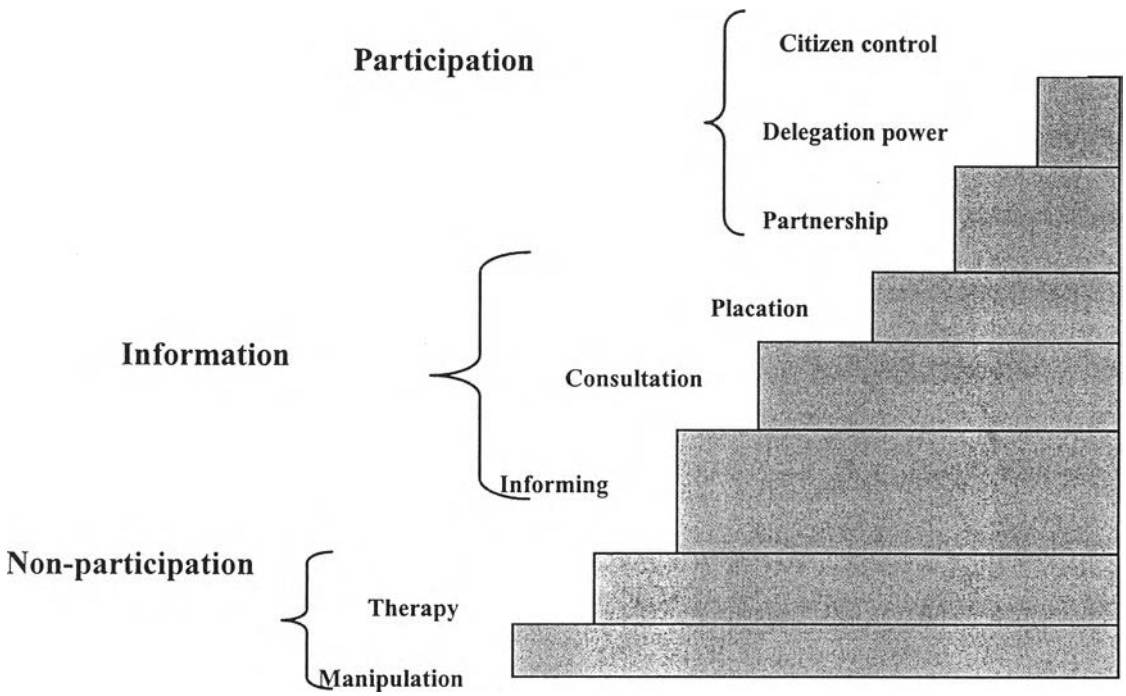
c) National Tuberculosis Center of Nepal (NTC) highly emphasized on the role of partnership in TB control

d) TB is not the only a clinical problem but it has been accepted as a social problem. (WHO,2002; STOP TB, 2002; World Bank, 2001; NTC, 2001; DoHs, 2001).

National Tuberculosis Center (2001) reported that "DOTS-TB Cure for All" is more easily achieved if partnership is established at all levels i.e. individuals, communities, organizations and nations. It has further been reported that working together in partnership is challenging in developing countries (WHO, 2002).

Partnership has been defined in various ways. For the purpose of this study the concept of build on rather than replacement was utilized. The mutual understanding on the problem and integration of TB as a cross- cutting issue among the locally available organization will be the best model for partnership. Sitthi-amorn (2000) mentioned that good partnership is the cornerstone of success for pooling the resources from different sectors for public health. The involvement of individuals, institutions and professionals promotes the more complete understanding of issues and improving the capacity to plan and evaluate the plan (Edwards, L. S. and Stern F.R., 1998). Partnership initiated in certain stages, it develops with the common understanding, mutual respect, existing capacity and achieve the object or able to solve the problem on the basis of eventual sustainability. Figure 3.5 assist us to understand the level of partnership.

Figure- 3.5: Level of Participation



Source: Modified from, Arnsteins Ladder of Participation, 1969, cited in WHO, 1999, p.12

The figure shows the different stages of pre and post partnership. The partnership has been taken as a best model to sustain the interventions and solve the problem. http://ag.arizona.edu/partners mentioned the various factors that can contribute the best partnership. The following are the factors of best partnership.

- Agreement
- Respect and trust between different interests.
- The leadership of a respected individual.
- Commitment of key interests developed through a clear and open process.
- The development of a shared vision of what might be achieved.

- Time to build the partnership.
- Shared mandates or agendas.
- The development of compatible ways of working, and flexibility.
- Good communication, perhaps aided by a facilitator.
- Collaborative decision-making, with a commitment to achieving consensus.
- Effective organizational management. (Building Effective Local Partnerships, The Partnerships Handbook http://ag.arizona.edu/partners)

NTC (2001) reported that partnerships make the tasks much easier. By helping each other, we can overcome challenges that affect us. In Nepal, different kinds of partners have been identified and formed the DOTS committee in different levels. NTC (2001) reported that TB patients, individuals, communities, private sectors, medical colleges, cooperatives, industries, donors, I/NGO, health offices, hospitals, doctors, health workers, AIDS program, social workers, intellectuals, teachers, students, politician, media and policy makers are the key partners of TB control. For the purpose of these study different professional institutions, traditional healers and CBOs, TB patients, health workers, and district health facilities were added as the partners. The plans developed from the study, will be discussed and provided to the district level DOTS committee. Committee will monitor and evaluate the plan in each district.