CHAPTER- I

INTRODUCTION

1.1. Introductory Statement

Health geography is the application of geographical information, perspectives, and methods to the study of health, disease, and healthcare. Initially it was referred to as medical geography (Andrews, 2002). Health geography can provide a spatial understanding of population's health, the distribution of disease in an area, and the environment's effect on health and disease. It also deals with accessibility to healthcare and spatial distribution of healthcare providers. The study is considered a sub-discipline in human geography, though it requires an understanding of other fields such as epidemiology, climatology, sociology, economics and other sciences. Even though healthcare is a public good, it is not 'pure'. In other words, it is not equally available to all individuals. The geography of healthcare provision has much to do with this. Demand for public services is continuously distributed across space, broadly in accordance with the distribution of population, but these services are only provided at discrete locations. Inevitably therefore, there will be differences of access in terms of the utility of using services, transport costs, travel time and so on. Geographical factors, such as physical proximity, travel time etc. are not the only aspects which influence access to healthcare. Other dimensions are social, financial and functional. Social accessibility to healthcare may generally depend on race, age, sex and other social characteristics of individuals as well as relationship between patient and the doctor. Financial accessibility depends upon the price of a particular healthcare and functional accessibility reflects the amount and structure of provided services. This can vary among different countries or regions of the world.

The concept of healthy mother and healthy baby is an important aspect of reproductive healthcare programme. Women's health, in general and women’s reproductive health, in particular, is currently receiving considerable attention in the political arena as well as from funding agencies globally. While politicians and advocates tend to refer to "health," scientists are more likely to focus on morbidity or the absence of ill-health. The decennial International Conference on Population and
Development (ICPD) stressed the importance of women's health and especially their reproductive health, to overall economic development.

In a developing country like India the condition of health is generally low, particularly that of women’s health when it pertains to reproductive health. The subject of ‘reproductive health’ can be studied from various aspects and women suffer from reproductive morbidity in the multicultural setting of India. An assessment of the country’s performance in the areas of health, demographic behaviour and family planning indicates the following improvements in the past five decades (Central Bureau of Health Intelligence, 2006; Registrar General, 2006a). The crude death rate declined from 25 per 1,000 in 1951 to 8 in 2001. The infant mortality rate has been halved, from 120 per 1,000 live births in the 1970s to 60 in 2003. The expectation of life at birth has risen from 36 years in 1951 to 62.5 years in 1998-2002. The crude birth rate declined from 42 in 1951 to 25 in 2002 and the total fertility rate decreased from 6.0 in 1951 to 2.9 in 2003. The maternal mortality ratio is estimated to have declined from 400 maternal deaths per 100,000 live births in 1997-98 to 300 in 2001-03 (Registrar General, 2006b). However, these achievements have not met the population and health goals set by the Government of India and the changes have been considerably slower than in many other Asian countries such as China, Indonesia, Thailand, Malaysia, the Republic of Korea, and Sri Lanka.

The present study focuses on utilization and availability of healthcare services and the factors determining mother’s health seeking behaviour during reproductive process. In other words, the study focuses on social and spatial dimension of mother’s health seeking attitude in association with developmental level of the state, which may have significant bearing on policy formulations and improvements in healthcare infrastructure and quality services. Mere attempt to reduce fertility through incentives and providing medical treatment to pregnant mothers is not enough. It is necessary to improve awareness to the general population about the importance of reproductive health in general and women in particular. This might be one of the reasons why family planning could not be successful in India. More comprehensive and serious approach has been incorporated only in 1996 under Reproductive and Child Health (RCH) project, which has a significant impact in improving reproductive healthcare. It is assumed that geographical factors particularly access to reproductive health is
important for reproductive health. Location and distance of healthcare facility have significant influence on the attitude of mothers for healthcare.

The present study focuses on women’s health seeking behavior, utilization of healthcare services and spatial distribution of healthcare facilities in Mizoram. The study adds a geographical perspective focusing on spatial factors and environmental interrelatedness of mother’s health seeking behavior more than biological attributes of complications of women during reproductive process.

1.2. Statement of the Problem

The importance of understanding reproductive health has advanced significantly in the last decade. The area of reproductive health is different from the fields of healthcare. The input from society at large, and the effects for that society, varies markedly from other areas of medicine and health; not least because human reproduction is the means by which each society perpetuates itself and its traditions. No society, no religion, no culture and no system of national law have been neutral about issue of reproduction. It is a broad concept and very complex in nature as it can encompass many aspects relating to women’s health and its associated environments. Because of its complexity it can be studied from various aspects ranging from pure medical perspective focusing on biological morbidity and epidemiological analysis to socio-economic related environments. Reproductive health is a lifelong cyclical process where every members of the society experience at least once in their life time directly or indirectly. The health of the mother is extremely critical to give a healthy baby, and a healthy infant is equally important to become a healthy mother. In order to achieve this healthy life of the mother and the children, it is inevitable to create a healthy environment in the family as well as in the society, with the participation of all members of the society, which will ultimately lead to national health. By realizing the need for integrated and comprehensive approach to the study of reproductive health, global community has been taking certain measures to tackle problem and issues relating to reproductive health across the globe from several angles. Advancing reproductive health, much more than other fields of health, requires input from health, health policy maker, legislator, lawyers, human right activist, women’s group, and the society at large. There is no single discipline, perspective, standard of practice or
ethnic that will resolve the many dilemmas, often amounting to crisis in the protection of reproductive and sexual health. Because of worldwide commitment there are successes. For example, in China, Cuba, Egypt, Honduras, Jamaica, Malaysia, Sri Lanka, Thailand and Tunisia, significant declines in maternal mortality occurred as more women gained access to primary healthcare that included family planning and skilled birth attendance, backed up by emergency obstetric care including post-abortion care. However, the success level has been highly varied and inadequate. Within countries, startling inequities in access exist between the poor and the rich and between rural and urban populations.

Available statistics on reproductive health in Mizoram reveals a generally satisfactory picture when compared with national performance and the situation prevailing in other North-Eastern States. This is in spite of the many unfavorable conditions in Mizoram. The state located in one of the most remote north eastern part of India with highly rugged topography. In addition, almost 95 percent of the population is tribal and more than 80 percent embraced Christianity as their religion and both of these are indicators of minority status from national perspective. Interestingly, Mizoram is the second highest literate among the Indian states and the second most urbanized state in India. It is exciting to examine that how these varied and complex factors contribute for the well being of mother and children. On the other hand, this generalized good performance is a little doubtful and this aggregate picture can ignores possible variations that may exist across diverse regions within the state and across rural and urban areas. The research aims at scrutinizing data at regional and sub-regional level to find if the aggregate understanding is at variance with the regional and sub-regional level reality.

Secondly, data collected from government sources and from highly selective samples often fail to capture the ground reality mainly due to unreliability, under coverage and also due to inherent sampling biases. Inequalities in reproductive healthcare are logically related to inequalities in general health. It is expected to find a general correlation between indicators of reproductive health and indicators of overall development of the state. In the context of Mizoram, it is critical to understand the extent to which inequalities in reproductive health problems are due to inequalities in the distribution of reproductive health services.
The present research sets before itself a major task of identifying spatial variation in the status of reproductive healthcare in the state and examines the problems and constraints of reproductive health through a case study of a Champhai district by collecting information through field survey. Needless to mention, the study emphasizes on accessibility factor and relate the maternal health to the environment; both physical and social. The research also aims at finding out relationship between development and reproductive healthcare utilization at regional and sub-regional level in Mizoram.

1.3. Reproductive Health: Issues, Development and Definition

As the world becomes increasingly interconnected economically, politically, physically, culturally, and electronically, the discourse about population-health relationship is shifting from local to global contexts (Michael and Powles, 1999). The 1994 International Conference on Population and Development (ICPD) marked the awareness of an era of increasing sensitivity to the issues surrounding population growth, and, “was an important milestone in broadening the population debate, and national and international population policies, beyond their demographic focus to comprehend the broader issues of reproductive health and rights” (Rayleigh, 1999). The ICPD Programme of Action that was signed by 179 countries proclaimed ‘reproductive health for all by 2015.’ It is necessary to observe the changing response by the international community, from the concept of ‘population control’ to that of individual choice, in which access to reproductive healthcare is predominant. There has been important progress since 1994 towards the ICDP goal of universal access to reproductive health services. However, gaps in reproductive and sexual healthcare account for nearly one fifth of the worldwide burden of illness and premature death, and one third of the illness and death among women of reproductive age (Singh et. al., 2004)

1.3.1. Definition

With progress in the study of reproductive health and related matters the definition also extended with the passage of time. *It can be simply referred to mother’s well being in physical and mental condition from pregnancy to lactating period.* The definition of reproductive health adopted at the International Conference
on Population and Development in 1994 captures the essential characteristics that make reproductive and sexual health unique compared to other fields of health. Reproductive health extends before and beyond the years of reproduction, and is closely associated with socio-cultural factors, gender roles and the respect and protection of human rights, especially - but not only - in regard to sexuality and personal relationships. ICPD defines reproductive health as “a state of complete physical, mental and social well-being, and not merely absence of disease or infirmity, in all matter relating to the reproductive system and its functions and processes. Reproductive health therefore implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so” (ICPD, 1994).

Implicit in this last condition are the right of men and women to be informed and to have access to safe, effective, affordable and acceptable methods of family planning of their choice, as well as other methods of their choice for regulation of fertility which are not against the law, and the right of access to appropriate healthcare services that will enable women to go safely through pregnancy and child birth and provide couples with the best chance of having healthy infant.

In line with the above definition reproductive health can be defined as the constellation of methods, techniques and services that contribute to reproductive health and wellbeing by preventing and solving reproductive health problems. It also includes sexual health, the purpose of which is the enhancement of life and personal relations, and not merely counselling and care related to reproduction and sexually transmitted diseases.” (Ibid, 1994)

“Bearing in mind the above definition, reproductive rights embraces certain human rights that are already recognized in national laws, international human rights documents and other consensus documents. These rights rest on the recognition of the basic right of all couples and individuals to decide freely and responsibly the number, spacing and timing of their children and to have the information and means to do so, and the right to attain the highest standard of sexual and reproductive health. It also includes their right to make decisions concerning reproduction free of discrimination, coercion and violence, as expressed in human rights documents....” (Ibid, 1994)

Thus, the important areas covered under reproductive health include:
(a) The capacity to determine the number and spacing of births through the use of safe, effective, and acceptable contraceptive methods;
(b) The capacity to terminate an unwanted pregnancy safely, legally and affordably;
(c) The capacity to conceive or to cause conception when a pregnancy is desired;
(d) The capacity to carry a wanted pregnancy to term and to deliver a healthy baby under safe conditions, including the postpartum period;
(e) The capacity to breastfeed and to ensure the health and wellbeing of the newborn;
(f) Freedom from physical damage to the reproductive tract caused by childbirth, abortion or harmful traditional practices such as genital cutting;
(g) Freedom from reproductive tract infections (RTIs), including cancers of the reproductive tract, sexually transmitted diseases (STDs) and HIV/AIDS;
(h) Freedom from unwanted sexual relations and harmful or unwanted sexual practices, including violence and coercion within sexual relationships;
(i) The capacity to enjoy and sustain sexual relations in a spirit of affection and partnership;
(j) A basic understanding of sexual and reproductive processes of both sexes and how they change throughout the life cycle, including physical and emotional aspects;
(k) Full access to appropriate and high quality reproductive health services.

1.3.2. Global Strategy on Reproductive Health

In May 2004, the 57th World Health Assembly adopted the World Health Organization’s first strategy on reproductive health. The aim is to accelerate progress towards meeting the Millennium Development Goals and reproductive health goals of the ICPD and its five-year follow-up. The strategy identifies five priority aspects of reproductive and sexual health:

(1) Improving antenatal, delivery, postpartum and newborn care;
(2) Improving high-quality services for family planning, including infertility services;
(3) Eliminating unsafe abortion;
(4) Combating STIs, including HIV, reproductive tract infections, cervic cancer and other gynaecological morbidities;

(5) Promoting sexual health

The Assembly recognized the ICDP Programme of Action, and urged countries to:

(1) Adopt and implement the new strategy as part of national efforts to achieve the MDGs;

(2) Make reproductive and sexual health an integral part of planning and budgeting;

(3) Strengthen health systems’ capacities to provide universal access to reproductive and sexual healthcare, particularly maternal and neonatal health, with the participation of communities and NGOs

(4) Ensure that implementation benefits the poor and other marginalized groups including adolescents and men;

(5) Including all aspects of reproductive and sexual health in national monitoring and reporting on progress towards the MDGs.

1.3.3. Reproductive and Sexual Health Services

The five core aspects of reproductive and sexual health are: improving antenatal, perinatal, postpartum and newborn care; providing high-quality services for family planning, including infertility services; eliminating unsafe abortion; combating sexually transmitted infections including HIV, reproductive tract infections, cervical cancer and other gynecological morbidities; and promoting sexual health. Because of the close links between the different aspects of reproductive and sexual health, interventions in one area are likely to have a positive impact on the others. It is critical for countries to strengthen existing services and use them as entry points for new interventions, looking for maximum synergy. In most countries, the major entry point will be antenatal, childbirth and postpartum services, which form the backbone of primary healthcare. Central to reducing maternal morbidity and mortality, and perinatal mortality, are the attendance at every birth of skilled health personnel and comprehensive emergency obstetric care to deal with complications. Provision of these services requires effective referral systems for communication and transport between service points. Maternal health services offer a key opportunity to reach women with family planning. They are also an excellent means through which to offer
women prevention, counseling, testing and treatment for HIV infection and for preventing HIV transmission during pregnancy and birth and through breastfeeding. Indeed, it is only through these services that these interventions can be adequately provided.

Present study focuses only on certain fundamental and basic components as reproductive health and related areas were quite vast as highlighted above, which would includes: antenatal care (ANC) which refers to pregnancy-related healthcare provided by a doctor or a health worker in a medical facility or at home. Ideally, antenatal care should monitor a pregnancy for signs of complications, detect and treat pre-existing and concurrent problems of pregnancy, delivery care and provide advice and counseling on preventive care, diet during pregnancy, and postnatal care and related issues. Another important thrust of reproductive health is delivery care. Place of delivery is extremely important- deliveries under proper hygienic conditions under supervision of trained health professionals and improper treatment during delivery makes a difference. Postnatal care is also one important components of reproductive health. The health of the mother and her new born child depends not only on the healthcare she receives during her pregnancy and delivery, but also on the care she and the infant receive during the first few weeks after delivery. Postpartum check-up usually indicates medical check-up received by mother during the first two months after delivery.

As stated earlier in this chapter the study of reproductive health from a geographical perspective falls under the domain of medical geography or health geography that has tended to concentrate on the spatial pattern and relationship of health and healthcare in the belief that spatial inter-relatedness of health and other variables provides an entry to the search for causality. It is a prime global concern, which lures attention from various fields of study under the ongoing process of making the world a better place. It is an imperative assignment of the world, especially the less developed countries as health is a state of complete physical, mental and social well being and not merely the absence of disease of infirmity in all matters related to the reproductive system and its processes (ICDP,1994). According to an analysis of the World Bank and the WHO, Reproductive ill health accounts for
over 30 percent of the overall burden of diseases and disability among women as compared to 12 percent among men (UNO, 1994).

Reproductive healthcare services contribute to reproductive health and well-being through preventing and solving reproductive health problems. Reproductive health approach implies to those people who have the ability to reproduce and regulate their fertility; women who are able to go through pregnancy and child birth safely; the outcome of the pregnancy is successful in terms of maternal and infant survival; and couples who are able to have sexual relations free of fear of pregnancy and contracting disease.

Reducing fertility and infant mortality are of high priority in the national public health objective in India. In today’s scenario, fertility control is the most important way to check high growth of population. Fertility, infant mortality and acceptance of fertility methods are influenced by a variety of interrelated factors such as age at marriage, education and economic status of women. Traditionally, being patriarchal society the status of women in Indian society is perceived to be lower than their men-folk. This may have direct impact on the health of female during pregnancy and postnatal stages in rural areas. Maternal mortality in rural India is as high as 2 percent of total female deaths. (RGI,1997). Further, the health problems of women and children have been identified as a priority interest. In spite of this, much remains to be done to improve healthcare for women and children both in quantitative and qualitative terms.

Needless to say, people living in the geographical periphery of the country need exclusive attention. The case of the North East India thus demands a special treatment. The national policy and planning have been trying to make the northeast progress through certain amount of special packages over the last decades which aim at solving long standing problems and the sense of alienation felt by the people. However, the hill-dwellers of north east who embraced Christianity in large numbers are minority in the national context, not at one but at two levels. As a tribal group sharing less than four percent of the country’s population and distributed in a little over seven percent of the total land area of India, they are in the category of national minority. On the other hand as Christians, they are again a religious minority. This double minority consciousness added with the suspiciousness that generally goes with
hill-psychology makes the matter even worse. However, it is also arguable that Christianity even though treated as minority in India Christians in other parts of the world are more conscious and maintain higher living standard compared to other religions. Therefore, if we observe carefully there might be differences even among the north eastern states who embrace majority of Christian population and who have lesser number of Christian population. In the process of building up of a nation and raising consciousness of unity, the yesteryears planned programmed seem not yet simply fit with the essential needs of the tribal people. So, the present research aims at understanding a vital aspect of health of the mother in a regional context but with a national perspective.

Even though reproductive health covered a wide range of issue present study focus on utilization and availability of healthcare services and major factors determining mother’s health seeking behaviour during reproductive process. In other word, present study focus on social and spatial dimension of mother’s health seeking attitude in association with developmental level of the state, which may have significance in policy formulations and improvements of healthcare infrastructures and quality services.

1.4. Objectives

Mizoram is distinguished by a high level of urbanization, being the second highest urbanized state in the country as a whole. The state also ranks second in terms of proportion of literates among all the states of India. Besides, it supports the highest proportion of scheduled tribe population among the Indian states with more than 85 percent of the population of the state who have embraced Christianity as their religion. Given these peculiarity of the region, the following broad objectives are placed before the research:

1) to understand the state of reproductive health status in Mizoram by comparing with national performance and particularly with the status of northeastern region of India.

2) to scrutinize the state of reproductive health in Champhai district to understand regional reality pertaining maternal health in the state.
3) to examine spatial distribution of healthcare availability and utilization of healthcare services and factors determining mother’s health seeking behaviour across the state.

4) to study the geographical patterning in the provision of maternal health service and its relationship with developmental level at regional and sub-regional level. This is necessary as the case might be different from regional characters to sub-regional reality.

5) to explore social as well as spatial factors determining reproductive health in Champhai District.

1.5. Research Questions

The following important research questions are placed before this research as stated below:

(1) What is the status of reproductive healthcare in Mizoram?

(2) What is the availability and utilization of healthcare in general and reproductive healthcare services in particular?

(3) How far developmental factors, such as female literacy, urbanization, accessibility, healthcare infrastructures and poverty are responsible for mother’s health seeking behaviour in the state?

(4) How far socio-economic factors like-female educational level, age at birth, mass media exposure and mother’s income influence utilization of healthcare services in Champhai district?

(5) How far spatial factors like altitude, accessibility or distance of a village from the nearest healthcare facilities and place of residence controlled mother’s health seeking attitude?

These research questions have been developed on the basis of the understanding from literatures that the health of the expectant mother is affected by numerous socio-economic factors such as urbanization, women’s age at birth, mother’s education, exposure to mass media, women’s occupation and accessibility etc.
1.6. Choice of the Study Area

Mizoram has been chosen for the present study due to certain unique characteristics. The state has the highest proportion of scheduled tribe population among all the Indian states (94.5 percent) compared to national average of 8.1 percent. According to 2001 census, a little less than 90 percent (90.69 percent male and 86.13 percent female respectively) of the population was literate. Half of the population of the state (49.6 percent) now lives in urban areas. High level of literacy urbanization should have positive impact on the health of the people in general and reproductive health in particular. Significantly about 90 percent of the populations has embraced Christianity as their religion, which may be expected to make positive impact on the health of the mother.

The performance of reproductive health in Mizoram is 52.5 percent which is higher than the national average of 39.2 percent and that of Kerala with 42.4 percent (NFHS-2, 1998-99). These unique factors of high percentage of Christianity, literacy, urbanization and scheduled tribe population and their inter-linkages with reproductive health provide a basis for selecting the state as an interesting case study.

Mizoram, located in the northeastern part of India is surrounded by Myanmar (Burma) in the east and the south, Tripura in the north-west half and Assam and Manipur in the north (fig 1.1). The total geographical area is 21087 sq. km. supporting a population of 891058 persons with a density of 42 persons per sq.km. Around 88.49 percent of the population is literate (2001Census). It has inter-state boundaries of about 284 km.; 123 km with Assam, 95 km with Manipur and 66 km with Tripura. Besides, it has international boundaries with Myanmar (404 km) and with Bangladesh (318 km).

During the British period there were important development in the field of education and health. Socio- economic constraints partly restricted women education. The missionaries were the initiators for the health services for the Mizo people. They started healthcare centres, dispensaries and hospitals in various parts of the state along with educational institutions. A Bible woman was an organization which introduced Christianity among the Mizo women. But side by side it guided the womenfolk in matters of cleanliness. The organizers threw the light on sanitation, maternal care and the like. Child welfare organization was established by the Presbyterian Mission at
Aizawl centre which aimed at giving instructions to mothers on how children should be taken care of, how to keep house and household things clean. The Mission schools, besides literacy instructions, acted as centres for hygiene training. Teachers in schools used to instruct pupils on hygiene and its effects.

The present Health Service condition of Mizoram is inadequate to satisfy the needs of the people. There are seven District Hospitals, one TB Hospital and Leprosy Hospital; Lunglei Civil Hospital is being upgraded to 200 beds capacity.

The case study of Champhai district is based on certain unique characteristics that set the district apart from the rest of Mizoram. It shares its boundary with Myanmar on the east witnessing slight cross border migration from both sides which composed certain section of the district population to make the study area more interesting. The third largest among the district of Mizoram, it has an area of 3185.83 sq.km and is divided into three blocks. The Mizos are the dominant tribe though under its umbrella; certain minor clans do exist who continue to maintain their own dialect. The most notable example is that of the Paihte found in certain pocket bordering Myanmar. The district has a total population of 108392 persons with 91.88 percent literates (94 percent male and 89.64 percent women respectively) higher than the state average of 88.49 percent (90.69 percent male and 86.13 percent women respectively). There are four towns supporting 42,049 persons (38.79 percent). The district has a large rural base with 66,343 persons constituting 61.2 percent of the total population. With a high level of literacy, but low level of urbanization as well as mixed composition of population have been considered important as a basis to make an in-depth study of impact on reproductive health of the women.

1.7. Data Base and Methodology

Both qualitative and quantitative data are used for the present research. The method of study is cross sectional nature and used secondary sources like-

(1) Literature: Book, Magazine, Articles, Journal(especially E-journals)
(2) Department of Health and Family Welfare, Reproductive and Child Health (RCH) Wing Project in Mizoram
(3) The annual publication of fact files of the state Directorate of Economic and Statistics along with census data.
National Family Health Survey (NFHS- I, II and III) which was conducted during 1992-93, 1998-99 and 2005-2006

Hospital Record Books

WHO, UNFPA, UNDP, World Bank Reports

The analysis is confined to key indicators such as mother’s education level, mother’s age at birth, mother’s occupation, and mass media exposure. Besides, geographical variables like accessibility or transportation problems and place of residence would play substantial role for analysis of chapters.

Regarding primary sources, questionnaires were prepared for households as well as for women in both English and Mizo. Questionnaire contains the following:

General questions and background characteristics and socio-economic profile of the respondents, such as the usual places where household members go for treatment when they get sick; the main source of drinking water, type of toilet facilities, and distance of healthcare facilities from the village and education level especially mother’s education.

On the Reproductive Health aspect information are collected from all ever-married women aged 15-49, and questions cover the following topics:

(i) Background characteristics: Questions on age, marital status, education, employment status, and place of residence provide information on characteristics likely to influence demographic and health seeking behaviour.

(ii) Reproductive behaviour and intentions: Question is asked on the dates and survival status of all births, current pregnancy status and future childbearing intentions of each woman.

(iii) Antenatal, delivery and postpartum care: Information on whether women received antenatal and postpartum care, who attended the delivery and the nature of complications during pregnancy.

Moreover, questions are asked to assess various aspects of women’s reproductive health and type of care sought for health problems. It also covers on length aspects of breastfeeding, immunization and treatment. It also covered various factors caused them not receiving medical check-up during pregnancy, delivery and after delivery. Furthermore, questions on mass media exposure and sources of
information on timing of vaccine and complication as well as availability of medical facilities.

After getting all the required information and data, the status of reproductive health has been analyzed to identify areas of concern. For data processing and tabulation Microsoft excelled and Statistical Package for Social Science (SPSS 7 version) has been used.

1.7.1. Sample Design

A stratified sample design was considered significant to meet the requirements of spatial variation and socio-economic characteristics of the study areas. Both rural and urban areas were included in the sample. All the towns and villages were stratified at different levels. The first level of stratification was based on locational considerations. Villages and towns were selected from different locations to represent various regions and variations in locational attributes. The second level of stratification was based on population size and literacy rate. Table 1.1 provides details about the population size and literacy rates of the selected towns and villages. As is evident from the table the sample towns are varied in terms of their population size and literacy rates. The district headquarter of Champhai town support the largest population of 19140 persons but surprisingly has the lowest literacy rate (91 percent). Khawzawl is a medium size town with 9616 persons and has a literacy rate as high as 98 percent followed by the smallest town of Ngopa included for field investigation with 4263 persons and 94 percent literacy rate.

<table>
<thead>
<tr>
<th>Sample Towns and Villages</th>
<th>Population</th>
<th>Literacy (%)</th>
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<tbody>
<tr>
<td><strong>TOWNS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Khawzawl</td>
<td>9616</td>
<td>98.00</td>
</tr>
<tr>
<td>Ngopa</td>
<td>4263</td>
<td>94.00</td>
</tr>
<tr>
<td>Champhai</td>
<td>19140</td>
<td>91.00</td>
</tr>
<tr>
<td><strong>VILLAGES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Samthang</td>
<td>1098</td>
<td>93.98</td>
</tr>
<tr>
<td>Tualcheng</td>
<td>750</td>
<td>70.00</td>
</tr>
<tr>
<td>Vapar</td>
<td>522</td>
<td>63.00</td>
</tr>
</tbody>
</table>

Source: Economics and Statistics Department, Govt. of Mizoram

In addition three villages such as Tualcheng, Vapar and Samthang were included in the sample located in diverse relief conditions (fig 1.2). Village Samthang is the largest in terms of population (1098 persons) and has the highest literacy rate.
(93.98 percent). Tualcheng is a medium size village (750 persons) and has a literacy rate of 70 percent while Vapar is the smallest among the sample villages with merely 522 persons and the literate segment is a mere 63 percent (table 1.1).

Three towns namely Champhai, Khawzawl and Ngopa were included in the sample, located in diverse relief areas within the district (fig 1.2). A separate sample design was adopted for the towns as far as selection of households is concerned. The reason for adopting separate sample design for urban area is that the town wards are quite large, making it difficult to list all the households. To avoid error of omission or duplication, two localities, having not more than 500 households were selected for field investigation.

1.8. Overview of Literature

Available literature on reproductive health is vast and multifarious primarily due to inter-disciplinary focus of the subject. It is not possible to address all perspectives within the confines of the present study. For the purposes of the present study, the material reviewed has been arranged into two broad focuses; the first part covers reproductive health status of different countries ranging from Europe to Africa to Asia while the second part focuses on several determinants of mother’s health seeking bahaviour, such as socio-economic, education, parity, age of marriage, mass media exposure, occupation and spatial factors. Recently, a number of researches have been carried out to study the process and development in the field of health services and healthcare with particular emphasis on reproductive health in different parts of the world. The physical, geographical location, socio-economic and political attributes are usually associated with overall development in a particular region.

Vital statistics in Central and Eastern Europe (Albania, Czech Republic, Moldova, Romania, Russia, and Ukraine) and Central Asia (Kazakhstan, Kyrgyz Republic, Turkmenistan, and Uzbekistan) indicate that between 10% and 54% of maternal deaths are abortion related, presumably most of them from illegally performed abortions (WHO, 1998). By contrast, abortion-related deaths constitute about 4% of maternal deaths in the United States (Chang et. al., 2003). As the health of mothers and their infants is linked and they depend on similar health services, infant mortality rates are also considerably higher in the Eastern Europe than in
Western Europe, although this is not always reflected in the official statistics. However, even the official rates are much higher than the rates in Western Europe, in all but two countries (Czech Republic and Slovenia). For example, as of 2000, the official infant mortality rate in Romania (18.6 infant deaths per 1,000 live births) ranked the highest in Central and Eastern Europe. Official rates in the Caucasus region (Armenia, Azerbaijan, and Georgia) and Central Asian republics ranged from 12.2 to 32.8 infant deaths per 1,000 live births. The United Nations Population Division estimated infant mortality rates around 10 infant deaths per 1,000 live births or less in Central European countries, between 11 to 16 infant deaths per 1,000 live births in the Baltic region, between 13 to 33 per 1,000 in Eastern Europe and Caucasus, and between 45 to 57 infant deaths per 1,000 in Central Asia (United Nations Population Fund [UNFPA and PRB, 2003]). By comparison, the infant mortality rate for Western Europe was, on average, 5.0 infant deaths per 1,000 live births (PRB, 2002).

According to the most recent estimates developed by the World Health Organization, the United Nations Children’s Fund, and the United Nations Population Fund, approximately 529,000 maternal deaths occurred in 2001, with more than 99% occurring in developing countries. Nigeria, with an estimated 37,000 maternal deaths, ranked as the country with the second highest number of maternal deaths in the world (WHO, 2004). The maternal mortality ratio in rural areas, where about two-thirds of Nigerians live (National Population Commission, 1998), is particularly high. According to the 1999 Multiple Cluster Indicator Survey, the maternal mortality ratio in the rural areas (828 maternal deaths per 100,000 live births) is more than double that of the urban areas (351 maternal deaths per 100,000 live births) (UNICEF, 2000). The issue of health-seeking behavior of rural Nigerian women is one of the most neglected areas in maternal mortality studies in the country. Most research studies on maternal mortality in Nigeria, as a review of reproductive health studies published by the Federal Ministry of Health, 1998 showed, are institution-based or urban-based in nature. Thus, the rural areas where the majority of Nigerian people live and where the burden of reproductive ill-health is greater have been largely overlooked in research activities. Also, the socio-cultural determinants of health such as health-seeking behavior have received scanty attention so far. In Nigeria the private maternity centers
were providing a wide range of maternal and child health services. At least eight traditional birth attendants (TBA) were providing delivery and related services within the community. The TBAs were native members of the community, and had a long history of community engagement in terms of provision of services to pregnant women, particularly during childbirth. They were also providing limited childcare-related services (Osubor et.al., 2006).

There are many risks associated with pregnancy; more than half a million women, nearly all of them (99 percent) in the developing world, die each year in pregnancy or childbirth (Blurn and Fargues, 1990; Population Reports, 1988). These deaths are only part of the story. For every woman who dies, many other suffer serious sometimes permanent injuries as a result of pregnancy (Population Reports, 1988).

In a recent national demographic study in Philippine (The Safe Motherhood Survey, part of the 1993 National Demographic Survey) covering more than 8,400 (8481) women of reproductive age, a majority of the women reported at least one pregnancy-related complication and a substantial number reported suffering two or more maternal ailments (Pagtolun and Badoles, 1995). More than a fourth of these women (26.3 percent) reported ailments and complications during pregnancy, 33.8 percent reported ailments during childbirth, and 19.1 percent experienced ailments during the six-weeks of postpartum period.

In the neighbouring country of Indonesia as one of the countries which undertook to reduce maternal mortality by one-half before the year 2000, in the 1990 Children's Summit. Consequently in its sixth five-year development plan, Indonesia aims for reduction of the 1992 maternal mortality ratio (MMR) of 425 to 225 per 100,000 live births within eight years (GOI and UNICEF,1994; Balitbangkes-DepKes. and BPS,1994). Nonetheless, deaths attributable to complications of pregnancy or delivery such as hemorrhage, infection, complications of unsafe abortion, obstructed labour, and pregnancy-induced hypertension, which are much too common in Indonesia at present. These deaths occur despite the existence of a wide range of preventive medical technologies.

Maternal health in Cambodia lags behind much of the world, particularly when compared to other Southeast Asian countries. The national maternal mortality
ratio is 472 maternal deaths per 100,000 live births, more than ten times higher than that of Thailand and more than three times higher than neighboring Vietnam (National Institute of Public Health et al., 2006). While postpartum hemorrhage (25%), sepsis (15%) and unsafe abortion (13%) are the most prevalent causes of maternal mortality worldwide, Southeast Asia faces a disproportionate burden of maternal deaths due to unsafe abortion (14-16%) particularly when several countries in the region allow abortion on request (WHO, 2007).

In rural China, there is a considerable gap between the prevalence of RH problems and utilization of RH services (Kaufman and Jing, 2002). A lack of public funding and uneven socioeconomic development is contributing to these RH disparities in China.

In the study of China (Fang 2004) there is growing evidence of inter-regional disparities in reproductive health services. At the broadest level, Gu, 2003 illustrates regional-level deficiencies in the provision of reproductive health services that correspond to developmental differences. As Fang (2004) outlines, under-funding of the healthcare sector in poor, rural areas is contributing to cleavages in reproductive health services. Though there is some central funding of reproductive health services through the Family Planning Stations, this is insufficient to off-set general health sector deficiencies, leading to unmet RH needs. Fang indicates that there are several major reproductive health problems within the health sector. First, there are often financial limitations to expanding the scope of RHS further than required national family planning initiatives (e.g., contraception) and essential maternal care. In numerous places, basic RHS is unavailable through the health sector, including testing and treatment for common RTIs and pap smears. Second, there is a systemic lack of adequate training of local RHS providers, which affects quality of care. The utilization of pre-natal check-up services among low-income women is well-known to differ from province-to-province (Fang, 2004). There is also a gap between RH need and help-seeking that appears to associate with low-income status. Focusing on two rural counties in Yunnan, China, Kaufman and Fang (2002) observe that pregnancy-related morbidities are quite common, affecting from 41-62 percent of women depending on township, but few of these women seek medical treatment. At most,
about 52 percent seek treatment for RH problems during pregnancy, and as little as 16 percent seek treatment for postpartum health problems.

Mueller (1999) reported on IUSSP Policy and Research Paper that even where low-cost health facilities are distributed throughout the population, few people may take advantage of them. In Egypt, for example, although 99 percent of the population has access to government health facilities, utilization rates do not exceed 20 percent. But decision-making processes within households and kin groups may also prevent many women from recognizing and acting on their own sexual and reproductive health needs. Evidence from papers presented in the seminar reveals that in some countries, such as Jordan and Sri Lanka, virtually all women utilize basic maternal and child health services, including frequent prenatal visits and hospital-based delivery. At the other end of the continuum, there are countries such as Mali where almost no women have access to trained providers in pregnancy and childbirth because such services are virtually nonexistent in rural areas.

In India use of pregnancy related services is largely considered unnecessary as pregnancy is regarded as being a ‘natural’ phenomenon (NFHS-1, 1997). Illness is often ascribed to supernatural powers and therefore seeking care from a trained provider is often delayed. Practices undermining the important of increased diet during pregnancy and breast feeding practices are rampant. Also a woman’s illness is given a low or the least preference in a patriarchal setting such as India and this further delay the care seeking.

Tribal people constitute 8.2 percent of the country’s total population i.e., 84 million and are considered to be socio-economically the most disadvantaged group. They have a poor access to the health services and there is also under utilization of health services owing to social, cultural and economic factors. The National Population Policy 2000 of the Govt. of India identifies the low status of women in India, typified by factors such as discrimination against the girl child and female adolescents, early age at marriage and high rate of maternal mortality as an important barrier to the achievement of population and maternal child welfare goals (MoHFW, 2000).

Singh et.al (1995) studied the extent and nature of reproductive health problems, and the action taken for prevention/management of these problems in rural
area of district Ambala, Haryana. It was concluded that community-level reproductive health education should take place and that round-the-clock services should be available in rural areas to deal with maternal emergencies. In addition health worker should be trained to prevent and treat gynecological complaints. Jasmin et al (1998) say, young married women in this rural India community have a high prevalence of RTI including sexually transmitted infections (STIs) but seldom seek treatment. Education and outreach are needed to reduce the stigma, embarrassment and lack of knowledge related to RTIs. The low social status of women, especially young women, appears to be a significant influence on their low rates of treatment for these conditions. Mari Bhat (2002) in his study “maternal Mortality in India: An update, present estimates for maternal mortality for India from two indirect procedures, the sisterhood method and a regression method enrolling sex differentials in adult mortality and compares them with estimate available from other sources. The sisterhood method is applied to the data collected in a human development survey that covered all rural areas of India in 1994, while the latter method is applied to the data on mortality and fertility rates from Indian sample registration system. The level of maternal mortality for the early 1980 implied by the sisterhood method is found to be about 15 percent lower than the estimate from the same period derived from the method that uses the data on sex differentials in adult mortality. The study also discusses the socio-economic differentials in maternal mortality implied by the sisterhood data and spatial and temporal variation in material mortality derived from the regression method. Bhatia et al (2003) in their extensive research in Karnataka state, found that married women experiences a heavy burden of reproductive morbidity. In more than half the cases of illness, a health practitioner was consulted and in about three quarter of the times private practitioners were preferred for consultations. From these results, they come to the conclusion that improvement is requires in the private sector providing healthcare services. They suggest that a simple and inexpensive training package can be developed to improve the quality of reproductive healthcare offered by private practitioners in rural Karnataka.

Das(2004) explains, the Family Planning programme in India has for long been driven by the twin imperatives of maternal health and family planning leaving a large number of women’s health issue including many reproductive health issues
unaddressed. However, after the International Conference on Population and Development held at Cairo in 1994, India has been in the forefront in incorporating changes in the way the Family planning programmes have been conceptualized and delivered. Key changes were the abolition of contraceptive targets, adoption of the Community Needs Assessment Approach and the reproductive and Child health programme.

1.8.1. Socio-Economic Determinants

The socio-cultural determinants of reproductive health have a cumulative effect over a lifetime. A correlation exists between the social inequity and reproductive health. The female literacy rate in India is 54.3 percent (Census, 2001) and 26.1 percent of the total population in India are below the poverty line. (CBHI, 2002). Poverty and illiteracy have a negative bearing on the maternal and child health. About one third of women are married by the age of 15 years and two-third by 18 years. The median age at first birth is 19.6 years (NFHS-2). Thus half of all women experience child birth by the time they are 19, usually before the physical maturity is obtained. The epidemiological literature demonstrates a relationship between community-level socioeconomic context and numerous health outcomes, including mortality rates, self-rated health, cardiovascular disease, and chronic conditions (Robert, 1999). Prior studies show that, net of individual socioeconomic status, residing in an impoverished or an affluent community effects the distribution of illness (Do and Finch, 2008; Ross and Mirowsky, 2008). To be sure, a sizable proportion of these between area differences accrue from compositional differences (e.g., spatial concentrations of individuals with low-income), but area socioeconomic context has an independent effect. Accordingly, residing in an impoverished neighborhood can decrease a rich person’s health chances, whereas residing in an affluent neighborhood can improve a poor person’s health chances. Community-level socioeconomic context is important because it corresponds with the prevailing social environment and deficient levels of services (Robert, 1999). For instance, a lack of social organization is characteristic of numerous low-income communities, and restricts cooperation, such as information sharing or pooling of resources, which is essential for ensuring group welfare. Price and Hawkins (2007) remark, local institutions, kinship groups, social networks, cultural norms and socioeconomic
conditions represent the basis of individual reproductive health behaviors. In general, community-level attributes are important because numerous studies indicate that individual characteristics are insufficient to explain group differences in a broad range of health behaviors and outcomes (Bond Huie, 2001). Antenatal care provides an opportunity for a variety of preventive interventions during pregnancy, including tetanus toxoid injections, and educating women about nutrition, safe delivery, and postpartum care (Govindasamy et al., 1993). It also allows women who face a high-risk pregnancy to be identified and monitored during pregnancy to ensure a safe delivery. Delivery care is an important aspect of maternal care. Most non-abortion maternal deaths occur around the time of labor and delivery or within a few days after birth (Fauveau et al., 1988). Access to obstetric services from qualified professionals is therefore essential to preventing maternal deaths. Cultural aspects—(traits, pluralism, ecology, evolution and diffusion etc.) and diseases have relationship with spatial pattern of healthcare delivery of the modern society. Besides, family and population structure is highly influenced by process of development or urbanization. Economic development has direct and negative impact on fertility and women and child health (Xuanning fu and Heaton, 1995). A woman’s demographic and health-seeking behaviour is interrelated with their age, marital status, religion and caste. Modernizing influences such as education and exposure to mass media are also important catalysts for demographic and socio-economic change. In addition women’s status and autonomy are critical in promoting change in reproductive attitudes and behaviour, especially in patriarchal societies. (Dyson and Moore, 1983; Das, 1987; Basu, 1996). Demographic factors like age at marriage, family size, gender preference (Bhasin,V.,1990; Chachra and Bhasin,1998; Bhasin and Nag, 2002) and socio-economic factors like education, occupation, religion, contraceptive practice etc. (Bhatia,1970) are important determinants of maternal health. Promotion of maternal and child health has been one of the most important objectives of Family Welfare Programme in India. As part of the Minimum Need Programme (MNP) initiated during Fifth Five-year plan (1974-79) maternal health, child health and nutrition services were integrated with family planning services. The primary aim at that time was to provide at least a minimum level of public health services to pregnant women, lactating mothers and preschool children (Kulkarni, 1979). The management of
health problems during pregnancy and after delivery is important to maintain the health of mother (Das and Shah, 2003). Issues pertaining to health and healthcare are too important to be left alone to the practitioners of medicine and government. Social scientists have a particularly significant role in understanding the problems of health as it manifests differently in socially and environmentally differentiated people (Nayak, 2004). So far as reproductive health is concern complications related to pregnancy and childbirth are among the leading causes of mortality among women of reproductive age in many less developed countries (United Nations, 1995). The use of maternal and child health services, such as prenatal care and professionally assisted delivery, improves the health and well-being of women and children (Short and Zhang, 2004). Many research literatures observed that in the study of reproductive health results often specific to particular social and cultural contexts: association observed in one setting are not necessarily found in another. Multiple factors influence reproductive behaviours and attitude of women, not only individual, family and community attributes but also changing social norms and values (Muller, 2007). To conform other research finding in developing countries that low socioeconomic or poverty is related to the use of health facilities and trained medical personal (Paul and Rumsey, 2002: Navaneetham and Dharmalingam, 2002).

**Education**

There is no universal explanation that applies to all times: the determinants of utilization of maternal healthcare services are not the same. Education can have an empowering effect on women, broadening their horizons, choices, and opportunities and “enabling women to take personal responsibility for their health and for that of their children” (Paul and Rumsey, 2000). Higher levels of maternal and head of household education are associated with increased use of healthcare during pregnancy as well as having modern a delivery or a delivery by trained personnel (Bhatia and Cleland, 1995; Celik and Hotchkiss, 2000; Hotchkiss, 2001; Navaneetham and Dharmalingam, 2002; Obermeyer and Potter, 1999; Paul and Rumsey, 2002; Pebley *et al.*, 1996) across socio-economic and cultural contexts (Navaneetham and Dharmalingam, 2002). Ideal family size in Mizoram is associated with mother’s education level and occupation of the family (Singh, 2000). The level of maternal education is likely to reflect household related behaviour and the ability of the mother
to manipulate children. (Cleland and Van Ginneken, 1988; Bicego and Boerma, 1991)). Various studies based on NFHS-I data show that even after controlling the effect of other factors, education is a key factor influencing contraceptive use (Rutherford and Ramesh, 1996; Ramesh et al., 1996). Cross-country comparisons using large data sets, such as the World Fertility Survey and the Demographic and Health Surveys, have shown that education in general and female education in particular exerts a very strong influence in reducing child morbidity and mortality (Boerma et al., 1990; Bicego and Boerma, 1993; Caldwell and Caldwell, 1990; Hobcraft; Murthi, 1995). Studies have also shown that utilization of prenatal care is dependent on, among other factors, maternal education (Monteith et al., 1987; Okafor 1991; Wong et al., 1987). Studies of factors that influence the utilization of modern delivery-care services are, however, scarce. Several other studies have been carried out to explain how maternal education may influence child health, mostly within the conceptual framework put forward by Mosley and Chen (1984), who argue that mortality is the outcome of a combination of social, economic, biological, and environmental factors and that these factors operate through a set of proximate determinants.

Three broad pathways of influence, linking maternal schooling to child mortality, that result in greater utilization of modern health services have been suggested: educated women are better able to break away from tradition to utilize modern means of safeguarding their own health and that of their children (Caldwell and Caldwell, 1988; Cleland, 1990); educated women are better able to utilize what is available in the community to their advantage (Barrera, 1990; Caldwell, 1990; Goodburn, Ebrahim, and Senapati, 1990); and educated women may be able to make independent decisions regarding their own and their children’s health leading to greater utilization of modern health facilities (Caldwell, 1979; Caldwell, 1986). The studies in the past related to India’s family planning program reveal that most of the sterilization acceptors are illiterate women (Anand, 1984), from the low socio-economic background (Bhatia et al., 1984) and those have already achieved their desired family size (Jamshedji and Pachauri, 1980; Pal and Makepeace, 2003) have also pointed out that female sterilization is a method admired amongst the poorer couples with little assets, poor education and more living children.
Mother’s Age

Age of mothers at the time of first or last births is also important determinants of mother health seeking behaviour and attitudes toward the use of antenatal and delivery assistance. Women giving birth to their first child or to their fifth or higher-order child are generally considered at greater obstetric risk (Amini et al., 1996; Walsh et al., 1993). Many research found consistent result by asserting that younger women are more likely to accept modern healthcare, and older women, with accumulated knowledge on maternal healthcare, were less likely to seek institutional care (Raghupathy, 1996; Elo, 1992). A mother’s age may affect the likelihood of complications or expected complications. Age may also play a role in how women view the advantages of different forms of care (Short and Zhang, 2004). Early childbearing has resulted in adverse health consequences, including damage to the reproductive tract, maternal mortality, pregnancy complications, prenatal and neonatal mortality and low birth weight (Kulkarni, 2003; NFHS-2, 2002) results show that mothers who are younger than 20 years old at the time of first delivery were associated with a 1.7 times higher neo-natal mortality rate and 1.6 times greater infant mortality rate, than were mothers giving birth between 20-29 years.

Mass media exposure

Moreover, electronic media can be an important source of information regarding the benefits of preventive care for maternal health (Navaneetham and Dharmalingam, 2002; Stephenson and Tsui, 2002). Navaneetham and Dharmalingam, 2002) suggest that exposure to electronic media can influence cultural barrier to using modern healthcare. Radio and telecommunications can clearly help in emergencies and with early diagnosis and referral. They can also help improve the management of the health transport system and its efficiency. Information from TRANSAID based on Save the Children reports indicated that the introduction of effective voice communication between health centers, district centers and regional centers led to a 25 percent reduction in distances travelled by health services. In Malawi, ambulance response times to maternity emergencies were reduced from 6 to less than 2 hours by the installation of radios in health centers (Gunneburg, 1999).
Employment and Occupation

Research, suggested that in India women’s employment may have at least one disadvantage: the survival of young children appears to be negatively affected if women work (Basu and Basu, 1991; Kishor, 1992). The same research suggests that gender differentials in child mortality, which in the Indian context largely imply excess female mortality, are reduced when women work. Michael Soh (2007) University of Buea Cameroon, studied reproductive health of Munyenge village in Cameroon mentioned that the nonchalant attitudes of women affect their reproductive health, despite government’s call to strengthen health education for the girl child, intended to emancipate women and to enable them have control over their sexuality and fertility as to minimize their reproductive health problems. Most women (28 out of 40) reported that they lack time to go for antenatal care due to their multiple chores. They conflate domestic and other chores hence tend to neglect their health matters, which they perceive as less important. There is hardly any time available to visit the clinic, after all pregnancy is no illness” (Uchudi, 2001).

Poor women or the financially vulnerable are often treated by health workers as though they are less rational, less capable of making complex decisions regarding when to get pregnant, simply because cultural beliefs devalue their reproductive health (Petchesky, 1992; Doyal, 1995). Women play a central role in subsistence agriculture: they are the prime source of labour. Here, women rent fields and own storehouses for their produce. Their role in feeding the family has implications for their reproductive health (Berer, 1993; Smyke, 1995) as they have to work for long hours to learn the backbreaking subsistence agricultural skills they need in order to increase productivity; hence their clinical enrolment and attendance suffers. Their tasks are not any easier and coupled with frequent pregnancies, deliveries and poor nutrition drains their health down the spiral.

1.8.2. Spatial Factors

Some studies have made broad assessment at a theoretical level to justify geographical analysis of incidence diseases. Most of them highlight the fact that increasing level of artificial nature and proliferation of new diseases were associated with patient’s home environment and occupation which becomes indirect indicator of intricate relationship between space and diseases (Eyles, 1987) for example finds built
environment to be responsible for both mental ill health and also for negative moods. The changing ecological pattern, increased contact between man and environment are found to be associated with emergence of new diseases that lead geographical investigation to deal with such cases. Mostly health problems originate from physical, cultural and biological problems of the community which may have disastrous physical effect on the population. (Learmonth, 1979)

Distance and ease of transport will therefore be factors in a complex decision making process. Sustainable transport and communications systems are essential both for the adequate delivery and for the uptake of healthcare (Leonard, 2000). Health and transport policy are therefore closely linked and policy decisions around the provision of transport should consider the potential health benefits. Similarly health policies need to be mindful of existing and future transport and rural development strategies because these will have an impact upon the success of healthcare delivery and uptake. The distribution of health facilities in rural areas is usually sparse, particularly of hospital-based facilities. Contrary to this, there is usually a concentration of health facilities and manpower in urban areas, where disproportionately more health professionals are also found. It is in rural areas where transportation and other infrastructure may also be at their most deficient and where the effect of poor transport on health is likely to be greatest. Andrew et.al (2001)

The local environment can be conceptualized in at least two basic respects (Yen and Syme, 1999). First, the local environment is a physical space or a fixed geographic location, such as a work place, an urban ghetto, or a rural village, among numerous other sites. The literature demonstrates that the occupants of a particular space end up sharing its tangible features, which affects their health chances irrespective of differences in personal attributes (Macintyre; Ellaway, and Cummins, 2002). For example, neighborhood level air population represents a pervasive attribute because its health-threatening effect does not discriminate between individuals with different social or economic backgrounds. Hence, physical contextual factors, such as local amenities, distance from medical facilities, residential crowding, and pollution, represent a common condition that can generate location-specific health patterns. A neighborhood’s physical attributes can either discourage or encourage help-seeking
behaviors, and is a determinant of access to healthcare (Gould-Ellen; Mijanovich, and Dillman, 2001).

According to the WHO more than 40 to 60 percent of the people in poor countries live more than 8kms from a healthcare facility. A lack of access to healthcare is a widespread concern for the poor and a major threat to their livelihoods. Maternal and infant mortality rates are much higher for the poor who clearly make less use of government provided medical services.

The transport sector is one of the keys to ensuring good delivery of health to the poor, particularly in rural areas. Studies in the UK suggest that distance from residence to an Accident and Emergency Department governs attendance rates, these falling off with longer distances (Hull, 1997). Because of constraints in both facilities and manpower, the situation is very much worse in developing countries; the distances that have to be travelled by communities seeking healthcare are far greater, particularly to hospitals. Little routine quantitative information is collected on this but specific one-off surveys have been informative. For example, in Burkina Faso 40% of health centre users had to walk more than one hour to reach care. These distances may deter people from seeking care, as was demonstrated in Mozambique, where 38% of people who had been sick did not seek treatment because their local facility was too far away (World Bank, 2001). Study in Philippine indicated a 2 percent increase in mortality for every 10 percent increase in distance from healthcare facilities (Wagstaff, 2000).

The rural poor will be disproportionately affected by transport costs as a proportion of their income if they have to travel to seek healthcare. In an example from South Africa, the poor resorted to self-treatment, or to 'traditional methods' closer to home instead of seeking primary care and antenatal care. High transport costs were an important factor that prevented them accessing healthcare (Whittaker, 1985). When community concerns were sought, people expressed preference for a nurse in the village or a weekly visit by a doctor.

A study from Kenya (Airey, 1991) showed that, after building new, direct roads, the better-off increased their use of a district hospital whereas user fees and transport costs continued to be constraints for the poor.
Better access is needed to all of the different levels making up the continuum of maternity care. These are; primary antenatal care with systems for referral hospital based care for checks and emergencies; childbirth and postpartum care. But solutions for improving access also need to overcome constraints due to poor transport services. Community-based approaches have been successful in identifying and prioritizing concerns over transport. For example, in Jordan the cost of transportation was perceived by women to be a barrier to accessing antenatal health facilities. Another example of the complex interplay of transport and health service interventions comes from Matlab in Bangladesh. The decline in maternal mortality was thought to be due not only to community midwives making appropriate referrals to a hospital with obstetric services, but also to their ability to facilitate transport for their patients (Maine et al., 1996).

In Malawi, with Maternal Mortality Rates (MMR) nearly 100 times those of developed countries, a pilot study (Lungi et al, 2000) of bicycle ambulances and community transport plans was introduced to assess their benefit for emergency referral of pregnant women. The problems of access to healthcare are certainly greater in rural areas and Demographic and Health Surveys (DHS) indicate that urban children are much more likely to be immunised than rural children whatever the disease (Sommerfelt and Piani, 1997).

Distance to the nearest health centre, lack of transportation, and perceived quality of services are all thought to be associated with the use of modern healthcare and seeking assistance from trained medical personnel (Noor Ali et al., 1999; Paul, 1992; Paul and Rumsey, 2002; Sundari, 1992). Paul and Rumsey (2002) note that lack of access to healthcare facilities refers to economic and socio-cultural distance as well as physical distance. It is likely to be found an association between frequency of maternal healthcare use and region of residence in Kenya, (Magadi et al., 2000). Glei et al.,(2003) also found large differences in the likelihood of obtaining pregnancy care across region in Guatemala, perhaps due to regional variations socially and geographically. Many studies of maternal health outcomes have found that urban women are more likely than rural women to use antenatal, delivery and post natal care.
as in the case of Jordan (Obermeyer and Potter, 1991), Guatemala (Pebley et al., 1996) and Thailand (Raghuparhy, 1996).

Geographical barriers such as mountainous terrain or poor road conditions also delay access to maternal healthcare. In Haiti road conditions and geography constrain access to both prenatal care and delivery care for women living in rural areas (Guttmacher Institute, 2007). Poor quality of roads affects travel time, makes it difficult for some modes of transport to pass and can lead to an increase in transport prices (Babinard and Roberts, 2006). Borghi et al., (2004) found that the average time it took women to travel to a health facility for delivery in Nepal was 2.8 hours, increasing significantly in the more mountainous regions. A number of studies of the determinants of infant and child mortality include measures of access to health facilities or personnel. Al-Kabir (1984) assesses the effects of distances to hospitals, government dispensaries, family planning clinics, qualified doctors, other doctors, and traditional birth attendants’ on neonatal, post-neonatal, and child mortality in Bangladesh (BFS Data, 1975-76). Hazra (2002) stressed on the pattern of health in Mizoram and its striking differences from the rest of India. Mizoram’s secluded past and the overemphasis of the natural environment on the life style of the people perhaps is linked with the fact that most of the diseases are integrated with the ecology and the natural habitat. Mondal (1997) indicates that the coverage of health services is not low in rural areas; though some physical obstacles do exist in term of accessibility.

Despite women’s numerous reproductive health needs, they have less access via personal consent to healthcare provision. Most women particularly in patriarchal societies (Doyal, 1995; Smyke, 1995) continue to experience discrimination in reproductive healthcare access, and their rights to make decision on whether to terminate a risky pregnancy is often denied them. Their right to an abortion is dependent on their husband’s consent regardless of the wife’s health needs. The society’s message to these women is ‘carry these unwanted pregnancies or risk your lives to end them’ (Royston and Armstrong, 1989).

Every day 1600 women die because of complications of childbirth or pregnancy. This translates into 585,000 deaths per year. On top of this, 50,000,000 experience pregnancy-related complications which, in a large proportion, will lead to
long-term disability (WHO, 1996). Well-organized maternity services are vital to reducing maternal mortality. This normally involves the provision of antenatal care at a primary care level. Women and their attendants (midwives or traditional birth attendants) need to be capable of identifying the need for specialist obstetric care when complications arise (with facilities for Caesarean section, transfusion, antimicrobial therapy etc.), and there needs to be a system of ensuring their safe transfer. Transportation is therefore a key factor in ensuring that the needs of women who require maternity care are met. The availability of maternity services and improvement in their quality are clearly central issues, Andrew, et al (2000).

Though health is important given its connection with the sexual dimension of youth culture, where sex education and the health of adolescent girls are matters of concern, the government is less involved in protecting maternal and child health (Doyal, 1995, Koblinsky et al., 1993). Comprehensive safe motherhood communication strategies must strive to assure that more and more people at national, district, community and household levels know enough, care enough and are prepared enough to reduce maternal deaths (Safe Motherhood, 1995). When it is critical to take prompt action against complications that occur in pregnancy or delivery, the influences of family and community usually determine whether the right choices are made and the right actions are taken. What should be the messages to make pregnant women, husbands, other influential persons in the household and community: know enough, care enough and be prepared enough?

The above literature review underscores intra-country variation on the status of reproductive health and the relationship of geographical factors, socio-economic status and human health in general and women health in particular. It is also important that cultural factors too play important role on women’s health and their interrelationship with urbanization and demographic factors such as age at marriage, marital status, religion and case etc. Besides other factors, education played a key role for the overall related issue on women health and development. In addition, it is important that in order to improve the standard of women in general and mother in particular provision of basic facilities like prenatal, postnatal care, and encourage for institutional deliveries through awareness and establishing educational institution at
the grass root level are extremely important while accessibility of medical facilities makes problems and differences between rural and urban residence.

1.9. Organization of the Manuscript

The manuscript is organized into the following broad chapters.

The first chapter includes the research design, review of literature, and statement of the problem, study area, objectives, database and methodology.

Chapter two consists of general introduction and demographic characteristics as background to the study area covering the whole of Mizoram and Champhai district in particular.

Chapter three provides an analysis of availability of health services with special reference to reproductive healthcare in Mizoram. This covers growth and spatial distribution of health facilities. Systematic overview of growth and development of healthcare infrastructure under the missionaries and under the government are also discussed. It also covers availability and distribution of healthcare facilities such as Hospital (HP), Community Health Centre (CHC), Primary Health Centre (PHC) and Sub-centre from the district level to the village level.

Chapter four analyzes the interface between development and reproductive healthcare in Mizoram. Comparison between Mizoram and others North Eastern states of India on the three fundamental indicators of reproductive healthcare such as antenatal, delivery and postnatal has been made.

Chapter five examines reproductive healthcare with special reference to Champhai district. This covers socio-economic characters of sample towns and villages, selected determinants of mother’s health seeking behaviour, fertility, family planning and mortality.

Chapter six focused on the three fundamental components of reproductive healthcare indicators namely complications during pregnancy and after delivery, spatial and socio-economic factors determining mother’s health seeking behaviour in Champhai district.

The last chapter provides a summary of conclusions and major findings of the study.
Figure 1.1. Location of the Study Area
Figure 1.2. Location of Sample Towns and Villages