Chapter 1

Introduction

Over the past few decades, the world has experienced more rapid and more extensive demographic change than in any other comparable period in history. The best known example of this change is the rapid increase in human numbers. World population grew slowly from 1 billion in 1800 to 2.5 billion in 1950. Since then, growth accelerated and today we stand at 7.00 billion and the UN expects this total to grow to 9.1 billion in 2050. The absolute increments in world population size remain large, about 75 million a year. There are also a number of other important demographic trends. Around the world, women are having fewer children, people are living longer and healthier lives, increasing numbers of migrants are moving from one country to another, family and living arrangements are becoming increasingly diverse, urbanization is proceeding at a very rapid pace, and populations are aging. Population trends vary widely among regions (Population Council, 2005). Virtually all future growth will occur in the developing world, India became only the second country, in the world after China to have crossed the 1 billion mark; its population which was 1.02 billion (census of 2001), now has a population of 1.21 billion according to the latest census (provisional census data 2011) figures released by the home secretary and the registrar General of India on March 31, 2011. India’s population is now larger than the combined population of USA, Indonesia, Brazil, Pakistan and Bangladesh, says the census report. India’s population has been steadily increasing and with its current population growth of 20 million every year it is expected to become the most populous country by the year 2050 in the world.

The growth rate of population is attributed to the natural increase of population, high birth rate, reduced mortality rate and an entry of large scale migration from neighboring countries.
1.1 Concept of Demography

The discipline of demography involves a scientific study of population primarily to study its size, structure or composition and growth. Demography casts a multidisciplinary net, drawing insights from economics, sociology, statistics, medicine, biology, anthropology and history. It is a subject central to understanding of human evolution and variation, because it’s most important elements- fertility and mortality- are fundamental aspects of evolution and variation. Thus, demography employs scientific methods of studying cause and effect relationships and has its own techniques of interpreting the past and present variables that can be used for projecting future population dynamics.

The term ‘demography’ is derived from the two Greek words *demos* meaning ‘people’ or ‘population’ and *graphy* meaning to ‘draw’ or ‘write’ about them. The credit for initiating a new field of empirical research in population study goes to John Graunt. His work, *Natural and Political Observations, Made upon the Bills of Mortality* in 1662 definitely marked the beginning of demography while Achille Guillard(1885) was the first to popularize the word demography when he used the word in his ‘*Element de Statistique humane on demographic Comparée*’.

Like other disciplines, demography has been defined in various ways. Guillard regarded demography as the mathematical knowledge of the general movements and of the physical, social, intellectual and moral conditions of population or still more broadly as the natural and social history of humans. According to Cox (1976) demography is “the study by statistical method of human populations. The constituents of change in these numbers are births, deaths and migration, and the demographers analyse the related functions of fertility, mortality and population transfer”. A more precise definition given by Bouge in his book *Principles of Demography* is; “Demography is the statistical and mathematical study of the size, composition and spatial distribution of human populations, and of changes through the operation of the five processes of fertility, mortality, marriage, migration and social mobility”. According to the United Nations Multilingual Demographic Dictionary (1958), Demography is the scientific study of human populations,
Introduction

Demographic study with special reference to reproductive and child health among Chiru tribe of Manipur primarily with respect to their size, their structure, and their development. Anthropologists, biologists, sociologists, human ecologists, economists and statisticians have all contributed to the sciences of demography. This precisely is the reason it is known as the multi-disciplinary science. A distinction is made between ‘demographic analysis’ and ‘population studies’. Demographic analysis, also known as the formal demography or mathematical demography is confined to the study of the components of population variation and change viz. fertility, mortality and migration. Hauser and Duncan (1959) distinguished two broad areas within the scope of population. These are: demographic analysis, which focuses attention on the study of components of population variation and change; and population studies, which are concerned not only with population variables, but also with relationships between population change and other variables such as social, economic, political and geographical.

Thus demography is understood in the narrow sense as synonymous with ‘demographic analysis’ and in the broad sense as encompassing both demographic analysis and population studies (Shrivastava, 1983). While demography’s traditional approach is adequate to the modeling of population dynamics as strictly biological phenomena, the recent turn toward social theory necessitates a rethinking of fundamental concepts such as fertility (Kertzer and Fricke, 1997).

1.2 Anthropology and Demography

Theoretically, anthropology and demography have often intertwined and overlapped but usually not too explicitly. Anthropologists have been interested in examining the demographic determinants and consequences of cultural processes: while demographers have looked for the cultural causes and effects of demographic process (Swedlund and Armelgoes, 1976; Zubrow, 1979).

The fact that demography concerns human behaviour classifies the discipline definitely in the branch of social and behavioural sciences. Demography has its importance because it is a social science with biological attributes dealing with its changes both quantitatively and qualitatively under the influence of various social, biological and environmental factors. In recent years, demographers have shown a
Chapter 1

Introduction

growing appreciation for anthropological insights in population research (Hodgson, 1983).

To foster interdisciplinary work in demography and anthropology the core research methodologies of the two disciplines—quantitative, on the one hand, and ethnographic, on the other—are sharply contrasting and have capacity to be mutually informing (Howell, 1986). Demography may also be conceived in a broad sense to include, in addition to the quantitative study of population, the study of interrelationships between population and socio-economic, cultural and other variables. There may be a number of distinct factors affecting population changes, which have important anthropological implications. Therefore an anthropological approach to the study of a population may be quite effective in revealing the contribution of these factors.

According to Bernardi (2007) anthropological demography is an important specialty within demography which uses anthropological theory and methods to provide a better understanding of demographic phenomena in current and past populations. Its definition as a specialty within demography is still under development. The growth of anthropological demography lies at the intersection between demography and socio-cultural anthropology and their combined attempts to explain the population processes namely fertility, mortality, etc. Both disciplines focus on mutually complementary aspects of human population studies: demography is statistically oriented and mainly concerned with the dynamic forces defining population size and structure and their variation across time and space, whereas socio-cultural anthropology is interpretative and focuses on the social organization shaping the production and reproduction of human populations. As anthropology is a broad discipline, the focus of anthropological demography is not restricted to the socio-cultural aspect only; it also overlaps with the evolutionary aspects of anthropology, which further explains the bio-demographic aspects of the population (Bernardi, 2007).

The birth of anthropological demography can be traced back to the last two decades of the twentieth century. Theoretical and empirical papers using anthropological demography have appeared in major demographic and anthropological journals since 1980s, and the visibility of anthropological demography in the demographic
community has been enhanced by the constitution of specific interdisciplinary working groups and international committees like IUSSP Committee of Anthropological Demography who bring up the interdisciplinary work in demography and anthropology. In Europe, Anthropological Demography Group of the European Association for Population Studies is concerned with comparative theoretical and methodological collaboration. Anthropological Demography sessions have been held since 1990s in the most important professional meetings dedicated to population issues, such as the meetings of the Population Association of America. Specific grants and graduate programs, such as the Andrew Mellon Foundation population program and the Anthropological demography program at Brown University have been established to enable junior scholars to receive appropriate training in both anthropology and demography and international organizations and funding agencies have put a special emphasis on interdisciplinary approaches (Bernardi, 2007).

1.3 Significance of Demography

The field of demography focuses attention on study of components of population, variation and change. The direct objects of demographic enquiry consist of measurable entities and vital events such as births, deaths and migrations. The field has become so broadened today that it is no longer confined to theoretical problems of speculative and scientific type but also permits practical utilization through interpretation of the population dynamics. The study of the causes and consequences of economic development relating to change in population is an important aspect of demography.

Demographic studies are of utmost importance, as there is a need for continuous flow of information and knowledge about levels of differentials of population forces. Significance of studying demography has been felt since long by many thinkers and populationists. Among the pioneers, Thomas Robert Malthus’s name stands distinctly and he has been rightly conferred the title of the ‘Father of demography’. Malthus in his first published work- Essay on Population (1798) began with the postulate that the power of human reproduction is definitely greater than the power of the earth to
produce subsistence for man and that population when unchecked increases in geometric ratio/progression while subsistence increases only in an arithmetical ratio. As a preventive check of population growth he favoured the postponement of marriage with sexual abstinence prior to marriage and even permanent abstinence from sex. He however, unequivocally disapproved of birth control.

Demography includes qualitative and quantitative aspects of population. It studies about the size of population, immigration and emigration, besides the composition of population according to age, gender, ethnic groups and regional density and the occupational and income patterns. It also studies the causes and the consequences of the changes in the size and composition of the population. The relationship between the composition of a population and its mortality, fertility and net migration is complementary i.e., composition affects demographic processes, and these processes in turn affect the composition of the population by determining the age and sex structure of the population.

The disproportionate growth in population, as compared to the resources, especially in developing and underdeveloped countries is putting a considerable strain on the health, and socio economic conditions of these nations. The demographic studies have consequently assumed a greater significance in the scale of events. A demographer is ultimately interested in human welfare. It is now realised if demographer fail to play their role in focusing the attention of a nation on population problems the nation will reach a point of no return in almost all walks of life and every activity come under heavy strain. Demographic studies help a nation to bring the population changes within reasonable limit. Demographic data also helps the political authorities by giving information about the rate at which number of voters is increasing. A nation comes to know how far the rate of population of growth is keeping pace with that of economic development. Such data also help in the planning and conduct of industry and commerce besides, in the provision of social needs and preservation of law and order. The present understanding of demography makes it possible to project population changes several decades into the future, which helps in planning for the millennium.
1.4 Brief History of Demography

Significance of studying human population was realized even in the ancient past. It is very difficult to specifically mention the beginning of demographics studies in the world. Theories of population precede the scientific study of demographic statistics by many centuries. There are indications that population records regarding socio-economic characteristics of the people were maintained during the times when Egyptian, Chinese, Greek and ancient Indian civilizations flourished in the world but the concept of a population does not appear to have been entertained until the beginning of the seventeenth century AD.

According to Durand (1962) Graunt laid the foundation of this new field of empirical research in 1662 by publishing “Natural and political observations made upon the bills of mortality”. His work provided the earliest assessments of size and trends of populations. Although the collection of demographic data on a nation-wide scale did not begin until the nineteenth century, interest in population grew rapidly after Graunt. Petty, a famous contemporary of Graunt, talked about population growth, urbanization, unemployment and income. Later, Halley attempted to prepare empirical life tables on the basis of recorded statistics (Encyclopedia Britannica, 1993).

The next leading demographic researcher was Sussmilch, who assembled large masses of demographic data from parishes in Germany during the first half of the eighteenth century about different parameters such as age at marriage, tendency towards growth of population, frequency and causes of deaths, conditions affecting fertility, etc. and studied them in detail. By combining Swedish, German and French data in massive quantity he tried to construct mortality tables that have universal applicability (Lorimer, 1959).

Malthusian theory had been severely criticised by numerous thinkers/scholars and writers. Marx’s critique of Malthusian population theory led to several reformations of the hypothesized relationships between population and its ability to feed itself.
Marx (1906) proposed that only fundamental changes in the social and economic structure from capitalism to communism would automatically negate population pressure and improves the conditions of the poor. But this theory also raised intense controversies. After Malthus, many other demographers came forward and considered the problem of population growth. Demographic history has gone through many other theories and statements propounded by several notable persons, but none of those could claim universal acceptability (Wiligan and Lynch, 1982).

During the nineteenth century collection of comprehensive demographic data had started. The first periodical enumeration began in United States of America in the year 1790 and in England and France in 1801. It was in France that the birth rate first started declining towards the end of the eighteenth century, which continued in the nineteenth century. Gradually, throughout Europe, and in North America decline in birth rate became the main point of interest in population related studies. Earlier there was little opportunity for demographers to analyse the change in any detail because the data were not available. In the second half of the nineteenth century, however, this branch of demography began to develop. Thereafter, census were conducted by a number of countries by incorporating more information to be gathered regarding matters related to population dynamics (Cox, 1976)

In India also, the counting of population was mentioned in the great epic – Ramayana and Mahabharata. References about population counting were also cited in Arthasastra of Kautilya and more recently in Ain-i-Akbari. In Arthashastra, a treatise on policy attributed to Kautilya, the Prime Minister of Chandragupta Maurya (323-300 BC.), a detailed description on how to conduct a population, economic and agricultural census was given (Bhende and Kanitkar, 1998). Data on population size became available on a regular basis in India only after the establishment of the system of decennial census in 1872. It can be said that the beginning of census in India is starting point of population studies in India. In 1930, All India Population Conference was arranged for the first time to discuss the population problems under various great personnels. In 1944, Population Data Committee was set up under the chairmanship of Y.M. Yeatts as an advisor board to the Government about the availability of data which was linked with the over growth of the Indian population.
After Independence, various economic development programs were conducted all over the country. In 1954, in order to get the report on the population growth and family related problems, the Planning commission appointed a committee which further fixed the Population Planning Committee and Population Research and Program Committee. The main purposes of these committees were to check the actual causes of rapid growing Indian population. In such way, a Family Planning Board and a Sub Committee on demographic studies were set up in 1956; and under these committees, a number of demographic centre were established throughout the country (http://censusindia.gov.in/Data_Products/Library/Indian_perceptive_link/History_link/censushistory.htm). Now in India too, the concept of Anthropological Demography is emerging.

1.5 Population Distribution and Composition

A study of the population and characteristics of population i.e., the composition of the population is an important aspect of the population study. This aspect of demography covers the following basic personal, social and economic attribute of any population namely; age, gender, ethnic group, religion, marital status, household composition, educational attainment, literacy, occupation, income, etc. Characteristics like age and gender are biological attributes while education and economic status are social attributes. Population percentage and population density are two ways to measure population distribution. Distribution of a population is influenced by geographic condition, socio-economic factors and demographic variables. The population distribution is usually studied on the basis of classification of residence i.e., population distribution between urban-rural areas and the way changes are taking place in each category. The study of composition of the population helps us to understand its basic structure along with inter-population variation.

1.5.1 Age structure

The age structure is one of the fundamental characteristics of the population. It is one of the important factors for the study of fertility, parity and mortality. The United Nations (1967) has defined age as the estimated or calculated interval of time between the date of birth and date of census, expressed in completed solar years. The
information on age is collected by asking the date of birth of the individual. Age composition in a population can be described through certain parameters:

1.5.1.1 Median Age

It is the age that divides a population into two numerically equal groups, exactly half the population is older and half is younger. It is generally calculated to assign whether the population group is young or old. According to Shryock and Siegel (1976), a population group can be defined as ‘young’ if the median age is less than 20, and if it is 30 or over, then the population is an old population. An intermediate aged population is one whose median age is between 20 and 29.

1.5.1.2 Age Dependency

It is another measure to study the age structure of a population group. It is defined as the ratio of persons in the ‘dependent ages’ (under 15 and over 59) to those in the ‘economically productive’ ages (Bhende and Kanitkar, 1998). Here, economically productive ages vary from one country to another according to governmental service plan. In India, the upper limit of the age group is 59 years. Young dependency ratio is the ratio of population under 15 to population 15 to 59 years, and old dependency ratio is the ratio of population of 60 years and above to population of economically productive ages (15-59). Index of aging is another measure which determines the relative number of old persons in a population.

1.5.2 Sex structure

Gender of a person is an identifiable characteristic. It is one of the basic demographic characteristics of a population as it influences the incidence of births, deaths and marriages (Peterson & Peterson, 1986). The measures generally adopted for the study of sex structure of any population is the percentage of males in the population or masculinity proportion and the other one is sex ratio which is the principal and the most important measure. Sex ratio of a population may be defined as the number of females per 1000 males. The overall sex ratio is the result of the joint effect of the sex
ratio at the birth, the sex differentials in mortality and the sex selective migration. Sex composition can also be described through the following parameters;

1.5.2.1 Sex ratio

It is the ratio of females to 1000 males in a population. Sex ratio of a population is affected by different factors like sex ratio at birth, differential patterns of mortality for males and females, differential patterns of male and female specific migration in the population, etc.

1.5.2.2 Masculinity proportion

It is another measure of sex composition of a population. Masculinity proportion is the ratio of males to the total population. It depicts the balance of the sexes in a population, in terms of proportions or percentages at a specified time. When the age and gender compositions of a population are plotted graphically; we get a structure termed as population pyramid. As goes with the graphic illustrations, age pyramids make the age and gender composition visual and easy to understand at a glance. The population pyramid may be based on absolute numbers or on percentages. According to Thompson and Lewis (1965), a population is always changing, whereas a pyramid is a static picture. The proportions of people in the various age and gender categories change because of continuous action of mortality, fertility and migration. Younger age structure is representative of high fertility population while older age structure is typical of low fertility population.

1.5.3 Marital status

Marital status is acquired characteristic. Marriage involves the first step in the formation of a family and marital status is an important factor affecting fertility. The pattern of marital status distribution of a population is determined by the combined effect of various biological, social, economic, religious and legal factors affecting marriage. The data on marital status are customarily classified in the following four categories; namely never married, currently married, widowed and divorced or
The last three groups where combined are referred to as “ever married” group.

1.5.4 Literacy and educational attainment

The United Nations (1967) has defined literacy as the ability of a person to read and write with an understanding of a short simple statement on his/her everyday life. Education is an important variable affecting demographic behaviour concerning marriage, fertility, mortality and migration. There is a relationship between the educational attainment of woman and their fertility, the practice of family planning as well as age at marriage. Infant mortality is affected by educational status of the mother. For the purpose of census a person aged seven years and above, who can both read and write with understanding in any language, is treated as literate.

1.5.5 Occupational structure

The occupational structure of a population is an index of its economic profile. Occupational distribution and participation rates of a population particularly females are often taken as indicators to assess the impact of economic development. As per census of India report a person may be defined as a worker, if his/her main activity, is participation, physically or mentally, in any economically productive work.

Income as a determinant of population dynamics directly or indirectly, not only influences the economic status, the relationship between low economic conditions and high fertility and mortality in the developing countries, as against low fertility and mortality in the developing ones. It also affects the nutritional status, age at marriage, birth interval, birth weight and foetal wastages.

Data on income, fertility relationship demonstrate that income is indeed strongly related to fertility though the relationship is said to be a complex and perplexing one. Researchers have found fertility to be negatively related to female earnings (Becker, 1981; Schultz, 1985)

Sander (1990) in a study on fertility behavior in United States for four periods confirmed that economic factors, particularly the earning ability of women affect
fertility. An increase in the earning ability of women results in an increase on the price of raising children thereby reducing fertility. However, there are some studies reported where socio-economic status has been shown as having a negative association with fertility (Saxena, 1965).

1.5.6 Religion

Religion is an important characteristic of a population as it influences its demographic behaviour such as marriage, fertility and family planning, by presenting a code of life. In India, religion and castes are important variables for social stratification. In demographic studies, analysis of religion is usually undertaken by describing the percentage distribution of people in various religious groups, which is cross classified with other variables such as gender and rural urban residence.

1.6 Components of Population Distribution and Changes

The population process cannot be independently understood as its determinants are very complex in nature. Fertility, mortality, marriage, migration and social mobility are continuously at work within a population determining its size, composition and distribution. So, the knowledge of these demographic processes is needed for study of population changes.

1.6.1 Fertility

Human fertility is responsible for the biological replacement and maintenance of the human species. In fact, the fertility is the major counteracting force to population attrition from mortality and therefore, has a significant impact as an expansionary force in population dynamics. The United Nations Report 1973 elucidates that within the limit established by the physiological factors, a multitude of economic, social and cultural factors are the ultimate determinants of fertility level and its variation in the different societies. Fertility may be defined as actual reproductive performance of a woman or a group of women (Thompson and Lewis, 1965). On the other hand, a woman of her physiological capacity to conceive and bear children is termed as the fecund period, which has two extremes, viz., menarche and menopause. In
demographic studies, the reproductive span i.e., the child bearing period of women is usually taken to as between 15-49 years of age. Thus, a fecund woman may or may not be fertile but a fertile woman must be fecund.

In the present day world, it is fertility which is drawing a lot of attention because the mortality rates have fallen considerably while fertility rates have not. When replacement is quicker and more in number than depletion, obviously there is rapid growth. Therefore only bringing down fertility can bring down the population growth. While the measures to bring down mortality have met with success, it has not been so in the case of fertility. This is because the latter is much of a socially controlled process influenced by a number of interrelated biological as well as socio-cultural factors such as age at menarche, age at marriage, age at menopause, education, desired family size, socio-economic status, contraception and so on.

Fertility rates vary broadly from one society to the next and from one social group to the other. Numerous studies have sought to discover the causes, correlates and consequences of variations and changes in fertility. Ghosh (1975) observed that fertility is broadly an outcome of the interaction between fecundity and desire for children. Caldwell and Caldwell (1987) explained for continued high fertility in Sub-Saharan Africa. They claim that the reasons are cultural and have much to do with a religious belief system that operates directly to sustain high fertility.

In the recent demographic literature the term “Natural fertility” has been used as a virtual synonym for fertility in pre-industrial societies (Knodel, 1983; Wood, 1990). Natural fertility was defined by Henry (1961) as “fertility which exists or has existed in the absence of deliberate birth control. Control may be said to exist when the behaviour of the couple is bound to the number of children already born and is modified when this number reaches the maximum which the couple does not want to exceed. As the growth and survival of populations are dependent on the fertility component, it has been attracting worldwide attention since long. Fertility constitutes the most important demographic component of demographic transition theory that needs special attention. A number of theories, models, and conceptual and analytical
Frameworks have been developed to understand the linkages between different socio-economic variables and fertility.

The variations in fertility that are observed within or between population groups are known as differential fertility. Fertility differentials are to be analysed in relation to their different socio-demographic characteristics. In order to understand the causes of fertility variations, it is necessary to analyse the mechanisms through which socio-economic variables influence fertility. Variables that have a direct inevitable effect on fertility- inevitable in the sense that any change in one of these variables translates immediately into a change in fertility are known as proximate determinants of fertility. The “proximate determinant” approach was originally formulated by Davis and Blake (1956) and later on refined by Bongaarts (1978) and others. The proximate determinants are the biological and behavioural factors through which social, economic, and environmental variables affect fertility.

Davis and Blake (1956) identified a set of eleven proximate determinants, which they called “intermediate fertility variables”. To allow simple quantification, Bongaarts (1978) collapsed set of 11 intermediate fertility variables into eight factors grouped in three broad categories.

I. Exposure Factors
   1. Proportion married

II. Deliberate marital fertility control factors
   2. Contraception
   3. Induced Abortion

III. Natural marital fertility factors
   4. Lactational infecundability
   5. Frequency of Intercourse
   6. Sterility
   7. Spontaneous intrauterine mortality
   8. Duration of the fertile period
While fertility variation can always be traced to variations in one or more of the intermediate variables, the extent of variation differs among the variables. The main events of phenomenon associated with fertility are age at menarche, age at marriage and age at menopause.

1.6.1.1 Age at menarche

Menarche is usually defined as the first appearance of menstrual flow among the pubescent girls. It marks the potential beginning of childbearing years. The age at menarche has been of interest to the human biologists largely because of its genetic nature and marked population variability. A number of studies on age at menarche have been conducted so far both in India and abroad. One of the earliest reports on age at menarche of Indian women was given by Cujel (1920). The mean menarcheal age of various endogamous groups has been subsequently reported by a number of investigators (Sen, 1953; Shah, 1958; Rakshit, 1960). The reproductive span of female is constituted by the period between the onset of menarche and menopause, the age at menarche, thus can be used as a measure of reproductive physiology partially reflecting the biological capacity of a woman to reproduce. Factors like genetics, nutrition, socio-economic conditions affect the age at menarche (Eveleth and Tanner 1976). The age at which menarche occurs varies considerably in different populations. The diversity within Indian population for cultural, social, geographical and genetic factors is also manifested in the attainment of menarche. A study conducted by Sharma (1990) revealed that late achievement of menarche in population group living at higher altitude may be explained on the basis of low oxygen pressure of the atmosphere, nutrition and excessive physical activity besides perhaps physiological factors.

Age at menarche is also considered as an indicator of quality of life of a population since a number of bio-social factors influence its occurrence (Prado et al., 1995). A worldwide phenomenon of secular trend of advancing age at menarche is reported by Low et al. (1982) and Wolanski et al. (1998) among others. Summing up a large number of studies available on age at menarche among the women of different populations from various parts of India, Singh and Shukla (1992) found not only inter
population variation but also regional variation - with the women from western region of India reporting high mean menarcheal age and that of the eastern part showing the lowest values.

1.6.1.2 Age at menopause

Menopause indicates the end of the fertility period of a woman. Menopause is defined as the permanent cessation of menstruation resulting from less ovarian follicular activity (WHO, 1981). The female reproductive life ends with varying degree of suddenness with the menopause. It is a primary limiting factor of fertility. It is the culmination of a gradual decline in fecundity with increasing age. Menopause varies considerably from female to female. Various factors such as nutritional, genetic, socio-economic, physical environment, geographic and climatic have been reported to affect the menopause (Beall, 1983; Standford et al, 1987; Kirchengast, 1992; Do et al, 1998; ICMR, 1998; Thompson et al, 2001).

1.6.1.3 Age at marriage

The age at which a woman marries has a great impact on fertility and also is important social factor. Marriage may be defined as a legal union of persons of opposite gender. The religious or social customs or the law of the country governs the institution of marriage. Prevalence of early age at marriage has a number of demographic, social and economic implications, especially in areas where fertility is high because the length of female reproductive period is largely determined by age at which she enters marital union. Since most of the fertility occurs in marriage, a rise in the age of marriage can reduce fertility. Malthus was the first person to suggest that postponement of marriage contribute substantially towards a reduction in the level of fertility by shortening the total reproductive span of the female. In general, higher marriage rates, especially at younger ages tend to higher fertility because married woman are exposed to risk of conception for a longer period. Divorces and widowhood if not followed by remarriages bring the opposite result.
1.6.2 Measures of fertility

Based on the type of the data used (vital registration, census and surveys) three different types of measures of fertility may be computed. First is called as period measures for they are related to a particular period and are based on data referring to that period. The vital registration system provides the data for such measures. The second type of measure is linked with reproductive performance of women upto a certain point of time. Data from census and sample survey are used for this calculation. The third type of measures of fertility attempts to measure fertility indirectly on the basis of the age and sex distribution of the population as obtained from a census. Some of the most important and commonly used measures are discussed below.

1.6.2.1 Child-Woman Ratio

It is measured as the ratio between the numbers of children of the age less than 5 years to the total number of women of reproductive age group multiplied by 1000. Though it is easy method of finding out ratio, it is not very precise as an index of fertility. Its evidence is indirectly derived from the group of survivors, rather than from the number of actual births and thus it is affected by several other factors besides fertility alone.

1.6.2.2 Crude Birth Rate

It is computed as the ratio of the total live births in a specific year in a particular area to the total mid-year population of that area multiplied by 1000. This is the most common and easily computed measures of fertility. However, it carries no implication as to why the birth rates are different in different years and between different populations at the same time. It also considers the total population while in no country the whole population can always be fertile.

1.6.2.3 General Fertility Rate

This rate can be computed as the ratio of total live births in a specific year in a particular area to the number of women in the child-bearing age, multiplied by 1000.
Though this rate is more refined than the crude birth rate, it must be noted that it is not a very effective refinement, for it is related to all the women in the child-bearing age group. But it is well known that fecundity is not uniformly distributed.

1.6.2.4 Age Specific Fertility Rates

This rate can be defined as the ratio of the number of live births to mothers of a specified age group in the population during a year to the number of mid-year female population in the same age group, multiplied by 1000. Age specific fertility rates are not affected by any variations in age structure and therefore, these rates may be considered to be refined. However, when comparisons between two population groups have to be made, the entire procedure becomes rather cumbersome.

1.6.2.5 Total Fertility Rate

Total fertility rate is the sum of the age specific fertility rates of women in each five-year age group from 15 to 44 or 49 years. This rate is a hypothetical rate indicating ‘the total number of children that would ever be born to a (hypothetical) group of women, if the group passed through its reproductive life span with the same birth rates in each year of age’ (Communication Action Research Centre, 1964-68).

1.6.2.6 Gross Reproduction rate

Gross reproduction rate indicates the number of daughters each woman can bear by the time her reproductive period is over; if she continues to have children according to a particular schedule of age specific fertility rates, throughout her reproductive period. It can be computed by summing up all the age specific fertility rates obtained for females children only, multiplying the sum by 5, and finally dividing the product by 1000.

1.6.3 Mortality

Another important factor that influences the population growth is mortality. According to United Nations and World Health Organization, death is the permanent disappearance of all evidence of life at any time after birth has taken place (post natal).
cessation of vital functions without capacity of resuscitation (WHO, 1978). Thus, 
mortality is death after birth, and all deaths prior to a live birth are not considered as 
death, but death before birth is known as foetal wastage or foetal mortality. And live 
birth is the complete expulsion or extraction of a product of conception from its 
mother, irrespective of the duration of pregnancy, which after such separation, 
breathes or shows any other evidence of life, such as beating of the heart, pulsation of 
the umbilical cord, etc.; each product of such a birth is considered as live born (WHO, 
1967).

Mortality is responsible for reduction of population growth. However, in the past few 
decades, there has been the unprecedented increase in the population, particularly in 
the developing countries like India, primarily due to the remarkable fall in mortality. 
There can be little doubt that the massive investment in health, sanitation, water 
supply, and other sectors have directly contributed to decline in the mortality rates 
(Preston, 1978; Kshatriya et al., 1997). Reduction in mortality has been associated 
with medical inventions and expansion of medical facilities (Srivastava, 1994).

Unlike fertility, attempt to regulate mortality has been relatively successful almost 
everywhere. Whereas industrialised countries reduced their death rate since 1650, the 
developing countries had done so from 1920 onwards. Thus, population pressure 
increased rapidly in developing regions due to uncontrolled fertility, creating a state 
of disequilibria (Dorn, 1972).

The study of mortality is useful for analysing current demographic conditions as well 
as for determining the prospects of potential changes in mortality condition of the 
future. The statistics on death in population; cross classified by age, gender and the 
cause of death are of great value for the formulation, implementation and evaluation 
of public health programmes in the country. Now, with the launching of intensive, 
long-range and big budget family welfare program in India, the need for reliable 
estimates of the vital rates has become all the more important.

Offspring or infant mortality is significant, especially because mortality during the 
first year of life is invariably high for all countries, irrespective of whether the overall 
levels of mortality are high or low. There is no society which is free from neo-natal
and infant mortality, whether it is advanced or backward. Death rate is high during infancy, childhood and in aged of above 55 years, but the maximum attention is given to offspring mortality because aged death is considered as natural. High rate of offspring mortality disturbs the population growth and may change the evolutionary fate of the population group. If the death of a baby takes place before he attains 4 weeks, then it is called neo-natal mortality. If the death takes after 4 weeks of age but before 12 months, then it is called infant mortality. If the death takes place between 1 - 4 years of age group, then it is known as early child mortality and if it occurs between 4 - 9 years old, it is late child mortality. Endogenous and exogenous factors are two types of underlying factors that affect the infant mortality. Endogenous factors are mainly biological and include malformation, premature birth, low birth weight and obstetrical trauma, while exogenous factors are mainly socio-economic and environmental and include poor hygiene, lack of nutrition and infection. Infant mortality rate is not only a reliable indicator of health status and well-being of the children but it is also an indicator of socio-economic development of the population.

All the deaths in mother’s womb, whatever the cause or the duration of pregnancy may be, constitute intra-uterine mortality or reproductive wastage. Abortions and still births are included in such mortality. It is accepted that the risk of pregnancy wastage is highest at young childbearing ages, drops to minimum during the twenties and then rise continuously till the end of the childbearing age. High rate of foetal, infant and child mortality affects the parent’s attitudes towards a controlled family size. It is therefore important to arrive at accurate estimate of infant mortality along with some realistic assessment of the wastage of pregnancies. Maternal mortality is another serious problem in our country. Death of a woman while giving birth to baby or just after giving birth is referred to as maternal mortality.

1.6.4 Measures of Mortality

Various measures are employed in the analysis of mortality. It is however, sufficient to describe the following basic measures for a general understanding of the process of mortality.
1.6.4.1 Crude death rate

The crude death rate is the most simple and the most commonly used measure of mortality, which can be quickly calculated and at the same time easily understood. *Crude death rate may be defined as the ratio of the number of deaths which occur within a given population during a specified year, to the size of total population at mid-year, multiplied by 1000.*

1.6.4.2 Age Specific Death Rate

*It is the ratio of number of deaths in a specific section of population of an area in a given period of time to the total population of that specific area in the same period, multiplied by 1000.* The highest mortality usually occurs in the infant period. Therefore, it is required to measure the infant mortality separately.

1.6.4.3 Infant Death Rate

*This is the ratio of the number of Infants (0 to 1 year) death in a specific period of time in a particular area to the total number of live births occurred in that period of time in that particular area, multiplied by 1000.*

1.6.4.4 Maternal Mortality Rate

*The rate of maternal mortality in so far as after the birth of the child is concerned can be found out by first finding out the number of deaths which occur among the females of child bearing age from child birth during a given year and pertaining to a given area and dividing that by the number of live births occurring among the female population of that area during the same year, multiplied 1000.*

1.7 Migration

Migration is another important demographic parameter that influences the population structure. Migration is a form of spatial mobility between one geographical unit and another involving a permanent change of residence (UN’s Multilingual Demographic Dictionary, 1958). According to Weinberg (1961), migration is the changing of the place of abode permanently or, when temporarily for an appreciable duration. It is
used symbolically in the transition from one surrounding to another in the course of human life. It is a response of human economic, social and demographic forces in the environment. Migration, both internal (movement of people within the national boundaries) and international (movement of people out of the political boundaries of the nation), redistributes people in terms of resources, labour force participation, industrial attachment, job opportunities, housing facilities, etc. Migration, through the effect on nature and size of the population, results in various socio-economic changes at both sending and receiving areas. It has led to upward social mobility of migrants and has both positive and negative impact on economy of the respective countries or regions.

1.7.1 Measures of migration

Migration can be estimated directly or indirectly from the census or survey data. **Direct techniques** of measuring migration are based on the data obtained from direct questions asked during a census or survey. In almost every census, a question is being asked on the place of birth. On the basis of information obtained, the number of migrations can be estimated. Sometime migration is for short period of time and the migrant returns back to his original place. The above questions do not highlight this factor. So, sometimes a question is being asked on the duration of residence. This approach takes into account the number of return migrants. These two approaches measure only a single movement. Migration can be more than once involving more than two places. Thus, another approach is the place of last residence. This helps in obtaining information on the last residence. Migration rate is also not same all the time. So, sometime information on the place of residence at a fixed prior date is obtained to study ‘period migration rate’.

1.8 Demographic research

Usually the countries of the world are classified into two categories as developed and developing based on certain indicators of social and economic advancement. Countries having a higher per capita income, a higher level of literacy and educational attainment, a larger proportion of urban population, lower birth rate and lower rate of population growth, higher status of women, better means of transportation and
communication, better facilities of medical health care, higher consumption of energy, etc. are considered as developed. According to the UN, the following regions of the world are included in the category of developed: North America, Japan, Europe, Australia, New Zealand and Temperate South America. The rest of the world is considered as developing. India too comes under the latter category. Demographers are more interested in the study among developing countries. The demographic structures of these countries are the subject matter of the country’s standard.

The first official census of India was started in 1871 and it is conducted every 10 years. Therefore, it is possible to study the changes in population size, structure and characteristic during the 140 years. The estimation of population size in India during the ancient, medieval and the early modern periods have been derived by Kinsley Davis from a careful examination of the archaeological evidence, relevant literature and historical records left behind by scholars of history (Davis, 1968). Other than the decadal census, many scholars also conducted the demographic studies among different populations with different objectives. An attempt is being made to review some of the relevant findings.

The importance and application of demographic studies is ever growing. The use of computer has made possible a much greater utilization of quantitative data, as in demographic studies because of diversity in its population. Therefore in India demographic studies have been conducted on rural (Dandekar, 1959; Jain, 1985; Levine et al., 1992), urban (Jolly, 1981; Saksena and Srivastava, 1984; Krishna and Patnaik, 1997) as well as tribal (Prakash and Malik, 1990; Kar, 1993; Kshatriya et al., 1997) populations by various anthropologists to view different aspects of demography.

In India, the data on population became available on a regular basis only after the establishment of the system of decennial census in 1872. The first post-independence census report in 1951 departed considerably from the previous census reports in respect of the treatment of data, which included changes in size and structure of the Indian population and underscored their implications for the level of living of the population. Mysore population study, an important population study in India, jointly
sponsored by the United Nations and the government of India was carried successfully during 1952-53 (Bhende and Kanitkar, 1994). The study contributed to the development of population research in India in many ways and served as a model for many other surveys, which followed. In 1963, India hosted the first Asian Population Conference in New Delhi, an important event in the history of demographic research in India. The sample Registration Scheme, initiated by the Registrar-General of India in 1964-65, was a step forward in solving the problem of obtaining reliable estimates of birth and death rates of natural growth. The progress made by this system in obtaining reliable estimates has been quite promising.

**Figure.1:** Processes affecting population composition and characteristics

Fertility, mortality, marriage, migration and social mobility cause changes in size, composition of a population and consequently these processes are the dynamic elements of demographic analysis (Figure.1)

**Fertility**

Fertility plays an important role for the biological continuance of the human species. Fertility of a woman is indicated by the number of children she bears during her entire reproductive life. A woman is considered fertile if she has ever borne a live child (Jones, 1974). In simple words, fertility means the actual reproductive performance of
women or couples. Though it is a biological, phenomenon there are a number of other factors influencing the fertility among different populations.

Generally, fertility among tribals is high and varies from one tribe to another. According to Majumdar (1947) economic conditions were largely responsible for such variations. He reported high fertility among the tribes as he measured the number of children ever born among six tribes (Ho - 6.2, Oraon - 6.0, Kuki - 6.5, Khond - 7.2, Taru - 6.6 and Saora - 5.7). Verma (1977) also reported that the average number of children born to ever-married women aged 45-49 years as 6.96 among Santhals and 6.33 among Birhor tribes. However, there are a few studies showing that the average number of children born to ever-married females of post-child bearing ages is less than five. While analyzing the factors affecting the fertility, especially among the tribals, Bhasin and Bashin (1990) had found that biological, sociological and economic factors always influence the fertility among various communities of Sikkim and Himachal Pradesh. Mutharayappa (1994) highlighted the importance of cultural practices rather than the socio-economic factors. He studied among Jenu Kurubas and Kadu Kurubas of Karnataka and found cultural practices such as age at marriage, multiple marriage, ways of acquiring mates, etc. affecting the fertility.

The communities have a desire of having high fertility, preferably sons because only after bearing sons, they make themselves as socially eligible for inheriting the family’s properties. Agreeing to this study, Barua (1992) also points out that fertility is dependent on physiological and socio-cultural factors. Age at menarche, age at marriage and age at menopause are identified as biological factors and religion, education and economic status are defined as socio-cultural factors which affect the fertility of Tarung tribe of Assam. Kshatriya et al., (1993) have reported a total fertility rate of 5.6 among Bison-Horn Maria tribe of Madhya Pradesh which is higher than the total fertility rate of Indian national population (4.55). Socio-economic, cultural, environmental, sanitation, awareness of health and health care practices are considered as the important factors which influence the result in high fertility.

Similarly a high fertility is reported among Mirdha tribe of Orissa (Choudhury et al., 1994). According to this study, worst environmental condition, poverty, illiteracy,
unawareness of family planning have been specified as responsible factors for this high fertility rate. In a comparative study, Pandey (1994) has found that, tribal groups have an earlier age at marriage compared to the non-tribal group. Age at marriage, duration of fertile age, potentiality of age specific fertility rate of female are so much indebted to determine the fertility. But these factors are sometimes coupled with social and cultural rules, educational, financial condition, socially considered age of marriage and caste. Sengupta and Chakravarty (1995) have mentioned the correlation between fertility and types of family among Ahom tribe of Assam. Low fertility has been registered among joint families compared to nuclear families. Similarly, fertility is found to be high among rural women than the urban women. Pandey and Tiwari (1996) also reported a high rate of fertility and mortality among hill Korwa tribe of Madhya Pradesh. The number of surviving offspring was reported to be 1.9 per mother. Similar condition is also observed among Abujmara tribe of Madhya Pradesh (Pandey and Goel, 1999). On the other hand, Guha (1997) has reported a low rate of fertility among Bhotiya, a nomadic tribe of Uttar Pradesh (now Uttarakhand). The author tries to correlate this low fertility with their way of living. Being nomadic, their marital relation is disturbed and moreover, they felt very difficult to bear more number of offspring and they practised their indigenous birth control methods.

Chaturvedi et al. (1998) have pointed out that the socio-economic factors affect the fertility. Education of father, occupation of father and age difference between the couple do not affect the fertility but educational level and occupational status of mother do influence the fertility. Elizabeth et al. (2000) have reported crude birth rate, general fertility rate, total fertility rate and gross fertility rate as 32.83, 132.62, 3.4 and 1.84, respectively among the Thoti tribe of Andhra Pradesh. Saraswathy et al. (2001) have also reported a high fertility with low literacy rate among Kolams of Andhra Pradesh, further suggesting that education affects the fertility. Patra (2001) has also reported the crude birth rate, general fertility rate and total fertility rate of Raji of Uttarakhand (now Uttar Pradesh) as 49.42, 213.2 and 7.4, respectively. Low level of socio-economic status, high extent of illiteracy and negligence on family planning, are responsible for such a high fertility among the population.
Biswas and Kapoor (2005) studied the fertility profile of the Saharia of Madhya Pradesh and found poor health status of a large number of women and unavailability of proper clinical facilities in the study area. Illiteracy, low socio-economic condition, early age at marriage, poor health status of women, etc., were attributed to be the factors influencing fertility of Saharia women. Murry et al., (2005) studied the fertility differentials among 546 ever-married Lotha Naga tribe women of Wokha district of Nagaland. The CBR, GFR, TFR and GRR of the Lothas were found to be 28.35, 192.05, 7.15 and 3.88, respectively. Variables such as education, use of Birth Control Measures and age at menarche were not found to have contributed significantly to fertility. Socio-cultural factors seem to have played an important role in determining fertility.

In 2007, Bhasin and Nag studied the fertility differentials of six tribes (Bhil, Mina, Kathodi, Damor, Saharia and Garasia) of Rajasthan. For the study, 900 nuclear families belonging to 661 households were randomly selected. Differences in levels of fertility across scheduled tribes seemed to be due to the influence of independent determinants as well as different levels of development. Minas showed lesser fertility levels as compared to the other tribes under study. Factors affecting fertility such as, economic and socio-cultural characteristics, physical environment, etc. showed significant influence on fertility of all the tribes.

Khiloni (2009) studied the Anal women of Lambung Village, Chandel District, Manipur. The study made an attempt to find out the factors that affect fertility such as age at marriage, education and economic status. The Child Women Ratio, Crude Birth Rate, General Fertility Rate and Total Fertility Rate of the Anal Naga were found to be 227.96, 11.4, 33.43 and 4.3, respectively. The study revealed that age at marriage, education and economic status of women has an impact on fertility.

1.8.1 Factors affecting Fertility: A review

Age at Menarche

It is an important factor for determining fertility which is again influenced by socio-economic factors. Menarche is the primary indicator of the onset of sexual maturation.
in females. Menarche though does not indicate the complete attainment of sexual maturity or complete reproductive function, mainly because the early menstruation occurs without any ovum being shed during the first year or more after the menarche (Bongaarts, 1975; Kar and Mahanta, 1975). In many societies the onset of menstruation is a landmark and is celebrated. Earlier in India, age at menarche in many societies also determined age at marriage, as girls were married off immediately after the attainment of menarche (Mendelbaum, 1974). Mean age at menarche is also considered as an indicator of quality of life of a population since a number of bi-social factors influence its occurrence (Prado et al., 1995).

Figure 1.2: Factors influencing Fertility of a woman

In India the age at menarche varies among different populations. Bhasin and Bhasin (1990) have reported the age at menarche for Lepcha and Bhutia of Sikkim as 15.55 and 15.62 years, respectively. They showed that the average age at menarche increased in the order of region with hot climate – temperate zone – cold climate. They have also correlated the age at menarche with body weight. Many factors including
genetic, nutrition and socioeconomic conditions influence age at menarche (Eveleth and Hauspie, 1976). Singh and Shukla (1992) have reported the age at menarche among Rana Tharu, Jogia Tharu, Donguria Tharu, Khatara Tharu and Pachhmaha Tharu of Utter Pradesh as 13.26, 13.8, 14.0, 13.1 and 13.44, respectively. They also pointed out that menarcheal age is influenced by climate, geographical, socio-cultural conditions and various genetic and non-genetic factors. Supporting this finding, Balgir (1994), expressed that age at menarche is not only influenced by genetic factors but also associated with occupation, educational level, family size, food habits, living conditions, birth rank and climate. Choudhury et al. (1994a) have conducted a study among Mirdha tribe of Orissa and found that this tribe has higher mean age at menarche than the other neighbouring tribe. The average age at menarche among the non-vegetarian females is lower than the vegetarian females among various communities of Punjab (Singhal et al. 1994) showing that age at menarche is also dependant on dietary habits.

The relation of age at menarche with rites and rituals, prohibitions and superstitions were also mentioned by Barua (1996). The effect of menarche on fertility was shown by Sharma and Choudhury (1995). In Gond women, fertility is higher among the women who experienced earlier menarche. Sengupta and Rajkhowa (1996) have reported the mean menarcheal age of Ahom tribes of Assam as 12.51 years. In another study among this population, age at menarche is dependent on nutrition, socio-economic status, environment, altitude, climate, heredity, food habits, rural-urban residence and family size (Kalita and Sengupta, 1997). Among Thoti tribe of Andhra Pradesh, mean age at menarche is reported as 13.06 years (Elizabeth et al., 2000). Reddy and Radhika (2003) studied among the girls of Nellore, Andhra Pradesh and their mean age at menarche were found at 13.83 years and also shows a definite association between age at menarche and some bio-social factors.

Maheo and Kalla (2000) studied the Mao Nagas of Manipur and reported 14.59 years as their mean age at menarche. Their study showed that menarche is fully dependent on the physical growth of girls and is influenced by different environmental factors as well as biological factors. In 2001, Patra found 13.40 years as the mean age at menarche of Raji women of Uttarakhand. The study supported that various factors
such as socio-economic condition, malnutrition, geo-physical environment, etc. are responsible for the fluctuation in the menarcheal age of women. Biswas and Kapoor (2005) also studied the mean age at menarche among Saharia women and found that the mean age at menarche varies with different factors like nutritional status, family size, medical facilities, genetic and environmental factors, education, birth rank, living standards, socio-economic conditions, etc. The authors found that the mean age at menarche of Saharia women to be very high (13.5 years). Mokha et al. (2006) conducted their study on the rural and urban girls of Ludhiana district, Punjab. The mean menarcheal age of urban girls was 13.31 years, while that of the rural girls was 13.62 years. It was concluded from the study that girls involved in any strenuous activity have a late onset of menarche. Therefore, urban girls had early onset of menarche than the rural girls of Ludhiana. In 2007, Dakshayani et al. found the mean age at menarche of Iruliga women of Karnataka as 13.93 years whereas their mean age at menopause was found to be 46.63 years. The early age of onset of menarche might be attributed to their better economic conditions of life and a good diet during their childhood. Therefore, higher the socioeconomic status, lower the age at menarche.

Singh (2006) compared the age at menarche among the four communities viz., Meiteis, Kabuis, Pangal (Muslims), and Nepalese of Manipur. From this study it was found that age at menarche occurred earliest among the Meitei and most delayed among the Kabui. While for menopause, the earliest was observed among Muslims and last among Kabui. On the other hand, the reproductive span was longest among the Nepalese and shortest among Muslims.

**Age at marriage**

In developing countries like India, age at marriage is always a point of discussion. Nair and Koteshwar (1987) have found that among the different communities of North Karnataka, parents have a desire of getting their daughters married just after the attainment of menarche. Delayed marriage is considered to be not good as it may cause a doubt on the girl’s character in their society. So, among these communities 14 years is considered as the ideal age of marriage for girls. Child marriage is also
reported among the Bharia tribe of Madhya Pradesh especially for females (Sharma, 1990). The age at marriage is found to vary from 12 to 17 years among females compared to 18-23 years among males. Similar report is also made among the two tribes of Karnataka – Jenu Kuraba and Kadu Kuraba. The average age at marriage of females is reported as 14.1 years and 14.2 years among Jenu Kuraba and Kadu Kuraba, respectively (Mutharayappay, 1993). Due to improved socio-cultural and loyalty of government policy, the age at marriage among the Kokna tribe of Maharashtra has increased to 18-20 years from 8-12 years for girls (Roy, 1995).

The age at marriage is found to be affected by bride price among Khond of Orissa (Singh, 1995). The bride price is paid in the form of bullocks and buffaloes. If the parents of the girls are unable to pay this bride price, postponement of marriage or sometime even cancellation of marriage occurs (Singh, 1995). Among the Jaunsari tribe of central Himalayas, traditional socio-cultural barriers rather than economic conditions, bound them to get their girls married at an earlier age (mean age at marriage is 13.86 years) (Samal et al., 1996). The socially approved rules and norms are heartily obeyed by this tribe and are not ready to perform marriage at late age (Samal et al., 1996). Similar case is also found among the Kumauni and Bhotia tribe of Uttaranchal (Chachra and Bhasin, 1998). Due to various socio-cultural rules, marriage is performed at early age, as the average age at marriage is 15.87 and 15.95 years among Kumauni and Bhotia, respectively. The preference for early marriage is also found among Raji of Uttaranchal (Patra, 2001) and Lohar-Gadiya of Madhya Pradesh (Yadav et al., 2001).

The study conducted on NFHS-II (India) data by Dey and Goswami (2009) showed that mother’s education and age at marriage had a significant effect on reducing fertility. The study also indicated that even without the use of family planning methods, increasing level of education, age at marriage and providing opportunities for women to work outside the home can go a long way in reducing fertility. It has been observed over the last few decades, particularly in the urban communities, that the age at marriage has increased. This postponement may be the result of increased literacy levels among the women. Thus age at marriage exhibits a direct relationship to fertility.
Among the Tarao tribe of Manipur, the age at marriage of females started from 14 years and continued up to 27 years of age (Singh, 1989). Devi et al. (2007) reported the mean age at marriage among the Ithing girls (19.19) and boys (21.74) of Manipur and possibly due to the romantic affairs at an early age. This study also reported the mean age at menopause of women was 41.94. The age at marriage among the Mao Naga of Manipur was reported as 22.7 and 25.6 years for women and men, respectively (Maheo and Kalla, 2001).

**Age at Menopause**

Like age at menarche, age at menopause is also an important determinant of fertility. It varies from one population to another depending on the food habits, socio-economic status, environment, altitude, etc. According to Bhasin and Bhasin (1990), the age at menopause is not only influenced by hot climatic condition but also by the body weight. They have reported the mean menopausal age among Lepcha, Bhutia and Buddhishs of Sikkim as 47, 42.46 and 44.33 years, respectively. It is found to be 46.32 years among Ahom tribe of Assam (Sengupta and Rajkhowa, 1996). It is also pointed out that the factors influencing menopause among Ahom are nutrition, socio-economic status, environment, altitude, climate, hereditary, food habit, rural-urban residence and family size. The mean age at menopause among Sonowal, another tribe of Assam, is found to be 47.22 years and factors like food habits, socio-economic and environment have influence it (Kalita and Sengupta, 1997).

Maheo and Kalla (2000) studied the Mao Naga of Manipur and showed 48.69 years as the mean age of menopause. The higher reproductive span was attributed to high birth rate in this study, the age at menopause varies from 40 to 48 years with the average age 42.4 years among Mahatos tribe of West Bangal (Majumdar, 2001). The mean age at menopause among Raji of Uttaranchal is 45.23 years (Patra, 2001). Sharma et al., (2005) have found out that the mean age of menopause among Brahmin and Rajput of Jammu as 47.9 and 48.02 years, respectively. Biswas and Kapoor (2005) studied the mean age at menopause of Saharia women and found that mean age at menopause is affected by various factors like nutritional status, family size, medical facilities, genetic and environmental factors, education, birth rank, living standards,
socio-economic conditions, etc. The authors found the mean age at menopause of Saharia women to be relatively low (44.6 ± 1.17 years).

Devi et al. (2007) studied the variation in age at menopause among the Ithing women of Manipur. The important findings of the study were that, age at menopause is not as sharply defined as that of menarche. Among the Ithing women, it ranges from 37 to 50 years. The mean average age at menopause of the population was found to be 41.94 ± 0.99 years. The low age at menopause was attributed to low socio-economic status and poor health.

**Educational status**

Educational level, economic status, religious attitudes, women’s work participation, etc are other factors, affecting fertility (Elamin and Bhuyan, 1999). All the socio-economic variables are closely interrelated. Figure 1.2 shows some of the biological, socio-economic and environmental factors influencing fertility of a woman.

Education helps in the overall upliftment of a nation, by providing opportunities for employment, enhancing the status of women and encouraging people for contraceptives use and hence, contributes to fertility decline (Mendelbaum, 1974; Dixon, 1975; Zachariah, 1981; Choudhury, 1984; U.N., 1995). Studies have suggested that educational status of females is the most important variable accounting for fertility decline (Coale, 1965; Ghosh, 1975; Zachariah, 1981; Jolly, 1981; Johnson, 1993). In India, women with high school and above education had markedly lower average fertility than the less educated (Mendelbaum, 1974). Kerala has set an example, by having high female literacy leading to higher age at marriage and lower fertility (Zachariah, 1981; Caldwell et al., 1984; Mahadevan et al., 1992). Education, besides reducing fertility, also reduces mortality by encouraging people for hygienic health practices and consequently, increases child survival (Cochrane et al., 1980; Caldwell and McDonald, 1982; Das Gupta, 1990)

Education is the single most important determinant of both age at marriage and age at first birth in MENA (Middle East and North Africa). For instance, Egyptian women married at 25-29, those with no education had married at age 18, on average, and had
their first child by age 20; those with a secondary or higher education married at an average age of 23 and had their first child by age 25 (Egypt, DHS, 2000). Educated women generally want smaller families and make better use of reproductive health and family planning information and services in achieving their desired family size; Morocan women with at least some secondary education had, on average half as many children as women with no education (Population Reference Bureau, 2003).

**Economic status**

Poorer households tend to have more births per marriage partly because they marry earlier than other households in today's developing countries (Hajnal 1982). However, the effects on household size are ambiguous. Couples start to have children sooner there by resulting in greater fertility.

Women’s status is also negatively associated with fertility (Sharift, 1987), as is evident in certain countries, like Japan, Singapore, and Korea as well as in Kerala (India). It is related to other socio economic and modernization variables. An increase in the status of women decreases mortality as well, by improving child rearing and health practices (Dreze and Sen, 1996), female education is considered to be the best indicator of women’s status and women if educated are in better position to limit their own fertility if they so desire(Weeks, 2002).

**Occupational status**

Fertility decreases with female employment outside home (Sander, 1990; Malhotra et al., 1995, Nanda and Surinder, 1997). In some studies, it has indicated that increased female participation in non-agricultural sectors also reduces fertility (Kasarda, 1971; Maudin and Berelson, 1978). Fertility is lower among women with white collar jobs than those with blue- collar jobs (Stycos, 1968) suggesting that the type of job also affects fertility. However, that female employment effects fertility may not be universally true (Choudhury, 1984). Nevertheless, making women more economically independent, thereby, more effective income earners in the family will reduce their dependency on others and enhance their status (World Bank, 1991).
**Place of residence and Family type**

Place of residence (rural/urban) is associated with all the variables determining population characteristics. Urbanization leads to modernization and more development, higher literacy, awareness about health care, more contraceptive use, a higher living standard and prevalence of nuclear families, and all these factors play a significant role in lowering fertility (UN, 1953; NFHS, 2002).

In general it is seen that in Joint families the number of children born are more than in nuclear families (Reddy, 1978). Family is a universal institution and thus has an impact on the individual. A family shares decision-making, common hearth and to some extent influences the married life of a couple, thereby the aspect of fertility is also affected in some way.

Family planning: Expert committee of WHO (1971) has defined and described family planning as practices that help individuals or couples to avoid unwanted births, bring about wanted births, regulate the intervals between pregnancies, control the time at which birth occur in relation to the ages of the parent and determine the number of children in the family.

In order to control the immense increase in the growth rate of the population various methods of family planning were used from the very early period both in developing and developed countries. Family planning programme in India was initiated as a purely demographic programme with the aim to stabilize population growth. In 1952, India was the first country in the world to introduce a national family planning program. Since then, program objectives and strategies have been revised several times. Most recently, in 1996, India’s National Family Welfare Programme was renamed as Reproductive and Child Health Programme and was expanded to meet the broader health needs of women and children. In 2000, the Indian government adapted a new National Population Policy with a medium-term objective of bringing total fertility down to replacement level by 2010.
**Mortality**

Study of Mortality indicates the health status of the population. It checks the unlimited growth of a population and regulates the distribution of individuals in different age groups with a difference in socio-cultural and economic status. The mortality rate is different in different populations. Bhasin and Bhasin (1990) have identified level of education, sanitation, public health services and living standards as the factors influencing mortality among Gaddi tribe of Himachal Pradesh. Lack of proper ventilation and poor quality of diet especially among children, and women during the period of pregnancy led to high mortality among Bison Horn Madia tribe of Madhya Pradesh (Kshatriya et al., 1993). The ignorance of immunization of both ante-natal and infants was also found as a causes of high mortality among this population.

Among Khasi tribe of Meghalaya, the highest infant mortality was because of diarrhoea, dysentery and jaundice. Maximum number of infant/child mortality is also observed among the illiterate mother who married at the age of 13 to 17 years (Adak, 1994). Mortality is also high among the mothers who delivered with the help of neighbours or relatives (Adak, 1994). A comparative study among the Khasi of Meghalaya shows a marked difference between followers of Christianity and traditional religion (Khongsdier, 1995). Christian Khasi, with better medical facilities along with advancement in education and financial condition, has comparatively lower mortality than the non-Christian Khasi.

Among the Kandh tribe of Orissa, Sabat and Dash (1996) has reported that scarcity of potable water, insanitation, very poor access of modern health care facilities, unfavourable environment has led to many communicable diseases which finally affect the health of their infant. Similarly, Pandey and Goel (1999) have pointed out that the high mortality observed among the Abujhmaria of Madhya Pradesh is due to illiteracy, financial problem and poor medical facility. Family planning is not accepted among this population which only worsened the situation. Among Gond tribe, the high mortality is believed to be caused by spirit, ghost, sorcery, soul loss, etc. But, the authors have found out the actual causes as tetanus, whopping cough,
diphtheria, small pox, cholera, polio, etc. (Sharma and Sharma, 1999). Due to poor economic condition, they cannot afford the medical facilities and very few deliveries are carried out in hospital.

Elizabeth et al. (2000) have tried to relate the high infant mortality rate among Thoti tribe of Andhra Pradesh with high degree of inbreeding. Among Kamar tribe of Madhya Pradesh, Pandey et al. (2001) reported the factors for infant mortality as health status of mother, types of household, occupation, income, age at marriage of mother, awareness about maternal and child health care. Similar conclusion was drawn by Patra (2001) among Raji of Uttarakhand. Low socio-economic condition, malnutrition, poor health care facility, odd climatic situation, non-availability of trained medical personnel for conducting delivery, illiteracy are the cause of high mortality among this tribe.

Migration

Migration is one of the major demographic events that brings change in the size and structure of the population. So, demographers are always interested to study the reason and extent of migration in analysing the changes of population. Pal (1995) has hypothetically discussed the possible route of migration for Oraon tribe to the Chotanagpur plateau in Bihar after facing many natural and human factors. Due to heavy draught, various rural communities of Andhra Pradesh migrate from one place, district and even state to outside for getting the job opportunity (Prasad and Rao, 1996). Through this migration, they not only gain the economic benefit but also change their socio-cultural system. In Tripura, one-fourth population was reported to be increased by immigration. Tripura has observed the highest population growth among the North East India (Adak and Chaudhury, 1996). In another different story, Gond tribe of Maharashtra was not ready to migrate from their native place in spite of poor economic condition as a result of the lack of modern agricultural facilities (Sharma and Sharma, 1999).
Chapter 1

1.9 Reproductive and Child Health

In the arena of health, the reproductive and child health is of priority interest. The protection of the health of the expectant mother and children is of prime importance for building of a sound and healthy nation.

1.9.1 Reproductive Health Definition

World Health Organization defines, “Reproductive health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters 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. It also encapsulates sexual health and not merely counselling and care related to reproduction and sexually transmitted diseases”. (United Nations, 1994)

International Conference Population Development(ICPD) defines, “Reproductive health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to 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. Implicit in this last condition are the right of men and women to be informed [about] and to have access to safe, effective, affordable and acceptable methods of family planning of their choice, as well as other methods of birth control which are not against the law, and the right of access to appropriate health-care services that will enable women to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant.”(ICPD)

Reproductive Health therefore as defined by the International Conference on Population and Development, is not just the absence of disease; it refers to a spectrum of conditions, events and processes throughout life. These range from healthy sexual development, physical comfort and closeness and the joys of childbearing, to abuse,
disease and even death. The Reproductive Health approach offers opportunities to improve not only the health of childbearing women, but also of the next generation, and to involve men in all aspects of Reproductive Health. In addition, Reproductive Health has multidimensional aspects and hence collaboration with other sectors, is vital. The Reproductive Health also raises issues of human rights, equity, and discrimination which must be addressed through participatory and inclusive processes that involve communities, families and individuals. (ICPD)

Reproductive health of woman is an essential ingredient of human rights and a major determinant of human development. It affects everybody and involves intimate and highly valued aspects of life. Reproductive rights and health are an integral part of human rights and are essential for enjoyment of one’s full human potential, mental, emotional and physical well-being (Jayapalan, 2002). It also includes enhancement of relationships, women’s empowerment and achievement of gender equality. Respect for women’s reproductive rights and provision of reproductive health services also provides the basis for neo-natal health and survival for the health and development of children and for the overall well-being of the family.

1.9.2 Reproductive rights

It embraces certain human rights that are already recognised in national laws, international laws and human rights documents and other consensus documents. The rights rest on the recognition of the basic rights of all couples and individuals to decide freely and responsively the number, spacing and timing of their children. To have information and means to do so and the right to attain the highest standard of sexual and reproductive health and the right to make decisions concerning reproduction that is free of discrimination, coercion and violence. It also includes the rights of individuals to control their own bodies, to have sex that is consensual, free from violence and coercion and to enter marriage with the full and free consent of both the parties (United Nations 1994).

Reproductive rights are essential for women’s exercise of their right to health and include the right to comprehensive, good quality health services that ensure privacy, that are fully informed and have freedom of consent, confidentiality and respect. A
healthy reproductive health and sexual life is now considered to be a basic human right for all (United Nations 1994). The foundations of reproductive rights were first established in the two fundamental human rights treatises, the United Nations Charter, adopted in 1945, and the Universal Declaration of Human Rights, adopted in 1948, which ensured an individual’s right to health. However, basic reproductive services have largely remained underserved or unserved for most of the poor sections of the populations in developing world. Ensuring a healthy reproductive health is therefore, everyone’s right and everyone’s responsibility.

1.9.3 Historical Overview

The concept of reproductive health emerged in the 1980s with a rising movement away from population control and demographic targets towards a more holistic approach to women’s health (Sen, 1994). It was not until the International Conference on Population and Development Programme of Action (ICPD) in 1994 and the Fourth World Conference on Women (FWCW) in 1995 that the concept gained international acceptance and was foreshadowed as a turning point for women’s health. The ICPD conference was instrumental in formalizing the paradigmatic shift in how women’s health was conceptualized and how services were delivered. The way in which reproductive health was viewed began to change the focus from sexual morbidity to the promotion of healthy reproductive lives. Many developing countries have paid more attention on reproductive health services to all the population. In India, the Reproductive and Child Health (RCH) programme introduced in 1997, through the network of health centers all over the nation, has addressed the matter of reproductive health directly which was largely ignored by the public health services earlier.

1.9.4 Importance of Reproductive Health

Reproductive Health is a crucial part of general health. Not only is it a reflection of health during adolescence and adulthood, it also sets the stage for health beyond the reproductive years for both women and men and has pronounced inter-generational effects. The health of the new-born is largely dependent on the mother’s health status and of her previous access to health care. Reproductive Health needs increase during adolescence and, particularly for women, during the reproductive years. In old age,
although general health continues to reflect earlier reproductive life events, other health issues become more important. Although individual needs differ at different stages of life, there is a cumulative effect across the life span, events at each phase having important implications for future well-being. Because reproductive health is such an important component of general health it is a prerequisite for social, economic and human development. The highest attainable level of health is not only a fundamental human right for all; it is also a social and economic imperative because human energy and creativity are the driving forces of development. Such energy and creativity cannot be generated by sick, tired people, and consequently a healthy and active population becomes a prerequisite of social and economic development.

1.9.5 Determinants of Reproductive Health

Reproductive health problems cannot be universally defined exactly because they need the local elaboration of meaning within the socio-cultural context. Though, the unanimous surmization is that there is a complex interplay of socio-economic, environmental and cultural factors that contribute to reproductive morbidity particularly among women in developing countries. Women suffer from various factors, directly or indirectly influencing reproductive health. Poverty, ignorance, literacy and malnutrition are major determinants of women’s health status. Also significant are the age at marriage and pregnancy, the number and frequency of child bearing and the number of unwanted pregnancies and abortions that contribute to morbidity and mortality among women and their children. Another important factor is the health services related factors such as lack of access to quality reproductive health services. Biological as well as social factors affect women’s health throughout their lives and have cumulative effect.

1.9.5.1 Age

The age of a pregnant woman affects her chances of dying a maternal death. This is due to a range of biological and social factors. For instance, young women may be at increased risk of obstructed labour, if their pelvis is not mature. Older women may have accumulated health problems like hypertension and diabetes which cause
obstetric problems. Young unmarried pregnant women may be likely to resort to illegal abortion due to social factors.

1.9.5.2 Pregnancy order (parity)

Women having their first pregnancy are more likely to die a maternal death than women having their second or third. With the fourth child the risk rises again.

1.9.5.3 Birthspacing

No studies exist to show that the spacing of a woman’s births affects her chances of dying a maternal death. Evidence does show that birth spacing may affect infant survival and it is often assumed that this must include maternal survival too. But this must be recognised as just that, an assumption.

1.9.5.4 Wantedness of pregnancy

Women with unwanted pregnancies may be more likely to seek illicit abortion, or less likely to seek health care, thereby increasing their risk of a maternal death.

1.9.5.5 Ignorance and Education

The status of girls and women in society, and how they are treated or mistreated, is a crucial determinant of their reproductive health. Educational opportunities for girls and women powerfully affect their status and the control they have over their own lives and their health and fertility. The empowerment of women is therefore an essential element for health.

1.9.5.6 Malnutrition

Nutritional status is a health status factor which is influenced by other factors, for example anaemia, it may be the result of a lack of money to buy food, or its persistence may be the result of a lack of access to health services which can correct anaemia. Viewing women’s health across the life cycle, it is clear that the health status of pregnant women is affected by their experience earlier in life. Particularly significant is the nutrition of girl children. For example, where girl children are
undernourished, sometimes due to gender bias in food allocation, their growth may be stunted leading to the likelihood of complications in pregnancy (Royston, 1989).

1.9.5.7 Reproductive Tract Infections

The poor health of Indian women is a concern on both national and individual level. It affects the next generation of citizens and workers. It reduces productivity; not only at the household level but also in the informal and formal economic sectors improving women’s health is integral to social and economic sectors.

RTI/STI is another health status factor which may be increasingly important in influencing the reproductive health. These problems arise primarily as a result of early marriage, high fertility, higher number of pregnancies and unsafe sex. Studies on prevalence of RTI and other related gynaecological problems were rarely available at the national level until recently. However, some nationwide surveys now provide estimate on the prevalence of RTI/STI.

The relationship between reproductive tract infections, sexually transmitted infections and HIV/AIDS is three fold. Firstly, reproductive tract infections, sexually transmitted infections and HIV infection are associated with the same risk behaviour that is unprotected sexual intercourse with multiple partners. Secondly, the presence of RTIs, STIs has been found to facilitate the acquisition and transmission of HIV infection. Lastly, there is mounting evidence that some reproductive tract infection pathogens are more virulent in the presence of HIV related immune deficiency (Mueller and Wasserheit, 1991).

India has had a national programme for the prevention and control of RTIs/STI’s since the 1960’s but the services are either of poor quality, inaccessible, or socially unacceptable (Luthra et al., 1992; Nag, 1993; Ramasubban, 1996).

1.9.5.8 Health services

Access to health services is a complicated concept covering may different issues, including both whether adequate facilities exist (e.g. adequate supplies and personnel,
good quality of care), and also if people can reach the services given (e.g. cost, distance, information).

The health services available to women in India comprises of government health services and traditional care including home remedies. The government provides health services to the rural poor through network of Primary Health Centers (PHCs), Sub-centers and referral centers called Community Health Centre (CHCs). A sub-centre provides services to a population of 5000 while there is one PHC for every 30,000 population and one CHC for every 100,000 to 120,000 population. The government also places Auxiliary nurse Midwives (ANM) to work with traditional Birth attendants (TBAs) at the village level. In cities and towns, the government provides health services through a network of government and municipal hospitals, dispensaries and family welfare centers (IIPS, 1995).

For a women living in a village and hilly area factors such as distance from the site of care, lack of availability of equipment and supplies at the site and lack of money to cover the cost of transportation and treatment are the key constraints to access care. Lack of time and money as well as availability of health facilities play important role in delaying health care seeking by women (Bang and Bang, 1994; Narayan and Srinivasan, 1994).

1.9.6 Distant factors

1.9.6.1 Socioeconomic status

Human societies are often stratified on the basis of income, occupation, social status, place of residence, etc. In this model, socioeconomic status affects a woman’s chances of maternal morbidity and death by working through the intermediate factors. Both morbidity and mortality are almost always higher among the poor and disadvantaged than among the wealthy, and this is also true of maternal mortality. Health is a function of not only medical care but is an integral part of the developmental process of the society. It is not possible to raise the health status and quality of life of the people unless such efforts are integrated with the wider efforts to promote overall wellbeing of the society (Basu, 1992).
There are certain determinants which affect reproductive health and they are already mentioned. But all the related factors which affect reproductive health are due to poverty, in their daily struggle to meet the basic necessity of life and they cannot avail the reproductive health facilities. In every society, women provide critical economic support to their families, alone or in conjunction with spouses by earning income in agriculture, in informal and formal labour markets.

Nearly 67 percent of India’s economy is based on agriculture. Few resources reach women, although they comprise a large share of both paid and unpaid agricultural labor (Bennett, 1989; Chatterjee, 1991). National survey data on which investment decision are based imply women make up 46 percent of the agricultural labor force (Chatterjee, 1991). A study by the United Nation International Labor Organization detailing with the way rural women spent their time indicates that up to 90 percent of the rural women in India participate in agriculture (Chatterjee, 1991). However their contribution in economic front remains obscure making them invisible workforce. The hazardous endeavour undertaken by women to make both ends meet endangers their health in many ways. Poverty pressurizes women to work through final stage of pregnancy, putting enormous demand on their physical energy and allowing to take little rest. The lifelong drain on physical stamina complicates the health of women.

1.9.6.2 Family Planning

Family planning refers to the practices that help individuals or couples to avoid unwanted births, bring about wanted births, regulate the intervals between pregnancies; control the time at which births occurs in relation to the age of parents and determines the number of children in the family. It is a way of thinking and living that is adopted voluntarily, upon the basis of knowledge, attitude and responsible decisions by individual and couples, in order to promote the health and welfare of the family group and thus, contribute effectively to the social development of the country (WHO, 1971).

The family planning programmes have been in operation in India for more than five decades. National family planning programme was formally launched in 1952 with a clinical approach, during the introduction of first five year plan. This was followed by
the extension approach, which was introduced in 1963-64. The family planning programme gathered momentum only during 1966-67, as a result of the long overdue realization on the part of the planners, politicians and policy of family planning as well, whereby, the international monetary fund and like forums hinged grant of loan with population especially to the countries of the third world. Mass vasectomy camps were organized during 1971-73. During seventies, a community-oriented service network was developed, in which family planning services were offered as part of the overall package of health services (MCH and nutrition services) in primary health centres and their sub centres. The national Family Welfare Programme in India has traditionally sought to promote responsible and Planned Parenthood through voluntary and free choice of family planning methods best suited to individual acceptors. In 1997, the programme was renamed the Reproductive Child Health Programme and given a new orientation to meet the health needs of women and children more completely. Family planning also affects reproductive health as well as population size of the country.

1.9.7 Who is most affected by reproductive health?

Women bear by far the greatest burden of reproductive health problems. Women are at risk of complications from pregnancy and childbirth; they also face risks in preventing unwanted pregnancy, suffer the complications of unsafe abortion, bear most of the burden of contraception, and are more exposed to contracting, and suffering the complications of reproductive tract infections (RTIs), particularly sexually transmitted diseases (STDs). Among women of reproductive age, 36% of all healthy years of life lost are due to reproductive health problems such as unregulated fertility, maternal mortality and morbidity and sexually transmitted diseases including HIV/AIDS. By contrast, the equivalent figure for men is 12% to that of women (POPIN 2004).

Biological factors alone do not explain women's disparate burden. Their social, economic and political disadvantages have a detrimental impact on their reproductive health. Young people of both sexes are also particularly vulnerable to reproductive health problems because of a lack of information and access to services.
1.9.8 Child Health

Children cannot achieve optimal health alone. They are dependent upon adults in their family and community to provide them with an environment in which they can learn and grow successfully. Children are the asset and future of a country and if their health will be poor a nation cannot be hoped to be strong.

“Child health is a state of physical, mental, intellectual, social and emotional well-being and not merely the absence of disease or infirmity. Healthy children live in families, environments, and communities that provide them with the opportunity to reach their fullest developmental potential”. (WHO, 2007)

Child health is foundational to adult health and well-being. When children’s health is nurtured and supported and there is an absence of physical and mental abuse, or other intentional childhood trauma; and there exists opportunities to gain habits that support good health during childhood, the stage is set for a healthy adulthood less likely to include chronic health problems such as overweight/obesity, poor oral health, diabetes and other chronic physical and mental health problems. Health during childhood is powerfully linked with social factors such as the income and education levels of a child’s family and his or her racial or ethnic group.

Children especially born in rural and remote areas are passing through a very difficult time. The immediate issue which needs attention is to bring down infant and also child mortality and morbidity. One of the major issues in the health status assessment is the health seeking behaviour of the community, which governs the morbidity and mortality pattern. Since the concept of health occupies different meaning in different social systems, the health seeking behaviour of a community cannot be studied in isolation from the social network of a community. It is deeply interwoven into every event of social, economic and biological aspects of the population.

The nature of physical growth and development of children depends primarily upon the genetic endowments, nutritional status, psychosocial attributes and surrounding physical environmental conditions (Balgir et al., 1999; Balgir, 2008). Good nutrition is an indispensable component of healthy life. It is a determinant of healthy growth of
mind and body. It plays a vital role in the physical, mental and emotional development of a child (Balgi, 1998). School going children are the most important segment of the society which is affected by under- and mal-nutrition. Complications are compounded due to ignorance, food fads, bad food habits, and poverty of the parents (Balgi, 1998). The nutritional status of the young children varies from region to region in India due to differences in dietary habits, socio-cultural attributes, unbalanced intake of food, irrational practices, economy, disease burden, and accessibility to hygienic food, sanitary conditions of living, etc. Consumption of unbalanced food leads to nutritional deficiencies (Balgi, 1998). The prevalence of anaemia is mostly attributed to iron, folic acid and other nutritional deficiencies, and is more common among the under privileged communities of India (Balgi et al., 1999).

1.10 Reproductive and Child Health Research

Basu and Mitra (2001) in their paper on health development of tribal communities of India opine that the health status of tribal population in India is very poor. Different studies viz. Basu et al., 1985, 1986, 1989, 1990, 1992, 1993, 1994, 1995, 1996; Roy Burman, 1986; Swain et al., 1990; Rizvi, 1986; Mukherjee, 1986; Choudury et al., 1986; Bardhan, 1989; Haque, 1990 and others, have tried to establish this with the help of mortality, morbidity and health statistics data. The wide spread poverty, illiteracy, malnutrition, absence of safe drinking water and insanitary living conditions, poor maternal and child health services, ineffective coverage of national health and nutritional services, have been traced out in several studies as possible contributing factors for dismal health conditions prevailing among vulnerable population. It has been found that certain diseases like goiter, yaws, malaria and guinea worm are endemic in tribal areas of Madhya Pradesh, Orissa, Rajasthan, Gujarat, etc.

Many research studies point out that the tribal populations have distinctive health problems, which are mainly governed by their habitat, difficult terrain and ecologically variable niches. Significantly, the health nutrition and medico-genetic problems of diverse tribal groups inhabiting widely varying, geo-climatic and ecological conditions have been found to be unique and present a formidable
challenge for which appropriate solutions have to be found out by planning and evolving relevant research studies, which should be need based and problem solving in nature.

Singh (1994) examined the interplay of several factors influencing health of tribal communities namely (i) physical environment/ elemental, forces of nature like earth, Sun, wind, rain, forest, (ii) socio-economic (iii) nutritional availability and dietary habits (iv) psycho-social culture (v) health culture and health related behaviour (vi) mortality and morbidity pattern (vii) genetic diseases and disorders (viii) the therapeutic system in vogue and (ix) health delivery systems. He pointed out that issues concerning tribal health, nutrition and gentico-environmental aspects are grossly under researched.

Swain (1994) examined in depth perception of health and illness prevailing among the different tribal groups of India. It has been realised that diseases are not only due to physical, chemical or biological processes but also due to a number of socially and culturally determined factors.

Tendon (1994) discussed the wide variation in the dietary pattern of the aboriginal tribes of India living under contrasting condition in different isolated regions. In tribes of north east frontier area, the dietary habits and other related modes of life are often suited to their best advantage and provide adequate nutrition and they may enjoy excellent health while in other tribes the diets are deficient, the energy intakes are very low.

Sinha (1996) in his study on different tribal groups of India has discussed the scenario of primitive medicine, social and cultural activities being practised by different tribal groups for the treatment of their diseases. Various types of herbal medicine, common names of the plants/roots used by the tribals for the treatment of diseases had been enlisted by him. He has also discussed the development of modern allopathic system, health planning in India and the health situation of tribals. It has been noted by many that tribals living in remote areas have a better health status and more balanced than those living in less remote areas (Chaudhuri et al., 1989).
Roy Burman (1990) has noted that physical well-being of the tribals is inextricably linked up with the forest ecology and rapid disappearance of forest produce, replacement of food crops by cash crops and tendency towards mono-culture forestry and privatization of community lands may affect the health and nutrition and physical well-being of the tribal population.

In India the ‘wake-up call’ for research on women’s reproductive health actually began with this landmark study among rural tribal women, Bang and Bang (1989) demonstrate a high prevalence (92%) of reproductive morbidity in a sample of 650 women. There is high prevalence of vaginal infection such as vaginalis (13.95 %) candidiasis (34.5) and syphilis (10.5 %) (Bang, 1994). And in some studies, the women’s self-report were complemented with clinical and laboratory data and the degree of correlation between the women’s perception of morbidity and medical definition of pathology was examined (Bhatia et al., 1997; Latha et al., 1997, Garget al., 2000)

Maharatna (2000) has investigated into a very interesting aspect of women work participation, their contribution to the pool of family income and the impact of the free participation on the pressure of work, workload and available leisure to them. It is reported that the participation is in the spirit of work sharing as well as in the spirit of independent entrepreneurship. In mountainous regions, their workload is the result of the topographical and climatic disadvantage coupled by the absence of any worthwhile technology to reduce the drudgery of work. The total workload is too great for women and ultimate available leisure to them in hills of Uttarakhand is too short. The males seem to shift the work on the female even if it is avoidable. Author observes that the Garhwal women have relatively greater willingness and access to educational amenities and the literacy rate corroborates this. But this does not seem to save them from the excessive workload and drudgery of routine. The paper gives the impression that education of females is likely to affect fertility in a longer perspective.

Women’s active participation and empowerment can play an important role in reducing gender inequality besides reducing fertility and mortality (Dreze and Sen, 1996). Both child mortality and fertility are negatively correlated with female literacy.
(Natarajan, 1989). Educated parents especially mother ensure lower infant mortality by providing adequate care to their infants in terms of hygiene and health services (Bhasin and Kshatriya, 1990; UN, 1994).

Negative effect of higher income on infant and child mortality is well documented though not always documented (Das Gupta, 1990). The relationship between infant mortality and maternal age generally show a ‘J’ shaped curve with birth order. The association between mother’s employment and child survival has shown irregularities. Some studies have suggested that mother’s employment has a negative effect on infant survival (Desai and Jain, 1994; Sivakami, 1997), while others have revealed that the association between mother’s employment and infant survival is insignificant (Nanda and Surender, 1997).

Socio-economic differences in morbidity and mortality rates across the world have received its due attention in the recent years (Wagstaff, 2000a; Brockerhoff & Hewett, 2000; Gilson & McIntyre, 2001). Such differentials in health status in-fact is found pervasive across nations cross -cutting stages of development (Smith & Haddad 1999; Wagstaff, 2000b; Wagstaff, 2002; Oomann et al, 2003; Zere and McIntyre, 2003; Carr, 2004; Gwatkin et al, 2004; Lawn et al, 2006; Houweling et al, 2007; Gwatkin et. al. 2007; Poel et al, 2008; Mohanty and Pathak, 2009).

Bourne and Walker (1991) confirmed that mother’s education in India has greater effect on the survival of her daughters than sons. Elo (1992) suggested that there is positive effect of maternal schooling on the use of pre-natal care and delivery assistance. Education enhances women’s knowledge of modern health care facilities, improves her ability to communicate with modern health-care providers and by increasing the value she places on good health, results in heightened demand for modern health-care services (Caldwell, 1979; Schultz, 1984; Caldwell and Caldwell, 1988; Barrera, 1990).

Srivastava et al. (2004) on their study the married women in rural, urban and urban slums of Agra have shown that the perception about RTI were correctly responded by 28.69 %, 74.78%, and 45.22% in rural, urban and urban slums, respectively. Education and better sources of communication in urban area may be the possible
reason for that. Watery vaginal discharge was found highest (67.74%) in rural, 64% urban and 64% urban slum women and 22.58% rural, 20% urban and 24% urban slum women had curdy discharge.

Chellan (2007) stated that prevalence of RTI/STI is very high in rural areas in India especially among women. Among those who have reported any symptom of RTI, a few numbers of them had taken treatment from various health sectors. Socio-economic and demographic factors have significant influence on prevalence of RTI/STI and treatment seeking behaviour among rural woman. Education, age of the women and types of houses have strong effect on prevalence of RTI/STI and its treatment seeking. And he also reveals that women with no schooling, higher age, no pregnancy wastage and living in kachcha houses are significantly more likely to have RTI problems, whereas, highly educated women, contraceptive users, higher age at marriage, women in higher age groups (30 years and above), and living in pucca houses are significantly more likely to take treatment for RTI in rural India. However, there are no significant effects of castes, religion, and parity on treatment seeking behaviour of rural women in the country.

The family welfare programme seeks to promote responsible and Planned Parenthood through voluntary and free choice of family planning methods best suited to individual acceptors (Santhya, 2003). During the third five-year plan, broad based extension programme was launched for wider availability of services to bring about changes in the knowledge and attitude of people with regard to family planning. The basic priorities delineated during the extension approach were: group acceptance of small family norm; knowledge about different family planning methods; and easy availability of family planning supplies and services. With change in strategy, the programme was expected to find a wider acceptance among the people. By providing preventive and curative medical services and children, the idea was to decrease infant and child mortality rates and motivate people to limit size of their families.

In the five year plan, a community oriented service network was developed, in which family planning services were delivered as a part of overall package of health services. And post-partum programme launched under integrated approach was
extended during the sixth and seventh five year plan period. The child survival and Safe Motherhood (CSSM) programme was introduced in 1992 to implement a package services combining mother and child health and immunization (Family Planning Programme in India yearbook 2001, 2003).

With India forming its first National Population Policy (NPP, 2000) affirmed the commitment of the government towards informed choice of the people to voluntarily avail the reproductive health care services and continuation of target free approach in administering family planning services. The immediate objective of NPP 2000 was to deal with unmet needs for family planning; improve health care for under-served population groups, tribal communities and hill area populations; and empowering women for improved health, nutrition and education. The medium-term objective was to bring the TFR (Total Fertility Rate) to replacement levels by 2010, through vigorous implementation of inter-sectoral operational strategies and the long term objective was to achieve a stable population by 2045.

Srikantan (1989) suggested that a large number of variables affect the performance of the family planning programme. Some of the socio-economic variables are education, type of residence, preference for a particular sex of offspring and status of women. Demographic variables such as age of partners, age at marriage, family size and infant mortality also plays an important role in acceptance of family planning (Nag, 1991; Kamal, 1999). Pattanaik and Kaur (1999) stated that the improvements in economic status and literacy of the states may strengthen the overall performance of the family planning programme. Mass media plays an important role in promotion and acceptability of contraception (Bhat, 1996; Ramesh et al., 1996). While, spousal communication increases the likelihood of contraceptive use (Ghosh, 2001).

Gupta et al (2003) indicated that increased exposure to mass media was associated with increased knowledge, attitude and practice of family planning methods. Increases in the use of family planning methods have been the principle direct cause of fertility declines in the developing world. It is well known that in India with long established family planning programme, the amount of failures in declining growth rates still overruns the success in some countries of Asia and Latin America. Within the country
also family planning performances differ from state to state. Only two states- Kerala and Tamil Nadu have reached the target of two children per couple norm to a satisfying degree (Measham et al., 1999).

In the mid-twentieth century, synthetic hormonal contraceptives first became available with the development of the oral contraceptives pill containing a progestogen and an estrogen. The pill is widely used by 76 million women making it the third most popular means of contraception (WHO, 2004). Shah et al., (2006) opined that, India in spite of having national programs for family planning for long could not make proper use of the same. Sterilization still today remains the mainstay of the program. The current use of spacing methods in India is 7 percent. People still today are unaware of the importance of use and effectiveness of the spacing methods and family planning delivery system is also not completely successful in reaching the methods to the target population and failed to achieve its goal to provide planned family to the nation. The current contraceptive use among currently married women generally increases with education, from 43 percent among illiterate women to 57 percent among women who at least a high school educated.

Roumi Deb (2010) stated that 52.7 percent of ever married women were adopting any of the family planning method in East Khasi Hills district, whereas, according to RCH-DLHS (2002-2004) in the east khasi hill district the combined male and female users were much less at 14.9 percent. The use of family planning method among currently married women in Meghalaya was only 20.2 percent. Health care is one of the most important of all human endeavours to improve the quality of life especially of the tribal people (Balgir, 1997; 2000a, 2005a). It implies the provision of conditions for normal, physical and mental development and functioning of human being individually as well as in a group. A great realization has come from the medical scientists that human being can no longer be treated as an anatomical and physiological entity, and that man’s individuality should be understood in terms of perceptions, culture and belief system (Balgir, 2000a).

Richa chandraker and et al (2009) stated that poor health status during child bearing period, low ante-natal care, high deliveries at home along with high prevalence of
malnutrition of under five children and mothers, these are mainly due to low economic condition, high illiteracy and lack of awareness among Dhur Gond tribal community of Mahasamund District, Chhattisgarh.

Tribal groups have historically had more equal gender relations and women’s status in tribal societies has been higher. This has manifested itself in later than average age at marriage, higher participation of women in the labor force and lower restrictions on the mobility of women (see Das and Desai, 2003). Until the late 20th century, child mortality and fertility rates for tribals were lower than those for non-tribals (Maharatna, 1998). Dreze and Gazdar (1997) and Maharatna (1998; 2000) however point to a disturbing trend in tribal societies – that gender equality and their lower fertility and mortality patterns seem to be gradually eroding, as they get more integrated into non-tribal society and as their traditionally sustainable livelihoods are encroached upon.

Government of India launched Reproductive and Child Health (RCH) Programme in 1997-98 for implementation during the ninth plan period. The main aim of Reproductive and Child Health (RCH) programme is to improve the survival status of mothers as well as children of a community or nation (Jain and Visaria 1998). Because women are a particularly vulnerable segment of a society and suffer from social, economic and nutritional deprivation to a far greater extent than men (Amin 1995). In general, when the care of a child’s mother suffers, the childcare suffers as well (UNICEF, 1996; Engle et al., 1999). Specifically, women’s quality of life with her children as well as family and community is largely influenced by pregnancy related health and nutritional problem of the women (WHO 1997).

About 200 million women become pregnant each year in the developing countries and suffer from nutritional deficiencies (WHO 1997). Similarly, more than half of the malnourished children in the developing world are found in South Asia, and 26 million babies are born with low birth weight because their mothers are either ill or malnourished (UNICEF, 1993; 1996).

There is evidence to show that poor maternal health status exemplified by low BMI is associated with poor lactation performances and poor growth in infants (Kusin et al.
An important element in reducing health risk from mother and children is to increase the proportion of babies delivered in proper health facilities, which will reduce the risk of infections of mother and newborn child (Mitra et al., 1997). Because, one third of the total disease burdens that woman face is linked to pregnancy, childbirth, abortion and reproductive tract infection (World Bank 1993).

Therefore, maternal and child health services play a vital role in achieving improved reproductive outcomes in various societies, particularly in rural settings (Bhatia and Cleland 1995). But the availability of maternal and child health (MCH) services is low throughout the world (Hollian, 1989; Bhandari et al., 1989; Paul, 1991). As a result, the insufficient use of health care services, especially prenatal care and place of delivery influences the high rate of infant and child mortality (Gaminiratne, 1991; Fiorste, 1994).

Ante-natal care is an important aspect of maternal health. Ideally, for normal cases ante-natal care visits after confirmation of pregnancy should be scheduled at intervals of four weeks throughout the first seven months, every two weeks until the last month and weekly thereafter (MacDonald and Pritchard, 1980). However, under any circumstances a minimum of three antenatal visits are recommended, during the fifth month or as soon as the pregnancy is known, eighth and ninth month of the pregnancy (MHFW, 1997). Women specially living at places far away from primary health centre hardly feel the need of visiting it during pregnancy unless there are some complications (Manocha et al., 1992).

A good place to focus prevention efforts is with our children. Nutrition professionals use multidimensional strategies that are culturally and socially appropriate to promote healthful eating. One promising strategy is to encourage new mothers to breastfeed. We know that breastfeeding is a safe, time-proven feeding method that helps infants to have a healthful start in life. So unless there are contraindications that warrant a woman to not begin or to interrupt or stop breastfeeding, women should be encouraged and given the necessary tools with which to breastfeed their infants. The American Dietetic Association (ADA) has long recognized the value of breastfeeding (Galson, 2008).
For the growth and immunity of the baby, breastfeeding is essential (Reddy, 1995; Park, 1997). The durations of breastfeeding are determined by factors like survival of the baby, age of the mother, parity, education of the mother, gender of the child, etc (Bongaarts, 1981; Ahmed and Alam, 1996). In some societies where breastfeeding is nearly universal, prolonged and of higher intensity, it is a major determinant of prolonged postpartum amenorrhoea, the birth interval and resumption of next menses (Singh et al., 1994, Babu, 1996). The longer the period of lactation, the longer the anovulatory period last. However, period of postpartum amenorrhea varies from women to women and depends on various social and biological factors.

It is now well established that breastfeeding is universal in India – both in urban and rural areas – and continues into early childhood years; and plays an important role in the context of child health (Hoarta et al., 2007). Despite the benefits that breastfeeding provides and its universality, the study of the social aspects of breastfeeding has remained neglected in India. Studies on breastfeeding in India have not taken into consideration the influence of certain cultural and traditional practices on lactation and thereby on breastfeeding (Bandhopadhyay, 2009).

In India, breastfeeding initiation is delayed because of the belief that mother's milk does not "come" at the time of childbirth; but flows two to three days later (Reissland et al., 1988); and as the yellowish thick liquid is harmful and difficult for the baby to digest, this is discarded. Prelacteal feeds could be potentially harmful to the newborn as they could introduce infection, sensitise the gut to foreign proteins, or delay the onset of lactation (Prasad et al., 1995). Delay in initiating breastfeeding may also affect the quantity of breast milk produced because of the delay in stimulation normally provided by suckling (Wray, 1978), and could lead to hypoglycaemia, hypothermia, and acidosis, especially among high risk, low birth weight infants (Hanson, 2004; Costello, 1993).

Special provisions have been made for the most vulnerable groups population like scheduled caste, tribe, adolescent and urban slum. National Family Health Survey (NFHS) also focused on these segments and specifically on scheduled tribal population (NFHS-II, 1998-99),who are the most “disadvantaged group” so called and
suffer by poor reproductive and child health status specifically in Central India (Dey, 2003; Ram et al., 2003). Thus, it needs time to time community based survey to understand the present situation and change in reproductive and child health condition of a particular community because tribal communities have their own socioeconomic and cultural domains (Rath, 2004). There are few works on different aspect of reproductive and child health among specific tribal communities in India and showing poor reproductive and child health status (Basu and Kshatriya, 1997; Narahari and Rani, 2002; Reddy et al., 2001; Pandey et al., 2001).

World Bank (2003) reported that achievement in economic progress in India, the fruit of development has failed to secure a better nutritional status of children in the country (Svedberg, 2006; Rajaram et al., 2007; Shiva Kumar, 2007; Pathak & Singh, 2009). India presents a typical scenario of South-Asia, fitting the saying of 'Asian Enigma' (Ramalingaswami et al., 1996); where progress in childhood malnutrition seems to have sunk into an apparent undernutrition trap, lagging far behind the other Asian countries characterized by similar levels of economic development (Gragnolati et al., 2005; UNICEF, 1990; Svedberg, 2007; Claeson et al., 2000).

In the past decade, National Family Health Survey-3 (NFHS-3) estimates the recent status of child malnutrition in India. Mishra and Retherford (2000) indicates that about 46 percent of the children under 5 years of age are moderately to severely underweight (thin for age), 38 percent are moderately to severely stunted (short for age), and approximately 19 percent are moderately to severely wasted (thin for height) (IIPS 2007). The decline in prevalence however becomes unimpressive with the average levels marked by wide inequality in childhood malnutrition across the states and various socio-economic groups (Rajaram et al., 2007; Shiva Kumar, 2007; Bawdekar & Ladusingh, 2008; Pathak, 2009).

Pathak (2009) suggests that in India the gap in prevalence of underweight children among the rich and the poor households is increasing over the years with wide regional differentials. Good health of the child is related to maternal education as well as higher income as they influence the use of preventive health service like immunization (Otta, 1992). A study in Ashram school Gond children of Kalahandi
Demographic study with special reference to reproductive and child health among Chiru tribe of Manipur district of Orissa showed visible conjunctival pallor (34.3%), vitamin A deficiency (15.2%), Vitamin B deficiency (15.6%), iodine deficiency (17.4%), scabies (27.2%) and dental caries of (20%) (Balgir et al., 2002).

Another study (Balgir et al., 1998) on tribal children of Sundargarh and Mayurbhanj districts of Orissa represented moderate to severe anemia of 68-75%, lower mean heights and weights in comparison to ICMR standards (ICMR Report, 1984). However, a cross-sectional evaluation of physical growth and development among the tribal children aged 6-14 years of Mayurbhanj and Sundargarh districts who were staying in Ashram School Boarding and growing their own fruits and vegetables for consumption revealed the better health and nutritional status of Ashram school children than the ICMR average for Orissa (Balgir et al., 1999).

Many studies have identified poverty as the chief determinant of malnutrition in developing countries that perpetuates into intergenerational transfer of poor nutritional status among children and prevents social improvement and equity (Larrea and Kawachi, 2005; Hong et al., 2006). Nutritional status of under-five children in particular is often considered as one of the most important indicator of a household's living standard and also an important determinant of child survival (Thomas et al., 1990). The deterministic studies in India while exploring the impact of covariates on the degree of childhood malnutrition suggests an important nexus shared with household socio-economic status (ICMR, 1972, Rao and Rao, 1994; Rajaram et al., 2003; Rao et al., 2004; Pal, 1999; Zere and McIntyre, 2003; Rajaram et. al. 2007, Arnold et al., 2004; Radhakrishna and Ravi, 2004). The two-way causality of poverty and under nutrition seems to pose a very significant pretext for malnutrition in India like other developing nations, where poverty and economic insecurity, coupled by constrained access to economic resources permeate malnourishment among the children (Behrman and Deolalikar, 1988; World Development Report, 1993; Strauss and Thomas, 1998; World Health Report, 1999; Ruger and Kim, 2006; Gragnolati et al., 2005).

Thus, economic inequality constitutes the focal point of discussion while studying malnutrition and deserves suitable analytical treatment to examine its interplay with...
other dimensions of malnutrition and to prioritize appropriate programme intervention. Such attempt to the best of our knowledge is still awaited, using recent nationwide survey data in India.

1.11 Rationale of the study

The tribal population groups form the 7.95 percent of the total population of India. These tribal groups inhabit widely varying ecological and geo-climatic conditions (hilly, forest, tarai, desert, coastal regions, etc.) in different concentrations throughout the country and are distinct biological isolates with characteristic cultural and socio-economic backgrounds. Tribal groups are generally homogeneous, culturally firm, have developed strong magico-religious health care systems and they wish to survive and live in their own style.

A tribal woman occupies an important place in the socio-economic structure of her society. The Dhebar Commission Report (1961) mentions that the tribal women is not drudge or a beast of burden, she is found to be exercising a relatively free and firm hand in all aspects related to her social life unlike in non-tribal societies. The tribal women in general and in comparison with castes, enjoy more freedom in various walks of life. Traditional and customary tribal norms are comparatively more liberal to women. And the status of women in a society is a significant reflection of the level of social justice in that society. Women's status is often described in terms of their level of income, employment, education, health and fertility as well as the roles they play within the family, the community and society (Ghosh, 1987).

The present demographic study is a micro level study. Micro demographic study means the study of a population or a community in a particular region, as small enough that can be studied by an investigator over a period of few months. This type of study can produce more meaningful results and such empirical accurate studies can form basis to further strengthen the theoretical framework, anthropologically saying, importance lies in understanding population dynamics at micro level.
During the course of the study an effort was made to achieve the aims by fully recording relevant information. However, some problems were faced in the field while recording the information. The present study is relevant as it is of interest to understand the dynamics of population such as fertility, mortality, knowledge and practice of family planning, status of reproductive and child health in a population through micro level study. Such study would give an insight into the phenomenon and provide some vital statistics about the Chiru community, which is one of the tribal populations residing in Manipur. The present study attempts to highlight overall population problems of Chiru and target difficult areas so as to overcome them. Keeping this in mind, a field study was conducted on the Chiru Villages in Manipur. Such intensive small-scale studies are expected to be academically important in enhancing knowledge of the complexities of the population change and also interplay of various determinants influencing them.

Furthermore, such studies are practically important as they may help to formulate plans and policies of specific regions and to identify high risk population group among whom programmes should be directed on a priority basis and areas which need special intervention. It assumes great significance as it focuses on different demographic aspects of the area and interplay of various determinants affecting population dynamics. In the present study, it is expected that demographic indicators may be inversely proportional to the social economic and cultural factors prevailing in the society. Thus in the present study an attempt is made to have a comprehensive data on demographic variables among the Chirus of Manipur.
1.12 Aims and objectives

The present study is an attempt to evaluate the Demographic structure of Chiru tribe of Manipur with special reference to reproductive health of women and child health status.

The objectives of the present study are:

1. To study the demographic processes such as fertility, mortality and morbidity along with socio-economic and educational status of Chiru of Manipur
2. To study the fertility, mortality, morbidity patterns of the population and factors that affect them
3. To find out the practices pertinent to maternal care and child care
4. To assess the knowledge, attitude and practices of family planning
5. To study the reproductive morbidity, knowledge and treatment of RTIs in the population