The right to health is the most basic of all human rights. The constitution of the WHO asserts that ‘the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic and social condition’. This means that every human being has the right to live in an environment with minimum health risks and to have access to health services that can prevent or alleviate their suffering, treat diseases and help maintain and promote good health throughout the individual’s life. Women lag behind men on virtually every indicator of social and economic status. In most societies women are relatively powerless to change the conditions of their lives, to break the bonds of poverty or to improve their health or quality of life.

In the past three decades many studies have demonstrated the importance of women’s health. It’s now accepted that women’s health status has an important impact on the health of the children, the community, the family and the environment; and yet despite these assertions and despite the rapid technological advances that have been made in a number of fields many women still suffer from preventable morbidity and mortality. While some improvements have been recorded in physical quality of life indicators, the health status of women remains precarious and in some situations, it’s worsening. The reasons that women suffer from illness, disease and pain are numerous and complex. Solutions to problems must take account of this reality. Concentrating on individual causes is misleading since it ignores the many interrelated factors that make up the life of girls and women and are reflected in their health status. A woman's reproductive span is important in understanding not only the fertility levels of a society but also a woman's or couple's reproductive planning, allocation of time for childbearing and decision to end reproduction. These reproductive performances of women are socially and culturally influenced. In many developing countries, sexual relationships are initiated only after marriage, and childbearing out of wedlock is socially forbidden.
Issues of women’s health were commonly equated with maternal health. Yet the safety of motherhood is now known to depend upon women’s health from before birth through adult life and upon a number of economic and social factors related to the status of women. It is no longer possible to consider maternal health in isolation from the broader spectrum of women, health and development. An estimated 44% of women in developing countries suffer from nutritional anaemia compared with 12% of women in developed countries. This is both a direct and indirect cause of maternal mortality. In addition it reduces work capacity, increases fatigue and increases susceptibility to health problems (WHO, 1992).

One of the important ways to promote health and development is through extensive demographic research along with mother and child health parameters. Earlier studies have shown that amalgamation of health research with demography is necessary to understand the health status of a comprehensively growing population.

1.1. DEMOGRAPHY

Demography is the statistical study of human populations. It can be a very general science that can be applied to any kind of dynamic human population, that is, one that changes over time or space. It encompasses the study of the size, structure and distribution of these populations, and spatial and/or temporal changes in them in response to birth, migration, aging and death.

Demographic analysis can be applied to whole societies or to groups defined by criteria such as education, nationality, religion and ethnicity. Institutionally, demography is usually considered a field of sociology, though there are a number of independent demography departments. Formal demography limits its object of study to the measurement of populations’ processes, while the broader field of demography is synonymous to population studies which also analyse the relationships between economic, social, cultural and biological processes influencing a population.

Demography is one of the best understood and predictable parts of human behaviour. When the parameters are known, the population structure is highly predictable and can be projected forward and backward in time to enhance the implications of sets of...
parameters. From 1980 onwards, there has been development in the techniques and methodology in Demography.

Demography has been defined in various ways. According to Peter Cox (1970) Demography denotes “the study by statistical method of human population. This involves primarily the measurement of the size, growth and diminution of the numbers of people. The constituents of change in these numbers are births, deaths and migration and the demographers analyse the related function of fertility, mortality and population transfer.”

Bogue (1969), held the opinion that demography is the statistical and mathematical study of size, composition and spatial distribution of human populations and of changes through the operations of the five processes of fertility, mortality, marriage, migration and social mobility. Demography studies the size, composition and distribution of population and changes in these aspects through time and examines the cause of these changes. A demographer thus is interested ultimately in human welfare.

Economists, biologists, sociologists, ecologists, anthropologists, geographers and statisticians have all contributed to the science of demography. They have taken both the narrow and broad view of the discipline. A distinction is made between demographic analysis and population studies. Demographic analysis as also known as formal demography or mathematical demography is confined to the study of components of population variation and change, viz, fertility, mortality and migration. Population studies are concerned with not only population variables but also with the relationship between population change and other variables i.e. social, economic, political, biological, genetic, geographical and the like (Bhende and Kanitkar, 1978).

Of all human sciences, demography is the one that can least afford to do without the other sciences. Demography is closely related to sociology, economics, geography, human ecology, anthropology and host of other disciplines. This precisely is the reason why it is known as multi-disciplinary science.
1.2 ANTHROPOLOGICAL DEMOGRAPHY

Anthropological demography is a speciality within demography which uses anthropological theory and methods to provide a better understanding of demographic phenomena in current and past populations. Demography is statistically oriented and is mainly concerned with the dynamic forces defining population size and structure and their variation across time and space. Demography uses anthropological theory and methods to provide a better understanding of demographic phenomena in current and past populations. Its genesis and ongoing growth lie at the intersection between demography and socio-cultural anthropology and with their efforts to understand population processes, mainly fertility, migration, and mortality (Bernardi, 2007).

The study of population statistics helps in the advancement of science i.e. finding out what happens, formulating theories as to why it occurs and testing these theories against the course of events. These studies help to plan ahead for satisfying man’s needs throughout life. It is essential for finding out population migration trends which result in creating regional imbalances, particularly when due to some reasons there is migration. Study of mortality and fertility at various ages would help to identify factors associated with them and help the state to bring them within reasonable limits. Demographic data may help political authorities as it would give information about the rate at which number of voters, male and female is increasing. Demographic data helps in the planning and conduct of industry and commerce and the provision of social services and preservation of law and order.

Demographic Anthropology is a difficult field of study to define. Whereas in the first part of the century, anthropologists and demographers participated in many of the same conversations, as disagreements over the role of culture solidified into paradigmatic differences this communication all but ceased, although scholars in both fields continue to address similar issues. The problems inherent in the study of demographic issues from within the boundaries of one or the other discipline have blinded both sides to important issues and interpretations (Pine, 2000).

The credit initiating a new field of empirical research in population studies goes to John Graunt, an English haberdasher also acclaimed as the father of Demography or
Population studies. It is a collection of various physical, social and vital facts of the population. It includes the study of causes leading to slow or fast growth of birth rate and factors that bring change in death rate, population growth and sex ratio.

Anthropological demography has the potential to revolutionize theory in both demography and anthropology by working back and forth across the divide between them. The missing theoretical revolution in anthropological demography comes from our seeking to seam together our parent disciplines, rather than to examine their essential contradictions (Johnson-Hanks, 2007).

1.3. DEMOGRAPHIC VARIABLES

The most important characteristic of a population are age, sex, ethnic or racial category and residential status (urban and rural).

1.3.a. Age and Sex Distribution

The age and sex distribution of a population is one of the most fundamental characteristic of population structure. Age and sex composition are the basic characteristics or the biological attributes, of any demographic group and affect not only its demographic but also its social, economic and political structure, for they influence birth and death rate, internal and international migration, marital status composition, manpower, the gross national product, planning regarding educational and medical services, housing and others. Age and sex are also very important because they are the visible, indisputable and convenient indicators of social status. Each individual is ascribed a certain status.

Age and sex compositions can be plotted graphically in the form of a population pyramid. The base of this pyramid shows people of youngest age and the top shows people of oldest age. Population pyramids make the age and sex composition visual and easy to see. Age-sex pyramids display the percentage or actual amount of a population broken down by gender and age. The five-year age increments on the y-axis allow not only the pyramid to vividly reflect long term trends in the birth and death rates but also reflect shorter term baby-booms, wars, and epidemics. In the
words of Thompson and Lewis (1965) ‘a population is always changing, whereas a population pyramid is more or less a static picture. The proportions of people in the various age and sex categories change because of continuous action of mortality, fertility and migration.’ The pyramid can be viewed as a picture of the biological history of a population - the result of 100 years of births, deaths and migration.

There are three key types of population pyramids:

**Figure 1.1. Pyramid showing rapid growth**

This pyramid of the Philippines shows a triangle-shaped pyramid and reflects a high growth rate of about 2.1 percent annually.

**Figure 1.2. Pyramid showing slow growth**
In the United States, the population is growing at a rate of about 1.7 percent annually. This growth rate is reflected in the more square-like structure of the pyramid. The lump in the pyramid between the ages of about 35-50 reflects large segment of the population due to the post World War II “baby boom”. As this population ages climbs up the pyramid, there will be a much greater demand for medical and other geriatric services.

![Figure 1.3. Pyramid showing negative growth](Image)

Germany is experiencing a period of negative growth (-0.1%). As negative growth in a country continues, the population is reduced. A population can shrink due to a low birth rate and a stable death rate. Increased emigration may also be a contributor to a declining population.

1.3 b. Sex Ratio

It has been widely recognized that sex ratio (number of female per thousand male) is an important indicator to study the various aspects of a population, especially human development. Relative number of males and females composing a population is also very important. Generally slightly more number of males is born than females but males experience higher mortality rates than females. Exceptions occur in many countries like India where mortality of female may be higher than that of males in childhood and at ages of child bearing because of unequal allocation of resources within the family, poor quality of maternal health care and sex preferences.
Researchers advocate the women’s relative position in any society taking overall sex ratio of the population ignoring the fact that sex ratio is influenced by the current and the past vital rates of that population (Paula et al., 2000). Conceptually, sex ratio is a byproduct of three factors; sex ratio at birth (SRB), gender differences in mortality, and the amount of age misreporting and under count by sex. Usually, in such situation, gender differentials in mortality contribute to a large extent in changing the sex ratio of a population. This is because SRB of a population under natural condition does not depict the change in its value even over several decades. However, the combination of prevailing sex preference in a society and availability of advance medical techniques of sex determination test during pregnancy can create greater likelihood to manipulate the value of SRB through sex selective abortion. As a result, sex ratio will be in favour of that sex which has preference in society. In case of age misreporting or undercount, it is found that its extent does not differ much by sex, and therefore its ultimate effect on sex ratio is minimal (Premi, 2002).

The sex ratio within a population has significant implications for marriage pattern. Scarcity of males of given age depresses the marriage rates of females in the same age group or usually those who are somewhat younger and this in turn is likely to reduce their fertility.

1.3. c. Fertility

Human fertility is responsible for replacement and for the maintenance of the human society. Jones (1973) writes ‘the desire of man and woman to reproduce is embedded deep in their subconsciouses. Expressed fertility among humans is not just a physical phenomenon. It is directly associated with various demographic and socio-economic factors. Physical phenomenon or bio-social events which are associated with it are follows:

✓ Age At Menarche

Menarche marks the potential beginning of childbearing years but full fecundity is not established until several years later (Bongaarts, 1975; Kar and Mahanta, 1975). The age at menarche varies considerably in different populations. It depends on heredity,
nutritional environmental and various other factors, which has an ultimate effect on fertility.

✅ **Sterile Interval / Sterility**

Sterility can be described as the physiological incapacity to produce a live offspring. Pre-menopausal sterility is also reported by Sen (1953). The main causes of sterility are abnormalities of the reproductive system which prevent conceiving even during the prime child bearing years are increase in intra-uterine mortality and high prevalence of specific diseases- primarily gonorrhoea and genital tuberculosis (Bongaarts and Potter, 1983).

✅ **Age At Marriage**

Age at marriage has been the first step recognized by the policy makers to control the fertility. Age at marriage is a factor of considerable importance as it identifies the onset of exposure to socially sanctioned child bearing and becomes a principle determinant of the number of children a woman may have. Prevalence of early marriage has a number of demographic, social and economic implications, especially for those countries where fertility is high and average age at marriage is low. Malthus was the first person to suggest that postponement of marriage contributes substantially towards a reduction in the level of fertility by shortening the total reproductive span of the female (Chauhan, 1974).

✅ **Age At Menopause**

Menopause indicates the end of reproductive life of a woman. It is not as sharply defined as menarche and has wide range from 39- 59 years with the median age as 50-51 years. Menopause is defined as the permanent cessation of menstruation resulting from less ovarian activity. A woman’s fecundability typically peaks in her 20s and declines during her 30s; by their early 40s as many as 50 percent of women are affected by their own or their husbands’ sterility. After menopause, essentially all women are sterile. The average age at menopause is in the late 40s, although some women experience it before reaching 40 and others not until nearly 60.
Breastfeeding

Following the birth of a child, most women experience a period of temporary infecundability, or biological inability to conceive. The length of this period seems to be affected substantially by breast-feeding. In the absence of breast-feeding, the interruption lasts not more than two months. With lengthy, frequent breast-feeding it can last one or two years. This effect is thought to be caused by a complex of neural and hormonal factors stimulated by suckling.

Contraception

Contraceptive practices affect fertility by reducing the probability of conception. Contraceptive methods vary considerably in their theoretical effectiveness and in their actual effectiveness in use (use-effectiveness). Modern methods such as oral pills and intrauterine devices (IUDs) have use-effectiveness rates of more than 95 percent. Older methods such as the condom and diaphragm can be more than 90-percent effective when used regularly and correctly, but their average use-effectiveness is lower because of irregular or incorrect use. The effect of contraceptive measures upon fertility can be dramatic: if fecundability is 0.20 (a 20-percent chance of pregnancy per month of exposure), then a 95-percent effective method will reduce this to 0.01 (a 1-percent chance).

Religion and Caste

Age at marriage is influenced by religion and caste which also affects fertility. A study made by Srinivasan (1991) has shown that in the states of Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh, Christians had consistently higher age at marriage compared to the Hindus and Muslims in both rural and urban areas. He found that the mean age at marriage for both male and female are the highest among Christians as compared to the Hindus and the Muslims. Sinha (1957) commented that Muslims in most part of the world commonly do generate high fertility.

Education and Social Status

Women who are educated, independent and having higher socio-economic status usually invariably has lower fertility. Such women marry late, have fewer children
and may properly space their births. Throughout the world there appears to be a strong inverse correlation between the level of educational attainment and the level of fertility.

✓ **Economic Status**

Nothing much can be said about the inter-relationship between economic status and fertility. Some studies have shown that there is an inverse relationship between fertility and income (Hussain, 1970; Ghosh, 1975). On the contrary, there are studies, which have shown a positive relationship between economic status and fertility (Driver, 1963; Mandelbaum, 1974).

1.3. d. Mortality

Public health authorities, planners and demographers are always interested in knowing the present rates of mortality of population as also other allied details. They are profoundly interested in estimating the likely trends in future also. Mortality control and improvement in public health remain in high priority aims of public health authorities, though they cause increase in population growth rate. Thus they prove to be ‘necessary evil’ for highly populous nations but no country can leave the program for this reason.

Mortality studies in developing countries are often related to the level of economic development of the nations, or have examined mortality differentials by socio-demographic and environmental factors, both at aggregate and individual levels within a nation (Martin et al, 1983).

Mortality can be categorized into:

- Neonatal mortality: Death of infant in the first month of life
- Post neonatal mortality: Death of infant after the first month of life but before the first birthday.
- Infant mortality: Death of infant before the first birthday
- Child mortality: Death of infant between the first and fifth birthdays
- Under-five mortality: Any death before the fifth birthday
Infant and child survival is important parameter of health and development which is influenced by the socio-economic development and quality of life of population. Mortality rates can be distinguished into (i) Crude death rate, which is the total death per year (ii) Perinatal mortality rate (neonatal and foetal deaths per year) (iii) Maternal mortality rate (number of deaths of mothers due to child bearing) (iv) Infant mortality rate (number of deaths of children less than one years of age) (v) Child mortality rate (number of deaths of children less than 5 years old) (vi) Standardized mortality rate (adjusted according to the standard composition in terms of age, gender and other factors) and (vii) Age-specific mortality rate (total number of deaths of a particular given age).

The spectacular decline of mortality in India during the last few decades by the use of various public health measures, improvements in medical science, and the like, with fertility remaining practically at the same level, has given rise to fertility rates. The knowledge of precise levels of birth and death rates is necessary not only for indicating the nature of health and welfare activities, it is also essential for projection of future prospects of population growth. Vital statistics are indispensable to administrators in evaluation of social welfare programs. And now with launching of an intensive, costly and long range family welfare program in the country, the need for reliable estimates of the vital rates has become all the greater.

✓ Spontaneous Abortion

Spontaneous abortion of both recognized and unrecognized pregnancies and stillbirth also are fairly common, but their incidence is difficult to quantify. Perhaps 20 percent of recognized pregnancies fail spontaneously, most in the earlier months of gestation.

✓ Induced Abortion

Induced abortion reduces fertility not by affecting fecundability but by terminating pregnancy. Abortion has long been practiced in human societies and is quite common in some settings. The officially registered fraction of pregnancies terminated by abortion exceeds one-third in some countries, and significant numbers of unregistered abortions probably occur even in countries reporting very low rates.
1.3. Marriage

One of the main factors affecting fertility, and an important contributor to the fertility differences among societies in which conscious fertility control is uncommon, is defined by the patterns of marriage and marital disruption. In many societies in Asia and Africa, for example, marriage occurs soon after the sexual maturation of the woman, around age 17. In contrast, delayed marriage has long been common in Europe. In some European countries the average age of first marriage approaches 25 years.

In the 20th century dramatic changes have taken place in the patterns of marital dissolution caused by widowhood and divorce. Widowhood has long been common in all societies, but the declines of mortality have sharply reduced the effects of this source of marital dissolution on fertility. Meanwhile, divorce has been transformed from an uncommon exception to an experience terminating a large proportion (sometimes more than a third) of marriages in some countries. Taken together, these components of marriage patterns can account for the elimination of as little as 20 percent to as much as 50 percent of the potential reproductive years.

1.3.f. Family Planning

There are many definitions of family planning. An expert committee of WHO defined family planning as a way of thinking and living that is adopted voluntarily upon the basis of knowledge, attitudes and responsible decisions by individuals and couples, in order to promote health and welfare of the family and thus contribute effectively to the social development of the country (WHO, 2006).

India launched a nationwide family programme in 1952, becoming the first country in the world to do so. The early beginnings of the programme were modest with the establishment of a few clinics and distribution of educational material, training and research. During the third Five Year Plan (1961-1966), emphasis was shifted from purely clinical approach to the more vigorous “extension education approach”. During Fourth Five Year Plan (1969-1974), the programme was made an integral part of MCH activities of PHCs and their sub-centres. In 1972, MTP (Medical Termination
of Pregnancy) was introduced. During Fifth Five Year Plan (1975-1980), the country framed its first “National Population Policy”. Effective family planning programme in the country would have curbed fertility and mortality to a considerable level.

1. 3.g. Mother and Child Health

The conceptualization and measurement of health and quality of life are gaining increasing attention in the health services. One of the major issues in the health status measurement 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, economical and biological aspects of a population (Basu et al., 1994).

The objective of maternal and child health services begin with the immediate health through life to community. Realizing the importance of maternal and child health facilities, the Ministry of Health (Govt. of India) took steps to improve these services in First and Second Five Year Plan (1951-1956; 1956-61). The integration of family planning services with maternal and child health services were introduced as part of ‘Minimum Needs Programme’ during fifth five year plan (1974-79). The primary objective was to provide minimum public health services to vulnerable groups of pregnant women, lactating mothers and preschool children. In general, pregnant and lactating mothers and pre-school children are found to be the most vulnerable groups and need maximum attention.

The type of care received at childbirth is often critical for the health and survival of both infant and mother. A significant proportion of neo-natal deaths are attributed to poor birth practices; Family support at the time of birth is important. A 1998 study suggests that infants born in the houses of mother’s parents have significantly lower mortality rate than those born in the homes of father’s parents (UNICEF, 1990).

In rural India, poverty, illiteracy and multiple pregnancies take their toll on mother’s health and that of the breast-fed infant. High prevalence of anaemia and malnutrition
among the reproductive age group women, particularly during pregnancy and lactation can have irrevocable effects on the infant’s health. This necessitates development of field centres to monitor the nutrition status and anaemia in the population at large and to introduce user-friendly supplementation programmes to alleviate the nutrition related disorders (NFHS, 2007). It is recognized that women’s employment plays an important role in the variation in fertility levels within and between countries (Standing, 1983; Becker, 1993; Rindfuß and Brewster, 1996; Shockaert, 2005). As a result, the relationship between female economic activity and fertility is one of the most studied areas in fertility research.

Available data for Indian states shows a close correlation between maternal mortality and infant mortality rate (Padhi, 2001). There is global evidence showing that wherever infant mortality is high, fertility is also high (Sai, 1988; Ghosh, 1991). In the words of Kulkarni (1992) “any attempt to reduce fertility without reducing mortality would be like putting the cart before the horse”. Thus to reduce fertility, child survival rate should be raised first and this can be best done by universal immunization to all eligible mothers and children. This in turn would raise the overall health standard of the mass; reduce morbidity and mortality, and lower fertility.

1.3. h. Morbidity

Morbidity refers an incidence of ill health in a population. Certain diseases like cardiovascular problems, lung and blood diseases constitute a large proportion of causes of morbidity in individuals. A person can have several co-morbidities at the same time which can range from Alzheimer’s disease to any injury or cancer. It is measured in various ways, often by the probability that a randomly selected individual in a population at some date and location would become seriously ill in some period of time. Morbidity prevalence is studied in terms of disease composition- broadly acute and chronic. Ailments of less than 30 days duration is treated as ‘acute’ while those of more than 30 days duration as ‘chronic’.

Evidence derived from studies conducted in developed countries indicates that due to morbidity, part of the expected life is liable to be lost through incapacitation though concerns have been expressed by the researchers and health policy planners about
whether the disease burden due to morbidity follows the secular trend of mortality, there
have been very few studies to examine the trends and patterns of morbidity prevalence
across population groups for states in India (Ghosh and Arokiasamy, 2009).

Evidence from National level surveys suggests a positive association between self
reported morbidity prevalence and economic status of an individual (Dilip, 2002;
Duraisamy, 1998) and reverse relation observed by many in regional studies

1.4. LITERATURE REVIEW

1.4. a. A Brief Review of Literature

A number of demographic studies have been carried out both at national and
international front that has enabled the present understanding of demography. This
helps us to look into different phases of demographic transition as well as project
population changes several decades into the future, facilitating planning for millions
of people.

Tanner and Eveleth (1975) studied the different genetic, nutritional and socio-
-economic conditions affecting the age at menarche. Franda (1975) also studied the
population growth in India. In his studies on the different factors affecting fertility, he
found that low education status, early age at marriage, hurry to conceive, pregnancy
abstinence sometimes after parturition are factors largely affecting fertility.

Edmonston (1983), studied about the infant and child mortality in Bangladesh.
According to him the probability of infant mortality and chance of infants being under
weight increases if the spacing between the two children decreases.

Howe et al. (1985) reported among 17032 women taking part in the Oxford Family
Planning Association contraceptive study; 4104 stopped using a birth control method
to plan a pregnancy on a total of 6199 occasions. The influence of various factors on
fertility in these women was assessed by measuring the time taken to give birth to a
child. The most important finding was a consistent and highly significant trend of
decreasing fertility with increasing numbers of cigarettes smoked per day; some
relation was found between fertility and social class, age at marriage, and a history of gynaecological disease, but weight, height, and Quetelet's index were without noticeable effect.

Cornelius et al. (2000) found that alcohol and tobacco use during pregnancy have both been associated with a number of adverse effects on the growth, cognitive development, and behaviour of the exposed child. Understanding the effects of prenatal tobacco exposure allows researchers to identify those characteristics that are uniquely related to tobacco and those that are affected by alcohol exposure and can prevent various types of substance use during pregnancy and for treating children affected by prenatal substance use.

Thomas et al. (2001) studied the variability of age at menarche and age at menopause throughout the world, and to identify the main causes for age variation in the timing of these events. Data revealed that among several variables reflecting living conditions, the factors best explaining the variation in age at menarche were adult illiteracy rate and vegetable calorie consumption. Age at menarche is mainly determined by extrinsic factors such as living conditions, while age at menopause seems to be mainly influenced by intrinsic factors such as the reproductive history of individuals.

Spence and Eberstein (2002) investigated the relationship between the timing of first birth, parity, and women’s risk of post reproductive mortality over twenty-one years (1982–2001), among representative samples of black and white women in the United States and found early childbearing to be associated with higher mortality among whites, while later childbearing is associated with higher mortality among blacks. The effect of age at first birth on white women’s mortality is explained by background and mediating social, economic, and health related factors, but this effect remains robust for black women. In addition, childless white women have a higher risk of post-reproductive mortality than those with 2–3 children.

Skirbekk (2008) reported how fertility relates to social status with the use of a new dataset, several times larger than the ones used so far. The status-fertility relation is investigated over several centuries, across world regions and by the type of status-
measure. The study reveals that as fertility declines, there is a general shift from a positive to a negative or neutral status-fertility relation. Those with high income/wealth or high occupation/social class switch from having relatively many to fewer or the same number of children as others. Education, however, depresses fertility for as long as this relation is observed.

Beguy (2009) investigated the impact of female employment on fertility in two urban contexts in sub-Saharan Africa: Dakar (Senegal) and Lomé (Togo). The hypothesis that wage employment and maternal obligations are incompatible seems to be corroborated in Lomé, where women are likely to consider work as a legitimate alternative to their role as a mother or spouse. Being involved in economic activity is a real option and can therefore impact upon their reproductive life. By contrast, Dakar working does not seem to hinder family formation. Greater involvement of women in the labour force is not the main reason for fertility decline in Dakar.

One of the most recent estimates of under-five mortality from the Child Mortality Estimation (2011) show a 35 percent decline in the under-five mortality rate globally, from 88 deaths per 1,000 live births in 1990 to 57 in 2010. Over the same period, the total number of under-five deaths in the world has declined from more than 12 million in 1990 to 7.6 million in 2010 (UN Report, 2011).

In India, Chandrasekhram (1961) studied the physiological factors affecting fertility. According to him the age at marriage is either immediately after two years after attainment of puberty. Choudhary (1982) studied regulation, results and planning for reproduction in Indian Population.

Singh (1989) reported age at marriage of females among Tarao tribe of Manipur started from 14 years and continued up to 27 years of age. Bhasin and Bhasin (1990) have identified level of education, public health services, sanitation and living standards as factors affecting mortality among Gaddis of Himachal Pradesh. Kshatriya et al. (1993) have reported higher total fertility rate (TFR) among Bison and Maria tribes of Madhya Pradesh and compared to other Indian populations.
Choudhury et al. (1994) reported a high fertility among Mirdha tribe of Orissa and found poverty, illiteracy, worse environmental condition and early age at marriage to be some reasons attributing to high fertility. The age at marriage is found to be affected by bride price among Khond of Orissa (Singh, 1995).

Sengupta and Chakravarty (1995) have studied correlation of fertility and types of family among Ahom of Assam and found fertility to be high among rural women than the urban women and low fertility among joint families than nuclear families.

Samal et al. (1996) reported among the Jaunsari tribe of central Himalaya that traditional socio-cultural barriers bound them to get their girls married at an earlier age rather than economic conditions. Similar case is also found among the Kumauni and Bhotia tribes of Uttar Pradesh (Chachra and Bhasin, 1998).


The preference for early marriage is found among Lohar-Gadiya of Madhya Pradesh (Yadav et al., 2001).

Saraswathy et al. (2001) has reported a high fertility with low literacy rate among Kolams of Andhra Pradesh. Guha (1997) have reported a low rate of fertility among Bhotiyas of Uttar Pradesh and reported low fertility in correlation with their way of living. Pandey and Goel (1999) have related high mortality with poor medical facility, illiteracy and low economic status among Abujhmaria of Madhya Pradesh. Among Gonds of Madhya Pradesh, high mortality was believed to be caused by ghosts, spirits, sorcery but actual cause was found to be tetanus, whooping cough, cholera, small pox, etc. (Sharma and Sharma, 1999).

Navaneetham and Dharmalingam (2000) examined the patterns and determinants of maternal health care use across different social setting in south India: in the states of Andhra Pradesh, Karnataka and Tamil Nadu and found that determinants of maternal
health care services are not same across states based on the evidences from different maternal health care indicators. The level of utilization of maternal health care services was found to be highest in Tamil Nadu, followed by Andhra Pradesh and Karnataka. Part of the inter-state differences in utilization of medical facilities is likely to be due to differences in availability and accessibility among the three south Indian states.

Elizabeth et al. (2000) has related high infant mortality with high degree of inbreeding among Thoti tribe of Andhra Pradesh. Crude birth rate (32.83), general fertility rate (132.62), total fertility rate (3.4) and gross fertility rate (1.84) among the Thoti tribe of Andhra Pradesh has also been reported. Study on knowledge, attitude and practice of birth control among the Mao Naga of Manipur has revealed that though the modern birth control measures were widely propagated only few person adopted it (Maheo and Kalla, 2001).

Biswa and Kapoor (2005) attempted to study the socio-economic aspects which are collectively related with high measures of mortality level among Saharia, a scheduled tribe of Madhya Pradesh. In respect to the socio-cultural orthodoxy, they are enforced to practise marriage at early age, and early age at marriage and non-adoption of family planning usually resulted in frequent child birth. Malnutrition, insanitation, low living standard, harsh environment, etc., were found to be the reasons of causation of diseases. Due to absence of proper treatment, Saharias were found to be having high mortality rate.

Shekhar and Ram (2003) widely recognized that sex ratio (number of female per thousand male) is an important indicator to study the various aspects of a population, especially human development and investigated the related issues assuming that sex ratio technically depends on three factors: sex ratio at birth, sex-specific survival probabilities of juveniles and the degree of accuracy in age reporting by sex and the improvements in overall survival chances for female over a significant period. It reflects the postnatal discrimination against girls is weakening. Therefore, declining child sex ratios in India indicates an increase in sex selective abortion.
Kumar et al. (2006) explored the socioeconomic and demographic correlates of infant health in Kamars a tribe of Raipur district in Chhattisgarh. The correlation analysis was used to estimate the association of demographic and socioeconomic characteristics with infant mortality. The study showed an evident association of demographic & socioeconomic factors with infant mortality. The poor health care delivery systems remain an important barrier in rural setting due to lack of means of transport and distance to medical facilities. Social, cultural, economic and environmental factors also affect infant health, especially during the post-neonatal period.

Kannan and Nagarajan (2008) focused on the cause and effect relations on human fertility. Here fertility is used as the number of children ever born to a woman. The entire set of variables related to fertility are classified into Natural variables, knowledge variables and economic variables by Factor analysis and the effect of each group on fertility is discussed separately and collectively. Higher employment, higher income and nuclear family system could bring the reduction of the fertility rate in the women of Kanyakumari.

Goswami et al (2009) reported the reproductive performance of the Bhumija women of a tribal village of Baleswar, Orissa. The study reveals that the mean age at marriage is 16 years; the mean age at first child-birth is 18.14 years. There is less number of uterine wastage and post-natal death. The average number of conception per woman is 3.87 and the average number of live births per woman is 3.28. The Bhumija population exhibits very low pre-partum reproductive loss and post-natal loss.

Reddy and Sudha (2010) attempted to find out the influence of bio-social factors on fertility and mortality among Setti Baliya of Southern Andhra Pradesh. Low income group shows high fertility and mortality than middle and high income groups. The age at menarche is correlated strongly with the age at marriage. The study finds that women of early menarche and marriage will have higher rates of prenatal as well as postnatal mortality. The net survivorship of offspring is also related to the onset of menarche as well as age at marriage.
Pasi et al. (2011) analysed the association between infertility and gender-based violence (GBV). Out of total 2,023 infertile women 1,574 (77.8%) have experienced physical and/or sexual violence in last 12 months. Out of total 21,699 women having at least one child, only 1,332 (6.1%) have experienced physical and/or sexual violence in last one year. This shows that there is significant association between infertility and GBV.

1.4 .b. Review of Literature on the Santhals

Earlier many scholars such as Skrefsrud (1873), Bodding (1922), Troisi (1976) and others have reported on the socio-cultural aspects of the Santhal community as a whole. Bodding (1922) had studied extensively on Santhali language and spent most of his life to understand the life and culture of Santhals. He created the first alphabet and wrote the first grammar for the Santali-speaking native people in eastern India. He also completed the translation of the Bible into the Santali language. Some of his works also include Santhal folklore and folktales (1924); Santhal Dictionary (1933) and Santhal Riddles and Witchcraft (1940).

The two Santhal myths of origin, was originally collected by Skrefsrud (1887) in the Santhal dialect and later translated into English by Bodding (1942). Campbell (1953) had compiled a dictionary of the Santhals. Archer (1974), made an extensive use of the Santhal sung-poetry to understand the life and culture of the Santhals.

As observed by Mahapatra (1986), marriage is the occasion on which the Santhal song of cosmology is recited. The entire song is meant to put the occasion in a wider, universal context of society and tradition. Marriage as an institution, as he adds further, is referred to the beginning of human creation and the particular occasion of the marriage is sought to be viewed in the larger context of the creation of the world, the dawn of human civilization, the emergence of the Santhal community and its migration in historical times.

The Census of India (2011) and SRS (2011) provides information on population structure, passive health indicators and other vital statistics including infant mortality rate, maternal mortality ratio and crude death rate of the Santhals of Jharkhand.

Among physical anthropologists, Bhattacharyya et al (1981) have reported on the sickle cell trait in the Santhals of West Bengal.
A study was undertaken in two tribal dominated districts of West Bengal to study the household food security of Santhal farm families by Sinha and Lakra (2006). The study revealed that majority of households belonged to nuclear families with low level of education and farming as their main occupation. 44% of the household had food grains shortage throughout the year since past five years and 62% of them had inadequate grain production in the previous year. Except cereal, the diet of Santhals were inadequate and far below the recommended amount.

Sonowal & Praharaj (2007) have worked on health care systems among the Santhals of Orissa.

Intrafamilial resemblances in different morpho-physiological variables were examined among Santhals, a tribal population from West Bengal. Relationship between the parental and the filial generation is stronger in the transverse and longitudinal measurements, followed by head and face measurements and the weakest in the circumferential and bulk measurements (Ghosh and Malik, 2007).

Chakraborty et al. (2008) carried out a cross sectional study on 123 Santhal children of Ghatsila in Jharkhand and 105 Santhal children of Bolpur in West Bengal (aged 6 to 10 years) to assess and compare the physical growth and nutritional status. It was observed that growth pattern of Santhal boys or girls are similar between Ghatsila and Bolpur. Prevalence of undernutrition, though very high, was found to be similar between Santhal boys and girls of two regions, and in between Santhal children of Ghatsila and Bolpur. The severe underweight and stunting were higher in Santhal girls of Bolpur compared to the boys of same region. A poor growth rate and high prevalence of undernutrition were observed in the Santhal children of two surveyed regions. Prevalence of undernutrition was higher in girls of Bolpur compared to boys.

Das et al. (2010) reported community based cross-sectional study to determine the overall prevalence of under nutrition using BMI (kg/m2) among adult Santhal tribals of Purulia District, West Bengal, India. Females were found to be more undernourished than their male counterparts. This sex difference was statistically highly significant. The study demonstrated that Santhals of Purulia, both males as well as females, were under nutritional stress. In general, tribes of West Bengal were experiencing serious to critical nutritional deficit.
Chakraborty et al. (2008) made a comparative study on physical growth and nutritional status in Santhal children of Jharkhand and West Bengal and Banik (2008) had worked on the demography of the Santhals in West Bengal in comparison with the Santhals of Jharkhand. However, no anthropological study has so far been conducted on the bio-social determinants of maternal and child heath among the Santhals of Seraikela- Kharsawan District of Jharkhand to the best of our knowledge. It is therefore imperative to attempt an anthropological demographic study focussed on mother and child health in order to understand the dynamics of demographic processes operating among the Santhals of Jharkhand.

1.5. AIMS AND OBJECTIVES

The aims and objectives of the present study are:

1. To understand the bio-social determinants of demographic processes such as fertility, mortality and morbidity;

2. To understand the bio-social determinants of maternal and child health; and

3. To understand the overall health seeking behaviour of the Santhals of Seraikela-Kharsawan District of Jharkhand.

The present study is expected to provide useful information for facilitating future researchers besides generating data bank for intellectual inquiry. It would also provide essential information for governmental population planning and health policies in the state.

1.6. RATIONALE

The present study is expected to highlight some social, economic and biological factors affecting maternal and child health of the Santhals of Jharkhand. It would also provide useful demographic information about the population to further facilitate other researchers working in this field. This study is expected to generate data bank for intellectual inquiry besides providing essential information for governmental population planning and health policies in the state.

Anthropologically speaking, this study is population based. Role of different social, economic and demographic factors affecting the population characteristics are
studied. This would provide better understanding and increased knowledge about the population for further durable family welfare measures. The present study therefore would produce more meaningful results at micro-level and theoretical framework can be further strengthened based upon such empirical and comprehensive studies. The present study is also expected to highlight some socio-economic and biological factors affecting the reproductive performance and maternal and child health of the Santhals of Jharkhand.

1.7. HEALTH INDICATORS OF JHARKHAND

Some of the health indicators of Jharkhand in comparison with India is worth mentioning to understand the general health conditions of the present area. The health indicators of Jharkhand are higher than the national average with respect to CBR, TFR, MMR and total sex ratio while some indicators like CDR, IMR and female literacy are lower than the national average.

**Table 1.1. Demographic, Socio-economic and Health profile of Jharkhand State as compared to India figures**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Indicators</th>
<th>Jharkhand</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total population (Census 2011) (in crores)</td>
<td>3.29</td>
<td>121.01</td>
</tr>
<tr>
<td>2</td>
<td>Decadal Growth (Census 2011) (%)</td>
<td>22.34</td>
<td>17.64</td>
</tr>
<tr>
<td>3</td>
<td>Crude Birth Rate [CBR](SRS 2009)</td>
<td>25.6</td>
<td>22.5</td>
</tr>
<tr>
<td>4</td>
<td>Crude Death Rate [CDR](SRS 2009)</td>
<td>7</td>
<td>7.3</td>
</tr>
<tr>
<td>5</td>
<td>Total Fertility Rate [TFR](SRS 2009)</td>
<td>3.2</td>
<td>2.6</td>
</tr>
<tr>
<td>6</td>
<td>Infant Mortality Rate [IMR](SRS 2009)</td>
<td>44</td>
<td>50</td>
</tr>
<tr>
<td>7</td>
<td>Maternal Mortality Rate [MMR](SRS 2009)</td>
<td>261</td>
<td>212</td>
</tr>
<tr>
<td>8</td>
<td>Sex Ratio (Census 2011)</td>
<td>947</td>
<td>940</td>
</tr>
<tr>
<td>9</td>
<td>Population below Poverty line (%)</td>
<td>-</td>
<td>26.10</td>
</tr>
<tr>
<td>10</td>
<td>Schedule Caste population (census 2001) (in crore)</td>
<td>0.31</td>
<td>16.67</td>
</tr>
<tr>
<td>11</td>
<td>Schedule Tribe population (census 2001) (in crore)</td>
<td>0.70</td>
<td>8.43</td>
</tr>
<tr>
<td>12</td>
<td>Total Literacy Rate (census 2011) (%)</td>
<td>67.63</td>
<td>74.04</td>
</tr>
<tr>
<td>13</td>
<td>Male Literacy Rate (Census 2011) (%)</td>
<td>78.45</td>
<td>82.14</td>
</tr>
<tr>
<td>14</td>
<td>Female Literacy Rate (Census 2011) (%)</td>
<td>56.21</td>
<td>65.46</td>
</tr>
</tbody>
</table>

(Source: National rural health mission, 2011)
Table 1.2. Health Infrastructure of Jharkhand

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Required</th>
<th>Current status</th>
<th>shortfall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-centre</td>
<td>5057</td>
<td>3958</td>
<td>1099</td>
</tr>
<tr>
<td>Primary Health Centre</td>
<td>806</td>
<td>330</td>
<td>476</td>
</tr>
<tr>
<td>Community Health Centre</td>
<td>201</td>
<td>194</td>
<td>7</td>
</tr>
<tr>
<td>Multipurpose worker (Female)/ANM at Sub Centres &amp; PHCs</td>
<td>4288</td>
<td>5011</td>
<td>-</td>
</tr>
<tr>
<td>Health Worker (Male) MPW(M) at Sub Centres</td>
<td>3958</td>
<td>1922</td>
<td>2036</td>
</tr>
<tr>
<td>Health Assistant (Female)/LHV at PHCs</td>
<td>330</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Health Assistant (Male) at PHCs</td>
<td>330</td>
<td>660</td>
<td>-</td>
</tr>
<tr>
<td>Doctor at PHCs</td>
<td>330</td>
<td>330</td>
<td>0</td>
</tr>
<tr>
<td>Obstetricians &amp; Gynaecologists at CHCs</td>
<td>194</td>
<td>30</td>
<td>164</td>
</tr>
<tr>
<td>Physicians at CHCs</td>
<td>194</td>
<td>0</td>
<td>194</td>
</tr>
<tr>
<td>Paediatricians at CHCs</td>
<td>194</td>
<td>0</td>
<td>194</td>
</tr>
<tr>
<td>Total specialists at CHCs</td>
<td>776</td>
<td>40</td>
<td>736</td>
</tr>
<tr>
<td>Radiographers</td>
<td>194</td>
<td>0</td>
<td>194</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>524</td>
<td>348</td>
<td>176</td>
</tr>
<tr>
<td>Laboratory Technicians</td>
<td>524</td>
<td>381</td>
<td>143</td>
</tr>
<tr>
<td>Nurse/Midwife</td>
<td>1688</td>
<td>429</td>
<td>1259</td>
</tr>
</tbody>
</table>

(Source: National rural health mission, 2011)

As regards health infrastructure, there is a major shortfall of health sub-centres in the state and also health workers at the sub centres as well as other medical professionals. There is overall shortage of skilled human resources and difficulties in retaining them especially for the remote areas. Highest percentages of vacancies are noted in the posts of specialists. There is a huge attrition of contractual doctors. While human resources are inadequate with respect to the sanctioned posts, those available are not being used effectively. There is irrational deployment of doctors, and great need to improve the fit between specialists posted and patient load, including staff nurses. Thus we can say that the health infrastructural situation is quite grim in the state and needs attention to improve health conditions in the state.
1.8. ETHNOGRAPHIC PROFILE OF SANTHALS

1.8.a. The Santhals

The Santhals are the third largest tribal community of India after the Gonds and the Bhills respectively, with a population over 4.26 million. The Santhals are also one of the largest ethnic groups in India. They had a population of about 2,500,000 according to the census of 1931, and their estimated population around 1960 was placed at over 3,000,000 (Culshaw, 1949). They are distributed in the states of Bihar, Jharkhand, West Bengal, Orissa, and Tripura. The Santhals are divided into ten patrilineal totemic clans (pari), namely, hansda, murmu, kisku, soren, marandi, tudu, boske, pauria, charrey, and bedia, which are further divided into several sub-clans. Their traditional village council consists of the headman, (majhi haram), the assistant headman, (jog-majhi), the priest, (nacke), and the messenger, (godet). It also includes one adult male member from each household. The erstwhile traditional hunter-gatherer Santhals have transformed into settled cultivation and wage labourer today.

1.8.b. Origin of the Santhals

The species known as Ramapithecus was found in the Siwalik foothills of the North Western Himalayas. This species believed to be the first in the line of hominids lived some 14 million years ago. Researchers have found that a species resembling the Australopithecus lived in India some 2 million years ago. Scientists have so far not been able to account for an evolutionary gap of 12 million years since the appearance of Ramapithecus. The people of India belong to different anthropological stocks.
According to B.S. Guha (1944), the population of India is derived from 6 main ethnic groups which define *Adivasis* especially Santhals, Munda, Kol and Ho. *Proto Australoids* or *Austrics* came to India after the *Negritos*. They represent a race of people, with wavy hair plentifully distributed over their brown bodies, long heads with low foreheads and prominent eye ridges, noses with low and broad roots, thick jaws, large palates and teeth with small chins. *Austric* tribes, which are spread over the whole of India, Myanmar and the islands of S.E. Asia, are said to ‘form the bedrock of the people’. The *Austrics* were the main builders of the Indus Valley Civilization. They cultivated rice and vegetables and made sugar from sugarcane. Their language has survived in the Kol or Munda (Mundari) and Santhali among Santhals of Eastern and Central India. It is generally agreed that before the arrival of the Aryans in Bengal (a large part of Eastern Bihar was in Bengal at that time) proto-Australoid neolithic tribes lived here. Santhals are believed to be descended from them. They are long-headed (dolicocephalic), flat-nosed (platyrhine), stocky with dark brown skin. The present day Santhals still continues to bear these characteristics.

1.8. c. Santhali Culture

The Santhali culture has attracted many scholars and anthropologists for decades. Some studies of the Santhali culture were done by the Christian missionaries. The most famous of them was the Norwegian-born Reverend Paul Olaf Bodding (1929). Unlike many other tribal groups of the Indian subcontinent, the Santhals have preserved their native language despite waves of migrations and invasions such as Aryan, Hun, Mughals, Europeans, and others. Santhali culture is depicted in the paintings and artworks in the walls of their houses. Local mythology includes the stories of the Santhal ancestors *Pilchu Haram* and *Pilchu Bhudi*.

1.8. d. Santhali Language

The Santhali language is part of the Austro-Asiatic family, distantly related to Vietnamese and Khmer. A few of the Indian anthropologists also believe that humans first came to India about 55000-65000 years ago. Historians believe that they were the ancestors of the tribal community residing in the eastern part of India (excluding hilly
portions). The Santali script, or Ol Chiki, is alphabetic, and does not share any of the syllabic properties of the other Indic scripts such as Devanagari. It uses 30 letters and five basic diacritics. It has 6 basic vowels and three additional vowels, generated using the Gahla Tudag.

The modern Santhal script is a relatively recent innovation. Santhali did not have a written language until the twentieth century and used Latin/Roman, Devnagri and Bangla writing systems. A need for a distinct script to accommodate the Santhali language, combining features of both the Indic and Roman scripts was felt, which resulted in the invention of new script called Ol Chiki by Pandit Raghunath Murmu in 1925. For his noble deeds and contribution of the script Ol Chiki for the Santhal society, he is revered among Santhals. The Santhali language is closely related to Mundari as well as Ho, Korku, Savara and Gadaba languages spoken by smaller tribes (Culshaw, 1949).

1.8. e. Art and Music

Santhali culture is such that it had and has been attracting many scholars and anthropologists since centuries. The first attempt to study the Santhali culture was done by the Mughals which was followed by the Christian missionaries. The Santhal people love music and dance. Like other Indian ethnic groups, their culture has been influenced by mainstream Indian culture and by Western culture, but traditional music and dance still remain. Santhal music differs from Hindustani classical music in significant ways. Onkar Prasad (1985) has done the most recent work on the music of the Santhal but others preceded his work. The Santhal traditionally accompany many of their
dances with two drums: the 'Tamak' and the 'Tumdah'. The flute (tiriao) was considered the most important Santhal traditional instrument and is still considered important by most. Santhal dance and music traditionally revolved around their religious celebrations. This is still true to a degree, although traditional religious beliefs have been significantly altered as a result of influence of Hinduism and Christian missionaries. However, Santhal music and dance both retain connections to traditional celebrations. The names of many Santhal tunes are derived from the traditional ritual with which they were once associated. Sohrai tunes, for example, were those sung at the Sohrai festival.

1.8. f. Religion

Santhals have separate religion and it is called "Sarna". Even Indian Constitution does treat Santhals religion as separate one. Offering during worship is made within the pictorial boundary known as khond as a mark of the mundane relationship of the supernatural power. Image or idol worship is absent and traditional temples are inexistent in Santhal society. Both burial and cremation are practiced. The society is devoid of caste hierarchy and therefore, the Santhals are a casteless society.

By birth no person, family or clan group is superior or inferior. Blood offering is prevalent in the community. Earlier practice of cow sacrifice is now restricted. Priesthood is not appropriated by a particular clan group or a sect but is owned by the family members of the first settlers of the village. Occasionally selection of a successor of the old priest is held if he leaves no issue (male child). Mainly a divine person makes such a selection and it is undisputed.
Santhali rituals consist mainly of sacrificial offerings and invocations to the spirits, or bongas. It is believed by some scholars that ‘Bonga’ means the same as ‘Bhaga’ (or Bhagavan). The Santhal who follow the traditional religion have their gods, represented in nature. Thakur Jiu is their god and Maran Buru is their guiding spirit. In addition to these, the Santhals have clan and family deities or spirits called bonga. The dead ancestors are also considered to belong to the realm of bonga.

Although magic and witchcraft have also figured prominently in Santhal religious practices, Mukherjee (1962) believes that these concepts were probably borrowed from the Hindus. The Santhals strongly believed in the existence of witches in the society, who, motivated by envy and operating through the medium of the "evil eye" or other magical practices, visited sickness, death, and other calamities upon members of the village community. By means of divinatory practices exercised through the offices of the witch-finder and the Ojha (a kind of exorcist), the causative agents of the disease were determined and ritually removed, and the identity of the witch revealed. Once the name of the witch was known, that person was often beaten, fined, driven from the community, and not infrequently killed. Witches in Santhal society were inevitably female, while the Ojha and the witch-finders were male.

1.8. g. Social Organization

Santhal social organization has very interesting characteristics. It contains flexibility in rigidity. Marriage is one of the important components in the dynamics of Santhal society. It, indeed, have wonderful and interesting features. Therefore, more details description is given here for Santhal marriage to have understanding of Santhal life, and their feeling and sentiments. It, to some extent, depicts the Santhal way of life.

The basic family unit is the extended patrilocal family. Each village is usually composed of a number of lineages. The village is evidently the key political unit, but the largest formally organized territorial unit is the pargana, a loose confederation of approximately a dozen villages bound together to settle certain judicial questions and headed by an official called a parganath. Culshaw (1949) discusses the pargana, and
Introduction

this seems to be the same unit which Biswas (1957) calls a *bungalow*, describing it as an administrative grouping of villages headed by a *parganait*.

- **Kin group and Descent**

  The Santhals are divided into 12 clans and 164 sub-clans. They are patrilineal and strictly endogamous; their principal function is ceremonial and referential. The clans (*paris*) are ranked according to old functional divisions: the Kisku were kings, the Murmu priests, etc. There is an allusion to mythical wars between clans, ending in a ban on intermarriage. The ranking of clans is reflected in a slight tendency to hypergamy. Sub-clan hierarchy is expressed in terms of senior/junior distinctions as well as pure/impure; sub-clan identities focus on modes of sacrifice. On the village level, the local descent group is of major organizational importance. Here genealogical knowledge extends backward for only three to four generations. In some areas, there is a tendency for certain clans to intermarry unilaterally over several generations, forming a marriage alliance, but this practice never assumes the form of prescriptive marriage. Of greater importance, however, is the principle of alternate generations, which explains a whole range of joking and avoidance relationships. Politically, kinship is overshadowed by the functions of local chiefs and priests.

- **Kinship Terminology**

  The two main principles of the terminology are the distinctions between consanguine relatives and between affines. In address, there is a merging of all cousins into the sibling category. Despite the lack of a clear prescriptive alliance system, there is a tendency to marry the classificatory mother's brother daughter. The most distinctive Munda feature of the system is the alternation of generation (which recalls very clearly the Australian tribes). There is a slight tendency to have clan hypergamy, possibly a result of Hindu influence.
1.8. h. Marriage

Monogamous marriage system is the most prevalent one among Santhals, though polygynous marriage system is also found in some cases. The Santhali name for marriage is called **Bapla**. In Santhal society, marriage is one of sacred event of life and marriage adds up considerable respect in society. However, there are some traditions and customs which need to be strictly followed. It is strictly forbidden for any Santhal to marry within his or her own *sept* (*Parish*). He can marry into any other septs or sub-septs to which his/her mother belonged. There are some *septs*, which never intermarry with another in consequence of some ancient feuds between them. For example, a *Hansda* male or a female never marries a *Murmu* female or male respectively. Similarly, a *Tudu* male never marries a *Besra* female and vice versa. These customs are no longer effectively prevalent today. However, myths and tales associated with feud are still foretold among the Santhals.

Girls are married mostly to men of their own choice. In Santhal marriage, there is no restriction of age. The bride may be younger, older or of equal age with bridegroom. There are two types of marriage practiced by Santhals- the marriage arranged by **Raibar** (match maker) is the regular form of marriage.

**Raibar Bapla:** This form of marriage is most commonly practiced in Santhal society, where parents of both sides select the bride and groom. Once they liked each other, then **Raibar** (match maker) is appointed to negotiate between them. Generally, bride's father asks for bride price, which is usually divided among the bride's parents and

![Santhal marriage ceremony](image)
maternal and paternal grandmothers. The brother of bride will get a bull from the groom. It is customary not to fix the marriage date in the month of birth.

**Sanga Bapla:** In this form of marriage the divorced women or widow is married with a widower. Here, bridegroom and bride settle by negotiation which is mostly initiated by the males. In this marriage, bride price is very nominal. The binding ceremony of the Santhal marriage is the *Sindurdan* which is done not by applying the *Sindur* (vermillion) directly on the parting of the hair of bride by bridegroom, but instead he smears a *dimbu* flower with vermillion and fixes it in the bride's coiffure.

**Kudam Bapla:** If a girl becomes pregnant, the man who impregnated her is bound to marry her. Generally the man informs the *Jog Majhi* (assistant head man) of his offence and the girl confesses it to the wife of *Jog Majhi*. They then inform the parents of bride and bridegroom. As usual, bridegroom pays bride price and bull. Bridegroom at the time of applying vermillion stands facing west and bride facing east.

**Kiring Jawae:** If the couple belongs to the same *sept*, the headman calls for the village council and usually takes adverse decision on the issue. Here the boy's father has to bear the expenses of the marriage of the girl to another man. Then headman arranges the marriage for girl far away from village.

**Ghardi Jawae:** In this type of marriage, all expenses of marriage are borne by bride's father. In a common marriage the bridegroom’s friends are called *Bariat* but in this it is the friends of bride that are called so. In this kind of marriage the bridegroom pays nothing for his bride but lives with father in-laws and work for him without wages for five years. When man procure a *Ghardi Jawae* to get help in his agricultural works, in such cases, the girl's father sets aside a bit of land for this *Ghardi Jawae* and help him to get additional land. Once five years of service is over, the *Ghardi jawae* is free to depart.

**Tunki Dipil Bapla:** Poor men perform this type of marriage. As they do not have sufficient money to bear the expenses of regular marriage (*Raibar Bapla*), they resort this type of marriage. The bride is brought to the house of the bridegroom with small
baskets on her head; a few friends and relatives accompany her to her house. The
bridegroom in the presence of these persons applies vermillion on her head and the
couple then lives as husband and wife.

**Itut Bapla:** When young men are not quite sure whether the girl will accept them then
they go for this kind of marriage by compelling her to marry him. This type of
marriage is looked down by the society. Generally double bride price is paid and the
marriage is considered to be legal. But if girl declines to live, then she must take
divorced in full moon and cannot have the status of a spinster.

**Nirbolok Bapla:** This form of marriage can be said to be female variety of *Itut Bapla.*
Any girl, who cannot marry the man of her choice in the regular way, takes a pot of
rice beer and enters a man’s house and insists upon staying there. They do not adopt
any physical force to expel her from the house. It is said to be quite fair and usually
effective to throw red pepper in the fire, as by inhaling smoke she will be compelled
to run away. If she passes this endurance test without leaving house, she is held to
have owned her husband and family is bound to recognize her as wife. This type of
marriage also rarely occurs in Santhal society.

1.8. i. Divorce

Divorce is a common sequel to Santhal marriage and is granted at the wish of either
husband or wife. The following are the grounds for which the Santhal men and
women can demand divorce. The husband can demand the divorce if his wife is
proved to a witch, or on grounds of being sexually unfaithful or she does not obey
him or she lives always in her father's house. The wife can claim divorce, if husband
cannot supply sufficient foods, clothing, ornaments, etc. Sterility is another ground for
divorce. In case husband seeks the divorce, he cannot claim the bride price and he has
to pay certain amount of money as fine. If wife demands the divorce then her father
has to refund the bride price. The divorce is affected in the presence of the assembled
villagers in the following way: the husband is made to stand facing the sun on one leg.
He has a cloth rounded his neck each end which is held in the hand along with three
*Sal* leaves. Then taking the name of *Sin -Bonga* he tears the Sal leaves in the token
separation and upset a brass pot full of water. Wife does the same. There is belief that
if the Sal leaves are not fully torn or the lotta (Brass pot) are not wholly emptied then the couple must again come together.

1.8. j. Initiation Ceremony

Every male Santhal has to undergo an initiation rite through the Chacho Chatiar ceremony by which he becomes an effective member of the society and enjoys the rights, duties and privileges of a full-fledged member. Without this no Santhal can be married or cremated.

1.8. k. Birth and Naming Ceremony

When Santhal women get pregnant, she and her husband observe certain taboos. The husband during his wife's pregnancy never kills any animal nor participates in any funeral ceremony and does not come in contact with any dead body. The pregnant woman during the evening very rarely comes out of the house. She does not weep when the death of her relative occur. On the day of lunar eclipse, she will not come out of her room. She should not sit in the courtyard with her hair or cloth hanging downward. After the birth of a child, the house is considered polluted. So the Santhals performs the Janam Chatiar ceremony. Until it is done, no other activities can be undertaken. The usual day for the ceremony is fifth day for male and third day for female child. After ceremony, the men, women and children of the village who have assembled at the house have a cup full of rice water with the leaves of Neem. Generally it tastes sour. On the fifth day, the male child is given the same. Should it happen to be son and then he takes the name of grandfather. Should it be second son born, he takes the name of maternal grandfather and thus third of paternal grandfather's brother and fourth from maternal grandfather's brother and so on. The same procedure is followed for girls where the female relations are being sorted for naming in the same order.

1.8. l. Death Rituals

The dead are cremated as well as buried. When death of a respected person of the community who occupies an important post such as Manjhi, Paranik, Gudit, etc.
occurs, all Santhals participate in the death ceremony. The entire village has to mourn the death. On the evening of the death of a person, a rooster is killed and Khichadi (porridge) is cooked and offered to the soul of the dead. After seven days the Santhals purify themselves by bathing in a river. The last rites (Mandan) are undertaken at an appropriate time after another seven days. The last rites or purification are undertaken on the same day of the week as when the dead were buried.

1.8. Judicial System

The Santhals traditionally had an organized judicial system for the management and solution of the various problems within the community. They make every effort to solve the social problems arising within their community by themselves. The Santhal system of governance, known as Manjhi–Paragana, is compared to what is often called local self-governance. This body is responsible for making decisions to ameliorate the village’s socioeconomic condition.

The head of the Santhal community is called Manjhi Hadam. He is the chief of the executive, judicial and all other functions within society. He is assisted by other office bearers like Paranik, Jagmanjhi, Jagparanik, Naike, Gudit, etc. who carry out their respective assignments to solve various kinds of problems. According to Culshaw (1948), the Jogmanjhi is a kind of ‘censor of morals’ who is the guardian of the morals of the young men in the village and his wife gives moral lessons to the younger women. After the birth of a child, the Jagmanjhi and following the death of a person the Gudit and others are present. Manjhi Hadam enquires into judicial cases and the dispensing of justice and above him is Disham Manjhi, and further above both is Diheri. The Diheri is the highest judicial office bearer of Santhals. The Santhals who generally like to live in concentrated settlements of their own near rivers and forests are divided into 12 thars or groups. As the groups are in accordance with professional specialization, this appears as a form of social system. The Murmu are the priests of Santhals, Mardi the businessmen, Kisku are the rulers and Hemram judges. Similarly, the Tudu are musicians and Soren soldiers. The administrative organizations of Santhals are village council (Manjhibaisi), Parganna Council (Pramatrabaisi) and Council Labirbaisi, the highest.
Introduction

1.8. n. Inheritance

According to Santhal customary law, inheritance of property passes from father to sons in equal proportion. Females do not inherit the property. However, if a girl is still unmarried, a piece of father’s land is kept in reserve to finance her marriage.

1.8.0. Occupation

Prior to the nineteenth century, the basic Santhal subsistence pattern was hunting, but with an ever-increasing population the Santhals have since turned to agriculture. Today, the Santhals are predominantly cereal agriculturists, growing rice as their chief crop, and further supplementing this with millet, sorghum, maize, and some vegetable crops.

Cotton is grown for textile use. Santhal agricultural methods are primarily of the slash-and-burn variety, with little knowledge or application of crop rotation, irrigation, or fertilizers. Hunting, fishing, and gathering are of little economic importance today, although the annual "dehiri" hunt is an event enjoyed by most of the male population. Cattle are raised to some extent, as well as sheep, goats, pigs, oxen, buffaloes, cows, cats, and dogs. These animals are used as supplementary sources of protein in the diet, as well as for other purposes (e.g., rodent control). The Santhals trade extensively with neighboring Hindu peoples for the bulk of their everyday goods except for food stuffs and a few forest products. They fish in river, ponds and other water-logged areas with the help of nets, traps, bow and arrows. They also do fishing with the help of poisonous plants.

Figure 1.9. Santhal women at work in village Madhupur
1.8.p. Settlement Pattern

The community life of the Santhals hovers around their village. The houses are built on either side of the village street, which is wide enough to cross two bullock carts at a time. This kind of settlement is known as linear type settlement pattern. Every house has its main door’s opening on to the village street, but the entrance of each hut or room never faces the street, instead it faces the small courtyard of the house. The huts are generally two-sloped gable shaped, though four-sloped huts are also not very rare.

1.8.q. Dietary Habits

The staple food of the Santhals is boiled rice, locally known as daka. They usually take meals thrice a day. In the morning they take breakfast, known as basiam. It consists of a small quantity of cold rice or rice gruel, prepared with the evening meal of the previous day and is kept for the morning. In the morning the left over is eaten with salt. For lunch and dinner they have hot boiled rice with vegetable curry (utu). When available their vegetable diet is supplemented with fish and meat.

1.8. r. Festivals

Santhals celebrate loads of festivals in different occasion. Santhals follow cycle of nature and agricultural term to celebrate festivals. They celebrate festivals for invocations of the nature to help them in getting whatever they require and sometime to increase their wealth and to be free them from all their enemies. It is a tradition
among the Santhals to grow a tree outside their house after the purification process for different purposes.

The Santhals celebrate festival like Sohorai, from the end of Paush (December-January) and for the entire month of Magh (January-February). Karam festival is celebrated by the Santhals in the month of Aswin (September-October) in order to have increased रेणुका wealth and progenyरेणुका and to get rid of the evil spirits. During this festival, two youths after being purified, fetch two branches of Karam tree from the forest and plant them just outside the house. Other festivals of the Santhal community include Maghe, Sakrat, Baba Bonga, Sahrai, Ero, Asaria and Namah. They also celebrate haunting festival called Disum Sendra on the eve of Baishakhi Purnima.

**Ero (Paddy sowing festival)**

The Santhals, Mahali, Bhumija and Lodha celebrate this festival on the day of Akshitruyiya to worship mother earth with religions flavour and enthusiasm. A black cock is offered as sacrifice with non-boiled rice, flower, vermilion and incense sticks to propitiate mother earth for bumper harvest, prosperity peace and disease-free life. Dance amidst traditional tribal songs and beating of drums rent the air, which makes the festival quite enjoyable.

**Jamtala Bonga (Jantal)**

This festival is celebrated when the ear of paddy hangs downward exclusively in the year when crop is destroyed due to scanty rainfall. The god is offered male goat as sacrifice with a belief that propitiation of hill god will bring about bumper crops. The male goat so killed is distributed among the villagers on this occasion.

**Karam Parva**

This festival is celebrated in the month of Ashwin (September-October) or Kartika (October-November) and the auspicious day in fixed through a village meeting. A Karam Bough is planted on the altar in the middle of village. The village maids offer molasses, non-boiled rice, flower and vermilion and then story of ‘Karamdharan’; the god of fate is recited and it continues amidst dance, song and beating of drums till
morning after which immersion of Karam Bough is solemnised with the blessings of god of fate. It is their sincere belief that life becomes enriched with health in doing so.

**Makar Parva**

This prime festival of Santhals is celebrated with pomp and grandeur during Pausha (January) when the paddy reaping is half done and the mind is free from all lures and anxieties. Irrespective of colour and age all take part in it with religious gaiety and fervour.

This festival lasts for three days and celebration primarily starts night before Makar Sankranti. First day is celebrated from morning by burning logs of woods in the bank of river or near water reservoir. It is called Kumbha, done mostly by the children and teens. On the day of Sakrat, everyone in the family will take bath early and wear new clothes. In every household Makar Chaula and delicious cakes are prepared. After the head of the family offer food and drinks to ancestors and Ora bongs (house God) in the inner most (Bhitar orah) part of the house as a form of deity worship. After having food which includes mutton curry, chicken, pork, lamb, sheep, palatable cakes and country liquor (Handia), in every village, males will participate in archery competition and females come to witness. At first the village priest (Naike) will purify the target and set the distance for competitors. Three chances will be provided until someone hit the target. If someone hit the target, then he is considered the winner and he gets award with garland of flowers. Manjhi/Naike will worship and is followed with singing, dancing and playing of instrumental music. All those present there, are given rice-beer. Winner will be felicitated by Santhali traditional dance, song and music.

Santhal villagers are physically short people, men mostly with a beard and long but flat nose. Their skin complexion is dark and their physique is muscular. In the hills, the Santhals settle in villages comprising of closely clustered houses. The Santhal women use various ornaments as adornment. They are of silver, brass, bronze, shell, glass or flowers. Their houses are also decorated with beautiful coloured animal and
forest motifs. They are very skilled painters as well, and their folk-paintings have inspired many great artists.

In the chapter that follows, we shall be discussing the various materials and methods used in an attempt to understand the overall bio-social determinants of reproductive performance and maternal health among the Santhals of Seraikela-Kharsawan District, Jharkhand.