Chapter 2
TRIBAL HEALTH IN INDIA

Health defined in the Constitution of WHO (1994) that, 'Health is a state of complete physical, mental and social well being and not merely absence of disease and infirmity' is broad one which implies a perfect harmony of man's internal environment with his external environment consisting of physical, chemical and biological surroundings. This harmony also implies the status of health which can be measured on the basis of the parameters like sex-ratio, literacy, marriage practice, age at marriage, fertility, mortality, life expectancy at birth, forest ecology, child bearing and maternal mortality, maternal and child health care practices, family welfare programme, sexually transmitted diseases, genetic disorder, etc. Though health is recognized as a birth right of all citizens, there has been a wide gap between people's need and the achievement in the area of health. Health has now ceased to be regarded as an end in itself. It has become a major instrument of overall socio-economic development and creation of a new social order. The role of health in economic development has received increasing attention in recent years and can be focused primarily on four growth channels; viz., (i) health and labour supply, (ii) health and education, (iii) health and saving and (iv) health and labour productivity. Healthy labour force increases the participation ratio as well as hours of work. To reap the benefits of education, children must have a sound health. On the other hand, medical expenses deplete savings and investment in the education of children. The reduced earning potential of individual ultimately affects national income. That is, poor health condition can set off a downward spiral, causing poverty, further ill health and an inability to afford treatment.

In a landmark judgment, the Supreme Court of India has enlarged the scope of Article 21 of the Constitution which reads 'No person shall be deprived of his life or personal liberty, except according to procedure established by law'. For all intents and purposes it has declared that health, indeed good health, is a fundamental right. It has also held that every management, be it a state government or a public undertaking or a

private enterprise, is under the constitutional obligation to take care of its workers' health during employment tenure and even after retirement. According to the judgment, the health and strength of the workers is an integral facet of the right to life and denial thereof denudes the workmen of the finer facets of life. It has also declared that the right to human dignity, development of personality, social protection and rest and leisure is an equally important fundamental right (Singh 1995). While adopting the Constitution of India the Indian nation dedicated herself to the creation of a new social order based on equality, freedom, justice and the dignity of individual and to that end decided to eliminate poverty, ignorance and ill health. Besides, in the year 1978, when a group of health and social scientists brought out the report entitled 'Health for all by 2000 AD' they set goals for reduction in total death rate from 15 to 9 and in the birth rate from 33 to 21. This group of scientists was of the view that development of health care services is, of course, necessary but is not a sufficient condition for achievement of these goals. According to them, health is a function not only of medical care but of overall integrated development of society - cultural, economic, educational, social and political. Good health and good society go together. But this would be possible only when a number of supportive services such as nutrition and improvement in environment and in education go up to a very high level, for which special care would have to be taken for provision of adequate health care for all and specially for the underprivileged – the rural poor, the Scheduled Castes and the Scheduled Tribes and other neglected segments of the population (Sachchidananda 1994).

But despite the remarkable worldwide progress in the field of diagnostics and curative and preventive health, there are people living still in isolation in natural and unpolluted surroundings far away from civilization with their own traditional values, customs, beliefs and myths intact. They are commonly known as 'the tribal' and are considered to be the autouchthonous people of the land. About half of the world's autouchthonous people, comprising 635 tribal communities, including 75 primitive tribal communities, live in India. They are found in all states, except Punjab, Haryana and Jammu and Kashmir (GoI 1998). According to Census 2011 Indian tribes constitute around 8.2 percent of the nation's total population, consisting nearly 84 million

populations. The health problems of any community are influenced by interplay of various factors including social, economic and political ones. The common beliefs, customs, practices related to health and disease in turn influence the health seeking behaviour of the community. Moreover, there is a consensus agreement that the health status of the tribal population is very poor and worst among the primitive tribes because of their isolation, remoteness and being largely unaffected by the development process going on in the country (GoI 1998).

However, the attention on tribal health has not been adequate. This is because of the three reasons; namely, (i) there was a general belief that living close to nature they enjoyed an environment which is conducive to good health, (ii) the tribals have been regarded as not very amenable to western system of medicine as they still depend very much on supernatural causes and (iii) the difficult terrain where it is difficult to reach health service adequately (Sachchidananda 1994).

In this chapter it has been attempted to make an overview of the studies on tribal health in India to understand the various aspects of tribal health such as, concepts of health, disease and etiology, factors affecting tribal health, status of tribal heath, tribal pattern of health seeking behaviour and the changing scenario of the tribal health in India.

Health Culture of the Tribes in India

Tribes are relatively isolated and autonomous groups. The existence of own cultural and medical system is one of the important features of a tribal society. The tribal social structure has its own structural and ethnic specificity and the diseases that inflict upon the tribal people are likewise specific to the attribute of their social structure. Moreover, the knowledge of disease, their classification and etiology are constituents of their cultural system and they develop methods and ways of curing the diseases. However, contrary to the vast range of eco-cultural distribution and differences there are only a few studies on tribal dealing with health, disease and treatment. Sonowal and Jojo (2003) stated that tribal health maintenance system is attached with a lot of complexity intertwined with socio-cultural beliefs and practices. Even the concept of health of the tribal groups of India has not yet been properly defined. It has also been observed that

the universal index of a threat to health is expressed through withdrawal from work. Mahapatra (1994), therefore, sees health among tribal groups as a functional and not clinical concept. Sachchidananda (1994), on the other hand sees the field of tribal health as cultural one and part of social structure and organization which is continuously changing and adapting itself to changes in the wider society. Choudhury (1994) and Lewis (1998) believe that the study of tribal health should be with reference to their distinctive notions regarding different aspects of diseases, health, food, human anatomy and faith as well as in the process of interaction with modern world. Singh (1994) indicates nine factors to examine and assess the tribal health situation in India. In his study, he highlights the effect of changing physical environment on tribal health as physical environment is ultimately related to their economic pursuits, nutritional availability, medicines, etc. He has also emphasized that ecology and tribal health are intimately related. Moreover, studies of Barth (1956) and Fortes (1976) also reveal the influence of ecological niche on people's health status. On the other hand, Khera's (1994) study among the tribes of Maikal Hills of central India also shows that ecology plays an important, indeed, dominant role in creating structures of health and prosperity. Referring to the works of Basu (1986, 1989, 1990), Bardhan (1989), Roy-Burban (1986, 1990), Swain (1990), Mukherjee (1990) Sen (1986), Mahapatra (1990), Rizvi (1986), Mukherjee (1986) and Haq (1990), Basu (1994) he reveals that widespread poverty, illiteracy, malnutrition, absence of safe drinking water and sanitary living conditions, poor maternal and child health services, ineffective coverage of national health and nutritional factors are responsible for dismal health conditions prevailing among the tribal people. He also shows that nutritional anemia is a major problem for women of tribal belts, especially for those who have many pregnancies too closely spaced, affecting the child's survival. On the other hand, maternal mortality was reported to be high among various tribal groups. The chief causes of maternal mortality were found to be unhygienic and primitive practices for parturition (Basu 1994). In these studies, imbalance between traditional life ways and the newly imposed ecological setting is identified as the strongest deterministic factor in creating disturbance in tribal health

sphere. The problem intensifies which the tribal people are not in position to control their environment and the competent authorities ignore their duties and liabilities.

Jose Boban's (1998) study on the two tribal communities of Kerala; namely, Muthuvans and Mannans is an important task to the area of tribal health studies. In his study, he examines the medical practices and healing rituals among them to evaluate the changes occurring in the traditional medical system as a result of the influence of modern medicine. His study describes the ethnomedical system of the two tribes not as a set of abstract belief, but as an essential part of the social structure. As the various ethnomedical beliefs and practices are closely interrelated with the social organization, religious beliefs and life crises, due attention has also been given to each one of them in his study. In the study, he has observed some similarities and dissimilarities between the two tribal communities regarding health practices. Both the tribal communities have a rich knowledge of ethnomedicine and depend upon it for their health care. Their concept of etiology consists of both natural and supernatural causes for the origin of diseases. On the other hand, both the tribes have been exposed to modern medicine in the same period, though they did not accept it in the early stage of implementation. But their negative attitude was changed with the passage of time. As found in the study, the tribal communities of Kerala have no clear concept about health. In their society a person is considered healthy when he is not afflicted by any disease, consumes food as usual and carries out his normal functions without any difficulties. Similarly, when somebody falls sick, the family members employ all efforts to treat his illness and bring him back to normal condition. But they have not made any effort to prevent the occurrence of diseases by keeping personal hygiene and preserving sanitary environment.

On the other hand, the Mannans believe in both natural and supernatural causes for the occurrence of diseases. They believe that the common natural causes are poor diet, polluted food, overwork, hostile climatic conditions, accidents, unhygienic surroundings, poor sanitary facilities, etc. whereas the supernatural causes include sorcery, evil eye, attack of evil spirits, magical poison, anger of ancestral spirits, wrath of god, breach of taboo, curse of elders, etc.

For these two tribal communities religion plays an important role in all spheres of their life even in their health care practices also. Because of the lack of proper health education they derive the cause of many diseases from religious teachings. Thus, the supernatural forces play a direct role in the causation and cure of many of the diseases. The medicineman of the community acts as a mediator between the people and the supernatural powers. They also believe that a cordial relationship with the deities and ancestral spirits will ensure good health for the members of the community. Therefore, they perform various ceremonies to renovate their relationship with the supernatural powers every year during annual festivals. On the other hand, if proper propitiation is not offered to the deities and ancestral spirits, then, they will get angry and send diseases and other calamities to the members of the community.

Lastly, it is noticed that the ethnomedicine of both the tribes is in a process of change due to interaction with other clusters. Initially, the non-tribal immigrants from the plains influenced the tribal culture in a big way. But the introduction of modern medicine into the tribal universe affected ethnomedicine and brought changes into this system.

L. K. Mahapatra (1994) conducted a study on the Concept of Health among the tribal population Groups of India and its Socio-economic and Socio-cultural Correlates. While conceptualizing the term 'health' he mentions two components of tribal health. Firstly, an individual may be committing or omitting certain acts which may bring upon the individual or the household some affliction. Moreover, the individual's action may also cause some affliction to be harmful for the whole village, clan or larger group. But such conceptualization is not mediated through an intervening variable like sanitation. On the other hand, the second component is the belief in some benevolent and malevolent spirits or ghosts. In some cases, especially among the Buddhists, Hinduised and Christianized tribal groups, there is a belief in supreme being. As they believe, these spirits in every culture play an important role in ensuring health prosperity and protection to the family. But when these ancestral spirits are not properly honoured, worshipped or humoured, they invariably inflict some afflictions for the members of the family, cattle or crops.

Lack of food, lack of adequate normal food, effect of weather, excessive exposure to Sun or rain or cold and physical contact with a diseased person, etc. are some of the physical factors which have deleterious effects on health. Tribal people devoted a lot of time, energy and material resources to honouring, worshiping and appeasing of spirits, ghosts, deities, gods and goddesses. But the beings, and benevolent supreme beings or highest gods or goddesses, are seldom worshiped whereas the inferior spirits, ghosts or deities etc. are frequently remembered, approached and treated suitably. For this purpose chickens, goats, pigs or buffaloes or cows are sacrificed every week for the good health of the villagers (Mahapatra 1994).

Swain (1994) conducted a study on the 'Health, Disease and Health Seeking Behaviour of Tribal People of India' and revealed that health and disease are a continuous process and are interrelated with the health seeking behaviour of the community. But since the health seeking behaviour of the individual in a group depends on the value given to health and the life style of the individual it is natural to note that not all individuals view health in the same way. On the other hand, WHO defines it as a state of complete physical, mental and social well being and not merely absence of disease or infirmity which is too ambitious to be achieved in any situation. Therefore, the meaning of health differs depending on whether one is rich or poor, a town or country dweller, a cultivator or a white collar executive. According to him the tribals believe in two main factors as the causes of disease; namely, supernatural and physical causes. The supernatural causes of ailments can be divided into eight categories; viz., (i) loss of soul, (ii) breach of taboo, (iii) sorcery, (iv) ghosts of ancestors, (v) ancestral spirits and supernatural power, (vi) evil eye or evil mouth, (vii) mana and (viii) fetist. Likewise, the physical causes include (i) effect of water, (ii) effect of wrong food and (iii) accident and natural calamities. According to the tribals, natural causes of disease are the main cause of ill health among them. They believe that when man falls out of harmony with nature, then, they suffer from illness and become susceptible to diseases and accidents. Therefore, they tried to maintain balance and harmony with nature through rituals. On the other hand, tribals do not have much idea of food having positive influence on health but have a strong sense in its negative effect. Their foods and

cooking process are extremely simple and they try to stick to their own traditional food because of the fear of unknown. According to Swain, since the causation of disease in tribal society is simple, the method of diagnosis is also simple. Their method of diagnosis simply centres on invocation of disease causing spirits by Shamans. Tribals have used some scientific knowledge in the treatment of diseases which have been learned through traditional experience by trial and error method. But this knowledge does not exist in isolation, rather it is a part of their entire socio-cultural-religious system. On the other hand, the treatment procedure among the tribals can broadly be divided into preventive and curative methods. The preventive procedures include use of charms, amulets, animal sacrifice, propitiation of disease seeking spirit, worship of the God, belief in protective function of rituals. In this regard, Swain has referred to the Bhunjians tribe of Kalahandi which observed strict food taboos. Likewise, menstruating women are not allowed to enter a kitchen and a cowshed and also they maintain social distance from other communities. On the other hand, the curative practices mainly include worship of deities and spirits. In this regard, referring to the Kondhs of Orissa, Swain has mentioned that when anyone becomes ill in their society, first of all they call 'Jani', the traditional health practitioner. The Jani performs rituals; e.g., (i) he throws raw rice grams over the patient after reciting some spells, (ii) even after this performance if the patient is not cured, then, a thread is tied around his arms, (iii) if this also does not produce any result, then, chicken is sacrificed, (iv) if it still does not help, a goat or lamb sacrifice is performed and (v) finally, a pig is offered for sacrifice. But these offerings depend on the economic condition of the patient's household. Of course, the patients can be brought to hospital after any stage of this procedure, or even at last also. Nonetheless, if the patient is not cured in the hospital, they again go back for their traditional rites.

Lastly, it is observed that the native method of treatment and surgery are gradually dying out. According to him, when tribals were living in isolation, the native treatment was autonomous and being practiced simultaneously with magico-religious practices. But under the impact of modern civilization in some areas, it has lost its position in their society though the magico-religious system is somehow persisting (Swain 1994).

Sachchidananda (1994), in his study on 'Socio-cultural Dimensions of Tribal Health', recognized health as man's natural condition which is the result of living in accordance with natural laws pertaining to the body, mind and environment. These laws are related to fresh air, sunlight, exercise, rest and relaxation, sleep, cleanliness, elimination, right attitudes of mind, good habits and above all lifestyle. According to him, health is now recognized as a birth-right of all citizens. But there is a wider gap between people's need and the achievement in this area, especially among the tribes. Moreover, the attention on tribal health has not been adequate. According to him, this inadequate attention on tribal health is due to three main reasons, e.g., there was a general belief that living close to nature they enjoyed an environment which is conducive to good health. Secondly, the tribals have been regarded as not very amenable to western systems of medicine as they still depend on supernatural cures. Thirdly, the difficult terrain where it is difficult to reach health services adequately.

On the other hand, tribal health can be viewed in two main aspects, e.g., as a cultural complex i.e. a complex of material objects, tools techniques, knowledge, ideas and values and as a part of social structure and organization, i.e., network of relations between groups, classes and categories of persons. He also said that when we talk of tribal health it is necessary to acquire knowledge on these two aspects in itself and in relation to other fields of social life such as economy, religion, magic and law as a sub-system of social system which is continuously changing.

In the study it is also discussed that disease is one of the fundamental problems faced by every society and all societies have developed methods for coping with disease. It is also found that health beliefs and practices in tribal societies may appear to be a queer collection of errors and superstition. In most societies, besides recourse to supernatural remedies, one can find cauterization, surgery from fracture treatment to trephining, inoculation against smallpox and snakebite, digitalis and many other useful drugs. But the primitive psychotherapist's strength comes not only from the interpersonal ties between doctor and patient but also from the effect of the frequent participation of the entire community in the treatment.

Referring to the study of Singh, Ghosh and Gupta (1971), Sachchidananda said that any treatment involves two individuals, the healer and the patient. But when a system of medicine has its roots in alien culture there may be chance of conflict between different cultural values due to the rejection of alien system by the recipient. Therefore, the best way to overcome this problem is to understand practices and allow western medicine to find its place by following the cultural norms of the society in which it is to operate.

According to Sachchidananda, the notions regarding the causes of disease in traditional medicine are extremely interesting. As he observed, there is a close relationship between medicine and religion, morality and magic. In this regard he again referred to Elwin who has discussed about the association of gods with various diseases such as cough, colds, sore throats, boils, blindness, madness, diseases of pregnant women and diseases of animals. It is also found that most of these diseases can be cured by propitiating these gods directly, or through Shamans. But identification of a god, responsible to a particular disease is necessary before propitiation of the god. It is also seen in the study that the nature of treatment varies with the type of causes identified. For example, religious rites occupy a prominent place in the treatment of diseases such as smallpox and plague, which are associated with supernatural causes. Thus the social function of religion with regard to diseases and other calamities is to avert these events through magic, omens and taboos.

Environment, physical and social, is also a correlates of health. To examine the relations between environment and health, particularly tribal health, Buddhadev Chaudhuri has conducted a study on the 'Social and Environmental Dimensions of Tribal Health'. According to him, tribals do not represent a homogenous group, but show considerable variations in socio-cultural tradition, economy, language and even in physical features. They live in varied geo-climate and environmental conditions and their economy is largely influenced by the concerned environment.

In this study Chaudhuri has analysed that every culture irrespective of its simplicity and complexity has its own beliefs and practices concerning diseases and evolves its own system of medicine in order to treat diseases in its own way. In this

regard he has identified five major issues to be considered critically; namely, (i) supernatural belief related to disease and treatment, (ii) role and position of traditional medicinemen in the society, (iii) reasons for illness and treatment (iv) disease, treatment and community and (v) interaction of traditional and modern systems of medicine. It has been observed in the study that the interference of supernatural agency is particularly strong in case of the main economic pursuits and in the context of health and disease. In other words, different deities and spirits are connected with various types of diseases. Thus, most of the tribal communities have specific gods for their health and disease, for calamities, for the cattle and so on. On the other hand, it is also found in the study that religious performances occupy a prominent place in the treatment of diseases like smallpox, plague etc. which are believed to be associated with supernatural causes. In most of the tribal societies gods are believed as a responsible factor for different diseases of children, cough, cold, blindness, madness, diseases of pregnant women, of animals and so on. It is also believed that these diseases can be cured by propitiating the respective god associated with the disease either directly or indirectly through Shamans.

As found in the study, the priest, magicians or medicinemen have played an important role in case of treatment of diseases in tribal society. In their society when epidemics or diseases are prevalent in the village the priest offers a sacrifice at the sacred place. In this regard he is mainly entrusted with the benevolent deities. On the other hand, the malevolent deities are controlled by the magicians through magical performances. It is observed among some tribal groups to have separate priest magicians and medicinemen while in some groups the priest has played both the roles of magicians and medicinemen. It is also discussed in the study that as the nature of treatment is intimately connected with the causes of illness, so identification of causes of disease is very important. He has noted this link in his study among the Mundas where he has observed that magico-religious performances occupy a prominent place in the treatment of diseases. For example, if the reason of illness is identified as evil eye, sorcery or witchcraft the tribals always would call their own magicians instead of consulting a western doctor, as they strongly feel that the doctors are quite helpless against such evil forces which can be counteracted by the magical performances of the magicians.

According to Chaudhuri, various folklores are associated with health care practices in most of the tribal communities. Among these some practices are suggested to avoid illness or diseases, while some are prescribed to have better health. These folklores are practiced to avoid illness or food and other patterns during illness. Thus, socio-cultural traditions have played an important role in the context of health and treatment in tribal society. The common beliefs, customs and practices connected with health and diseases have been found to be intimately connected with the treatment of disease. On the other hand, the environmental dimension of health includes both the physical and social environment. Like socio-cultural tradition, health and treatment are very much connected with the environment, particularly the forest ecology. In a word, disease and treatment cannot be properly understood in isolation of environment in tribal society. According to Chaudhuri, the knowledge of many medicinal plants has often been derived through their observation of other animals in nature. But, due to deforestation the sources of various medicinal plants have been destroyed. Again, in many cases it has been observed that certain diseases may be common in certain areas, but they are controlled because of certain food habits based on vegetation available locally, or certain practices which have been generated through tradition. Hence, any disturbance in the eco-system is likely to affect the balance in human society. Moreover, the mode of utilization of available natural resources determines the long term impact on health.

Thus, Chaudhuri discussed the social and environmental dimensions of health in tribal society.

Factors in Tribal Health in India

Tribal health is indicated by various factors such as nutritional status, life expectancy, maternal mortality rates, disability rates, suicide rates, drug addiction, crime, juvenile delinquency, etc. On the other hand, social condition indicators like educational and cultural levels, status of women, housing and environmental conditions are also relevant to health. In this regard Bhupinder Singh (1994) has conducted a study on the 'Factors Influencing Health of Tribal Population Groups'. According to him the health of the average present day tribal is poorer. He has recognized health as a product

of complex interplay of several forces and factors. Physical environment, socio-economic state, nutritional availability and dietary habits, psycho-social culture, health culture and health related behaviour, mortality and morbidity patterns, genetic diseases and disorders, therapeutic systems in vogue and health delivery system are some of the major factors influencing health.

Lastly, Singh has suggested some prerequisites to be fulfilled for the better health status. According to him, a multi-sectoral hostile effort is a sin-qua-non. Moreover, preventive and immunization measures are also necessary. Simultaneously, the socio-economic condition of the tribal needs to be raised to an appropriately high level so that they can afford for themselves and entire community a sufficiently nutritious diet, hygienic surroundings and disease free living.

Another similar study on nutrition, conducted by C. J. Sonowal is 'Factors Affecting the Nutritional Health of Tribal Children in Maharashtra'. According to him, the perception of health and health seeking behaviour among the tribal people is intertwined with lots of factors; viz., traditional beliefs, practices, nature of interaction with physical environment and changing social, cultural and economic domain. Tribal population all over the world has been exposed to rapidly changing world around them but they are mostly unable to cope with these new situations. In the changing situation, their social and cultural customs are in transition whereas on socio-economic front they are lagging far behind others. Such incompatibility has made the tribal people more vulnerable to several aspects and out of them health care issue is a primary one. On the other hand, among the several health problems faced by the tribal groups, the problem of malnutrition and undernutrition seems to be the direct consequence of socio-economic disorganization of tribal societies. Therefore, the study tries to find out the impact of socio-cultural, political and economic environment of nutritional status of tribal children in Maharashtra and reveals that shortage of land and forest resources, lack of suitable job opportunity at local level and exposure to non-tribal domain has made tribal people suffer from lots of health and nutritional problems.

The study has shown that the concept of health and health care are intertwined with several factors among tribal population of Maharashtra like other tribal people.

Besides, physical and economic constraints faced by the tribal people in their day-to-day life, traditional ideologies also act as a determining factor in health and health seeking behaviour.

It was found in the study that malnutrition death was not a phenomenon unknown to the tribal people of this region before. But, as observed, such incidents were not known to be so widespread. Natural calamities followed by crop failure and lack of edible vegetation etc. preceded such incidents of child death due to malnutrition in the past. It is already established that female literacy, and subsequent awareness to several health and nutritional aspects of life, is one of the key factors for healthy life-ways for all human societies. But it has been observed that the female literacy rate is very low in tribal areas covered under the study. Thus, health related awareness programmes have been unable to create expected environment among them. It has also been accepted that early marriage has direct bearing on child's health. In the study it is found that girls of study groups get married at a very young age and almost 80% of them got married within the age of seventeen years. On the other hand, gap period between two births was remarkably narrow among them. As found 30% of women have only one year natural gap between two births and they have 53% of total malnourished children whereas 40% of mothers who have two years' natural gaps between two births have 38% of total malnourished children. Thus, a positive relation is found between malnourished children and age of marriage and gap period of two children.

C. J. Sonowal has also found in this study that the tribal people have their own views and perception about diseases and ailments. Accordingly, they have followed their own line of health care practices. But it is mentioned in the study that certain taboos during pregnancy and child birth, preference of magico-religious treatment, etc. have negative effect on health status of tribal mothers and children.

Food grain availability in the household from their own cultivation also shows some effects on child's nutritional status. As found in the study only 17% of the selected families subsist on their own produces for the whole year and the rest of the families have to depend on PDS for foodgrains. But it has been revealed that as many as 61

children out of total 123 were found malnourished among the families who subsist on their own produces for a maximum of three months' time.

According to Sonowal, the work load of mother and child's health is related, to a certain extent, to women who go out as migrant labourers and having children have negative impact on child's health. Nearly 48% of the malnourished children were seen in this category, followed by those children whose mothers leave them behind at home for the day and go for wage earning. Again, contrary to the perception that higher cash inflow would assure child's good health, data show that in some higher income groups number of malnourished children was high. Because the involvement of parents in wage labour increases the cash inflow at the cost of child's health. On the other hand, although primary cultivators do not earn much cash, they can take care of their children resulting in good health of them. Thus, the study confirms that various factors affect the nutritional health of tribal children.

Kh. Narendra Singh (2005) has conducted a study on 'Some Socio-economic Correlates of Fertility-Exploring RCH Data from Nagaland'. The study attempts to ascertain the impact of socio-economic conditions like educational level, standard of living and age at marriage on fertility level among the Naga women. The relevant data for the study were obtained from the district level household survey on RCH carried out in the state during 1998-99 sponsored by Ministry of Health and Family Welfare, Govt. of India. As the study covers whole the state, data were collected from all the districts of the state using probability proportion to size techniques and a total of 6830 samples were collected from the entire state. The data used in the study for analysis is on education level, standard of living, age at marriage, children ever born and children surviving. Standard of living index has been calculated using scaling techniques and values as used are type of house, source of drinking water, source of lighting, fuel used for cooking, toilet facility and ownership of items.

In the study it is found that 35% of the married women were 15-28 years and the remaining 65% were above 30 years of age. On the other hand, 15% of them solemnized their marriage before attaining the legal age at marriage i.e. 18 years. In case of literacy, the overall literacy level among the selected married women were 68% with 35% having

completed at least 10 years of education. It has been observed in the study that the mean number of children ever born and surviving were 4.1% and 3.6% respectively. The completed fertility level are measured by the mean number of children ever born to women aged 40-44 years in the state was 5.8%, whereas the completed fertility at the national level as measured by the mean children ever born to women aged 40-44 years is 4.5%. Therefore, the state is showing alarmingly high completed fertility level as compared to the national data. Similarly, the mean number of surviving children increases with age, reaching at 5.4 children to women aged 40-44 years. But variation of data were observed between the different districts of the state regarding the mean number of children ever born and children surviving to women aged 40-44 years where Phek district with 6.6 and 6.1 was stand in highest and Mokokchung district was stand in lowest position with 5.0 and 4.7 respectively.

It is also observed in the study that there is an inverse relationship between the level of women's education, standard of living and the children ever born to them, i.e., increase in the level of education decreases the number of children ever born to them. As stated in the study, an illiterate woman in the reproductive age (15-44 years) on an average had four children as compared to a woman with 10 years of education had three children. Hence, it can be said that higher the education attainment of a woman, lower is the fertility level. The better educated women could have lower order births than the less educated women and illiterate. But it is also observed in the study that despite the higher level of education and high economic status of women the fertility level also shows high in some districts of the state. This is because of the customs prevalent in their society where cultural factors play an important role in decision making process regarding child birth.

Like the level of education, the standard of living of the women also influences the level of fertility among the Naga tribes of Nagaland. It is observed that the level of fertility is highest in the district of Phek (6.6) and Tuensang (6.3) as the standard of living index data shows almost 73% in Phek and 90% in Tuensang districts fall in low standard of living whereas lowest fertility was observed in Mokokchung district (5.0) where 60% of the households falls under medium and high standard of living.

In the present study it is also mentioned that status of women is an important implications for fertility performance though it cannot reduce the fertility of a population alone. Various studies in this regard have shown that an increase in the level of emancipation of women significantly depresses fertility behaviour, irrespective of all other factors. In this regard Singh has mentioned about the women of Kerala that as they have high level of emancipation they have low fertility. But in case of the women of Meghalaya, a state of matrilineal system, we find a reverse picture where women having high social status, have much higher fertility than their counterparts of Kerala. Thus, it is apparent from the above data that higher social status of women alone cannot reduce the fertility of a population.

Therefore, the present study reveals that there is an inverse relationship between the level of women's education, standard of living and the children ever born to them. Hence, the better-educated woman could have lower order births than the less educated women as well as low standard of living. Singh in his study has highlighted some factors responsible for higher fertility where cultural values have occupied an important factor. Besides, Singh has reported several factors responsible for high fertility, among which common factors are such as- to continue the linage, to increase family or clan member, to increase the ethnic population size and support in cultivation or other household works and for old age security. Lastly, Singh has given some suggestions to control the high fertility among the females of Nagaland where spread of female education, proper understanding of fertility control programme and culturally appropriate information for preventive early marriage and child marriage have been selected as more important measures.

G. K. Mini and G. K. Moli (2005) have conducted a study on the 'Life Style Indicators among Tribes in India' to determine the prevalence and determinants of life style indicators like smoking, chewing form of tobacco and alcoholic consumption among the tribes. The analysis was done using data from NFHS-II (1998-99). The risk factors studied in the present study are smoking, chewing of tobacco and alcoholic consumption. In the study they have found that the prevalence of the three life style indicators, i.e., smoking, chewing and consumption of alcohol are high among tribes

compared to the general population in India. According to them, smoking is the highest cause of all tobacco related health problems all over the world and also in India. The available statistics show that about 4 million people die annually from tobacco related causes and by 2020 the estimate is about 10 million and related death in India may be exceed 1.5 million annually by 2020. On the other hand, tobacco related cancers account for one third of the total cancers among men and one-fourth among women.

According to WHO, alcoholic consumption has many health consequences resulting from intoxication and dependence. A study on alcoholic consumption conducted by K. R. Thankappan and G. K. Mini (2004) has reported high prevalence of alcoholic consumption among males (54.2) than females (17.4). As mentioned in the study the differential place of difference with the life style related indicators is an important aspect especially for tribal population. According to them, the origin of most of the tribal people in India is from rural areas and the urban tribes may be the migrated ones. Thus, in their study they have accessed the transitional changes in the health hazards of tribal population by analyzing spatial differentials. It is found in the study that smoking is high among rural men and women. On the other hand, the prevalence of chewing form of tobacco is high in urban areas for both males and females. At the same time, alcoholic consumption is high in rural areas without any gender bias.

In their study it is also observed that economic status of a person is also related to this behaviour. As mentioned in the study, the economic cost involved in these behavioural factors is a major alarm for the tribal community who are already living in a poor economic background. Reversely, they observed lowest prevalence of all the three indicators among tribes with high standard of living. On the other hand, it is also found that earning money from current work of a person is more significantly associated with the behavioural characteristics under consideration which need extra money other than their daily expenses. But the result of their study significantly indicated that earning is not a predictor of smoking among men and women, whereas alcoholic consumption among both the sexes is high among earning people.

The habit of smoking is also related with the marital status of a person. As found in the study smoking is more prevalent among divorced men whereas chewing is more

prevalent among currently married men. On the other hand, widowers are the highest consumers of alcohol. The relationship between marital status and behavioural characteristics is more relevant among tribal women because of the social taboo associated with tobacco use and alcoholic consumption. As observed in the study, the prevalence of smoking and drinking is higher among widows whereas the prevalence of chewing form of tobacco is highest among the separate women. Thus, they have analysed the existing relationship between marital status and smoking and drinking habits of man and woman in tribal society.

In the study, religion is also found as a determining factor of tobacco use. It is evident from the fact that use of tobacco is more prevalent among Christians in both sexes whereas drinking is more prevalent among Hindus without any gender differentials. On the other hand, it is found that though education does not have any direct influence on the behavioural characteristics, its indirect effect in the form of awareness is observed regarding the health consciousness. The result of the study seemed to be significantly associated with all the three behavioural characteristics with high prevalence for illiterates with exception in case of female alcoholic consumption.

Like economic status, marital status and religion, age of the people also seem to be important determinant of the prevalence of all the three life style indicators under consideration for both sexes. It is found that compared to the young age group-smoking is more prevalent in the age group of 45-59 years for tribal men and women whereas chewing was more prevalent among 30-44 years old tribals. It is also found that tribal rural men have higher tendency to have smoking and drinking along with lower chance to use chewing form of tobacco, compared with men living in urban area. On the other hand, in case of tribal women the odds ratio of tobacco use is lower for rural residents compared to urban women but rural women show double chance of drinking alcohol than urban women.

Thus, the significant relationship between standard of living and life style indicators is observed in the present study. According to them, the higher chance to have the prevalence of tobacco use and drinking alcohol among the tribes with lower standard of living compared to higher standard is a point of interest. It is also noted that earning

men have 68% more chance of smoking whereas only 14% have lower chance of chewing form of tobacco compared to men with no earning. But, among females, earning is observed to be a significant indicator of using any form of tobacco. Likewise, married people are found as more user of the three indicators of life in comparison to unmarried people.

Similarly, another study was conducted by Neelam Makol and A. M. Elizabeth (2005) on the 'Awareness, Perceptions and Practices of Health Affecting Behaviour among the Males and Females in Alwar District of Rajasthan'. According to them, the level of awareness, perception and practices of health affecting behaviour among any population is very important to develop strategy for the control of the expanding life style diseases. In the modern world there is an increase in life style related disease, which is generated by the individual himself to a large extent by oneself and presumed health boosting behaviour, i.e., alcohol, consumption, smoking and tobacco chewing which is increasing day by day among the adolescents. In this study an attempt has been made to know the awareness, perceptions and practices of Health affecting behaviour. Thus, the main objective of the study is to highlight the above mentioned level of knowledge related to health affecting behaviour among the males and females in the Alwar district of Rajasthan.

The study covered a total of 1007 households from 32 selected villages where males and females aged above 15 years were taken as samples and included a total of 1884 individuals, out of which 1212 were females and 672 were males. They were again classified as married females (949) aged 15-45 years, i.e., 36 adolescent married females of 15-19 years and 913 married reproductive age group females of 20-45 years, 92 unmarried adolescent females of 15-19 years and 171 pre-menopausal and menopausal women. On the other hand, the male populations included 77 adolescent males of 15-19 years and 595 were of above 19 years. Thus, the study covers all the age group of males and females.

In the study, higher percentage of awareness is found among males and females on the harmful effect of tobacco intake on health. In regard to alcohol consumption, majority of males and females are reported to have awareness of its harmful effect on

health. On enquiring about the complications that may arise due to intake of alcohol and tobacco in any form, it is found that almost all are aware of at least one symptom or complication that may arise or happen. But a few respondents have reported to have no knowledge about any complication. On the other hand, it is also found that self intake or habit of tobacco or alcohol consumption that majority of the populations have no such habits among themselves. Hence, it seems that people are reluctant to disclose their own habit of consuming these addicting things due to the societal stigma attached with this kind of consumption behaviour. However, among the smokers the bidi is the most preferred one followed by hukka, both of which have high carcinogenic effect.

Further, it is also found in the study that the habit of smoking is high among males above 19 years (48.6%), followed by menopausal females (25.1%) and adolescent males (11.7%). On the other hand, the NFHS (1998-99) report of Rajasthan shows that the rural men, who show the habits of chewing pan masala or tobacco constitute 17.8%, drinking alcohol 11.8%, currently smoke 43.4%. Among the adolescent 8.7% chewing pan masala, 1.7% drinking alcohol and 7.3% is currently smoked.

In case of females, those chewing pan masala or tobacco, adolescent females represent 1.5%, menopausal women 11.5% and currently smoke constitutes 16.2%. Thus, the males above 19 years of age and menopausal females are considered as role model for other age groups particularly among adolescents in encouraging consumption of these addictive items. In case of awareness, perception and practices related to tobacco and alcohol consumption, it is observed in the study that the populations have general awareness ranging from 79.3% to 98.7% for tobacco chewing and 71.9% to 90.9% for alcohol consumption between different age groups of male and female on this health affecting habits. However, there is a lack of adequate knowledge or detailed awareness with respect to complications that arise due to addiction of this life style behaviour among these communities.

Status of Tribal Health in India

In case of health status of the tribal people nutritional deficiency is found as a major problem and there is a wide variation at the level of nutrition of tribal groups. Some tribal groups are comparatively better nourished, whereas others have very poor

level of nutrition due to poverty, poor hygienic conditions and little access to preventive and health care. So, study about the nutritional status of tribal people is significant.

Although we do not find a good number studies on this aspect of tribal health, a study conducted by Rajesh K. Gautom and Dipok K. Adak on 'Nutrition and Genetic Variation among Central Indian Tribes' has tried to find out the relationships between nutrition and genetic variation among the tribal people.

Salil Basu (1995) has conducted a study on the health status of tribal women in India. According to him, there have been a number of studies on tribes, their culture and the impact of acculturation and also on the status of women relating to their socio-cultural problems, their economic rights, their participation in management, etc. But their health status has not been properly focused. Thus, the study of tribal women cannot be ignored. It becomes important because the problems of tribal women differ from a particular area to the other area owing to their geographical location, historical background and the process of social change. 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 her level of income, employment, education, health and fertility as well as the roles she plays within the family, the community and the society. In the study Basu has given a short account of the correlates of health of tribal women. According to him, health is a function, not only of medical care, but of the overall integrated development of society, culture, economic, educational, social and political. Therefore, each of these aspects has a deep influence on health which in turn influences all these aspects. Hence, it is not possible to raise the health and quality of life of people unless such efforts are integrated with the wider effort to bring about the overall transformation of a society. It is also found that the common beliefs, customs and practices connected with health and disease are immediately related to the treatment of disease. So, it is necessary to give holistic view of all the cultural dimensions of the health. On the other hand, environment, particularly the forest ecology, has also been given much emphasis as a correlates of health.

Basu has also discussed about the various parameters to examine the health status of tribal women. According to him health status of any community can be

measured in the light of some parameters like sex ratio, female literacy, marriage practices, age at marriage, fertility, mortality, life expectancy at birth, nutritional status and mother's health, child bearing and maternal mortality, maternal and child health care practices, genetic disorder, etc.

In the study he found that the male-female ratio in tribal society was found more even as compared to general society. Large imbalance in this respect affects the social, economic and community life in many ways. Higher or lower sex ratio reflects the status of socio-cultural programmes existing in the society. But, the sex ratio in tribal society suggests that females in tribal society are not neglected, the socio-cultural values protected their interest (Basu 1995).

J. C. Sharma (1994) has conducted a study on the 'Physical Growth and Nutritional Status of Tribal Children in Central India with Special Reference to Gond Tribe'. In his study he has mentioned that in India the regional and seasonal variations in food habits are guided by religious and caste consideration more than socio-economic reasons. According to him, insufficient calories either because of insufficient food, or because of faulty food habits in young children, can lead to very serious consequences, ranging from slower growth rate to permanent disability or even death.

Regarding general health status, morbidity and deficiency sings in children of Gond society, Sharma said that these are influenced by various factors such as food consumed, sanitary condition, sources of drinking water, etc. It is observed that Gonds live under very poor sanitary and unhygienic conditions. The only source of drinking water is the stagnant pools, shared equally by cattle and human beings. The water is infested with harmful bacteria and magico-organisms, from which most of the gastrointestinal disorders such as diarrhea, dysentery and infectious diseases occurred in the society. It is also found in the study that in Gond society vitamin deficiency diseases such as night blindness, blurred vision and anorexia are common.

It is also evident from the study that Gond children show short stature, low body weight, low subcutaneous, small head and chest circumferences as compared to all India standards. Similarly, Gond children from villages in the age group 1-5 years are about 74-77% of the Indian standards for weight. In other words, they show mild malnutrition.

It was observed in the study that majority of Gond children from villagers lie in 1st, 2nd and 3rd levels under standards with respect to triceps skin fold tribal children from Ashram school and hostels. On the other hand, in comparison to well-to-do Indians, the Gond children show small upper arm – circumferences and musculature and majority of children fall in 1st, 2nd and even 3rd levels under standards.

Thus, it was found in the study that Gond's diet is inadequate both qualitatively and quantitatively. The intake of protein, fat and carbohydrates fall short of the desired levels so that even the caloric requirements are not met fully. Their children look famished their bodies are under-sized and mental capabilities underdeveloped. They exhibit nutritional deficiency signs clearly marked on their bodies. Unhygienic living conditions and highly polluted drinking water have resulted in high incidence of *infectious diseases. In a word, the children have become victims of a vicious cycle of* malnutrition and infectious diseases which has resulted in high infant mortality and morbidity.

The study deals with the assessment of nutrition through Body Mass Index (BMI) and evolutionary variation using the Coefficient of Racial Likeness (CRL) among nine major tribes of central India; namely, Bhil, Gond, Kol, Korku, Korwa, Majhi, Oraon, Saharia and Sonr. Quetlet or body mass index (BMI) is widely accepted as one of the best indicator of nutritional status for the adults and may effects more nutritionally and genetically related changes despite wide variation between human populations in weight and height. Thus, it is argued that use of BMI as an anthropometric indicator of nutritional status may be more appropriate in a country with diverse ethnic group like India. In this study assessment is done by observing the deviations of the anthropometric measures from the normal standards. Thus, an attempt has been made in this study to examine the level of nutrition of adult males in nine tribes of central India. After determining mean, standard deviation and coefficient of variation of heights, sitting heights, body weight, economic indices and body mass indices of nine tribes it is found in the study that among the nine tribes Oraon are the tallest and heaviest, whereas Korwa are the shortest and Sonr are lightest. On the other hand, it is also observed in the study that among the nine tribes the Korwa are the shortest and they have the highest mean

BMI. Moreover, they occupy second place in body height. In the study it tried to understand the physical variation of the tribes. For this purpose the Penrose distance analysis is computed on the basis of eight anthropometric measurements; namely, stature, sitting height, weight, head length, head breadth, nasal height, nasal breadth and head circumference. After analyzing these they have found 1.20 and 0.33 mean value for shape and size distance respectively. So, the nine tribes show a tendency to differ more in shape distance than size distance and this is due to the morphological dissimilarities and differences. On the other hand, the coefficient of variation shows that these tribes have less variation of anthropometric parameters within individual tribal groups as compared to that between groups.

Thus, it is clear that there is a wide variation at the level of nutrition of these tribal groups. Some tribes are comparatively better nourished whereas others have very poor level of nutrition. As found in the study out of nine tribal groups four; viz., Sonr, Bhil, Korku and Gond were found more vulnerable from the viewpoint of nutritional status.

Tribal Pattern of Health Seeking Behaviour

Health seeking behaviour is an important aspect of health care practices. Simply availability of health care institutions and health care facilities do not indicate a good health of the people of a particular area, if the people do not seek or utilize these facilities. In case of tribal people it is observed in some studies that utilization of modern health care facilities is very poor as most of them have used home remedy as first preference of treatment.

Giving more emphasis on health seeking behaviour of tribal people, Meerambika Mahapatra and A. K. Kalla (2000) have conducted a study on Health Seeking Behaviour in a Tribal Setting on Bhattara Women in Six major Tribal Villages of Nabrangpur District in Orissa. They have selected Bhattara tribe because of their predominance place in all six villages. The women or the units of study covered were ever married women of each household. Thus, a total of 612 Bhattara women from 473 households were studied in the study.

As found in the study, infrastructural facilities such as drinking water, drainage and roads are very poor in these villages. Moreover, the hand pumps/ taps are not enough to meet the needs of all the people because water is supplied for 2-3 hours in the morning and evening, so the people have to use river water. There was no electricity supply to the houses of the Bhattaras. On the other hand, it is also found that in the PHC of Kosagumuda, a village covered under the study, there were four posts of doctors including specialists. But during the study only one doctor was found in the hospital and during his visit to outside the pharmacist or the compounder was in charge of the PHC which is found to bring poor reputation to the PHC.

Identification of the causes of morbidity is one of the main objectives of this study. As found in the study, a high percentage, i.e., 23.4% of gastroenteritis was reported in as a cause of morbidity in the village. On the other hand, almost 22% and 17% women were found as sufferers from fever and respiratory infection respectively and 14.6% were found as complaint of old age pain. Similarly, 0.2% women were reported weakness due to sterilization. But a major portion of women, i.e., 17.5% were reported as gynecological problem. But significantly, the villagers have visited to the PHC situated at Kosagumuda for diagnosis of the above ailments where only one doctor has provided his service. This is due to the lack of health care institutions in the study area. Thus, it is found that fever (22.2%) is the main cause of morbidity among the women of six villages followed by gastroenteritis (21.3%), gynecological complaints (17.4%) and respiratory infection (17.2%) respectively.

Regarding the use of available health facility it is found in the study that the Bhattara women used home remedy as the first preference of treatment for any kind of illness. As observed in the study, almost 49% of the women used traditional measures of treatment. On the other hand, 45% of them used all types of treatment including allopathic treatment available in their area whereas only 6% of women exclusively restored to allopathic treatment. Thus, it is found that the tribal women were not averse to the use of modern allopathic treatment despite the prevalence of the extensive use of traditional treatment.

It is also observed in the study that the sick Bhattaras generally did not take necessary bed rest during illness and at the same time their work output reduced significantly. They took rest only when they were seriously ill. During their sickness period they tried to take certain precautions for the first two days such as keeping check on their diet and taking home based remedy. As a method of treatment, they tried to take out evil spirit from the body of the sick person which was done by the old lady of the family or neighborhood as evil spirits are believed as the main cause of disease. On the other hand, if the illness persisted after having taken home based remedy, they visited *desari*, the local medicine man. For example, in case of *gundi* (measles) and maa (chickenpox), the sick persons go to *desari* and tried to satisfy the evil spirit. Therefore, no medical treatment was thought to be necessary by the people in these cases. But when the patient's condition goes out of *desari's* control then people would usually take the patient to the PHC. Surprisingly, if the patient is not cured after the treatment in the PHC, then he would once again be brought back to the *desari* for treatment. Thus, a vicious cycle of treatment is generated, shifting the patient from *desari* to PHC and from PHC to *desari* and so on, which is indeed not conducive to the health of the people.

In the study it is also observed about reasons of not seeking government or private health care facilities. In this regard it is found that 21.2% of the women considered their illness as not serious and the same can be cured by home remedy or by traditional therapy. So, there was no need to go to the PHC whereas, 11% of them believed that the illness was God's wish and nobody could do anything about it. So, they believed that if the God is satisfied, then he will show the miracle and will cure the sick and hence it was not at all needed to go to the PHC. However, 7.6% of the old women were of the opinion that old age health problems are natural and there was no point in wasting money on them. But 7% of the women could not avail health facilities due to the more distance of health centre.

The study confirms that the women covered by the study viewed health related issues in different ways. Therefore, variation on different aspects was observed among them. For example, the PHC is situated very far from the village and the doctor is never available there. Therefore, a doctor could not be depended upon for treatment of illness

at a time requiring immediate attention of a doctor. Moreover, the cost of medicine is very high and, therefore, the villagers are unable to avail the government health care facilities. Therefore, traditional healer or priest or locally called *desari* in the vicinity of the village is the first choice of treatment for any type of illness as he is easily accessible to the villagers at any time. Moreover, he is also considered as the decision maker for the sick person about going to a PHC doctor or to continue with his treatment. Thus, the villagers feel better to depend on traditional medicine as it is easily available and is potential enough to reduce the severity of the symptoms at the time of immediate need.

Thus, it is found in the study that quick therapy is considered as a part and parcel of allopathic system among tribals. Bhattara women used home remedy for any kind of illness on priority basis. But, it does not indicate that they did not use modern allopathic treatment for the treatment. Of course, in case of some diseases they have visited to their local medicineman as these are caused by wrath of goddess.

The rural and tribal populations in India face considerable disparity as compared to urban populations in terms of health facilities, education and economic pursuit. Therefore, to know these disparities or threats on health among the tribes of India, Satwanti Kapoor, Renu Tyagi, Kiran Saluja, Anumeha Chaturvedi and A. K. Kapoor have conducted a cross-sectional study among the Saharia tribe of Madhya Pradesh where a total of 364 people, 168 males and 196 females, in the age group of 18- 60 years were covered. Saharia is a socio-economically weaker population with lower population with lower level of literacy and primitive form of agricultural practices. Although, traditionally Saharias practiced shifting cultivation, hunting, gathering etc., due to lack of cultivable land, scarcity of rain, most of them have become daily wage earners. Tribal population is particularly vulnerable to malnutrition due to their traditional socio-cultural practices and low literacy level. According to them, though the socio-cultural profile of the Saharia have been studied by some other scholars but no study regarding their diabetic predisposition, cardiovascular health and nutritional profile have been carried out by any other. Therefore, the present study is conducted with this backdrop.

As found in the study the prevalence of pre-diabetic was more among the males of Saharia tribe. Among the study population almost 8.9% males and 7.1% females were

found to fall pre-diabetic category. But the range of blood sugar among females was lower than that among males. The pre-diabetic males were significantly heavier than pre-diabetic females. Similarly, the waist and hip circumferences of pre-diabetic males were significantly more than the males with normal sugar level, whereas among females hip circumference of the normal blood sugar group was significantly low.

On the other hand, the skin fold thickness taken at different sites over the bodies were significantly more among pre-diabetic males as compared to females. But in normal sugar level category female showed more subcutaneous fat at each skin fold sites as compared to their counterpart female. Systolic blood pressure waist hip ratio and fat percentage among both males and females were found to be higher among pre-diabetic Saharia males and females with the exception of body mass index and diastolic blood pressure among females. The mean value of blood sugar among females was found more in both the groups as compared to males. Both males and females in higher blood sugar category were found to have relatively more upper body fat predominance. Moreover, the Saharia females in pre-diabetic category had the largest fat percentage followed by normal sugar level females, pre-diabetic males and normal sugar level males.

In the study it is also tried to find out the relationship between blood sugar level and various indices of adiposity among Saharia males and females and found that body mass index was significantly but positively correlated with blood sugar level among males but regional obesity indices, waist hip ratio and waist stature ratio were significantly correlated with blood sugar level among females.

Thus, a noticeable proportion of the adult Saharia were found to be pre-diabetic. The people having higher blood sugar were also found to have significantly higher body weight, body mass index, waist hip ratio, higher fat percentage and higher blood pressure.

Another health problem faced by the people of the area is hypertension especially among the over weight and obese. Saharias are also no exception to it as with an increase in body mass index blood pressure increased among both males and females. Both of males and females worked as labourers with more rigorous physical activity noticed among females as evident by prolong working hours involving with out door and

household chores. This is because of the differential distribution of high random blood sugar and adiposity among males and females.

In the study it is also highlighted that socio-economic transition along with life style modifications can result in urgent health problems even in a primitive tribal group like Saharia. This socio-economically deprived population represents co-occurrence of high blood sugar level, high blood pressure and high fat percentage pointing towards beginning of metabolic syndrome which is very distinct and recent phenomenon among primitive tribal groups.

It is generally observed that the concept of health and disease in a society vary according to the socio-cultural levels of the different states. The higher income groups with higher education, standard of living and better knowledge have different concepts of health and disease as compared to the predominantly illiterate lower income group, which hardly had adequate the concept of health and illness. For example, the tribal people of India, who have their own way of living within social and cultural moorings and purely governed on the basis of local conditions and ethos. They believe that treatment is directly connected with the causation of disease. During the treatment, different types of magico-religious activities are performed. Moreover, they have also used various indigenous medicines prepared by local medicineman.

On the other hand, Basu, Jindal and Kshatriya (1994) in their study on 'Perception of Health and Pattern of Health Seeking Behaviour among the Selected Tribal Population Groups of Madhya Pradesh and Orissa', have found that one of the major issues in the health status measurement is the health seeking behaviour of a community which governs the morbidity and mortality pattern. According to them 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 as it is interwoven into every event of social, economic and biological aspects of a population.

Their study is based on 949 families of different tribal communities living in the Bastar district of Madhya Pradesh. They have identified some factors that have profound

effects on the health seeking behaviour of the tribal groups. These factors are: nutrition, living conditions, sanitation and hygiene, fertility, mortality and morbidity pattern.

They found that sanitation among the tribal groups is very poor. The animals are kept within the household compound which leads to poor environmental sanitation. Besides, these tribal groups depend on ponds, wells and rivulets for drinking water which considerably increases the chances of fungal and bacterial infection. It has also been observed that diarrhoea, respiratory infection and skin diseases are the most frequently reported diseases among them. On the other hand, malaria, tuberculosis, leprosy, venereal diseases, pneumonia and pyrexia, chronic ulcer, liver disorder and urinary tract infection are rampant. According to them, these are the result of their poor health consciousness which is governed by their social, cultural and magico-religious beliefs, low level of literacy, poor environmental sanitation, ignorance, nutrition and living conditions (Basu et al).

Maternal and child health care is an important aspect of health seeking behaviour, which is largely neglected among these tribal population groups. Expectant mothers to a large extent are not inoculated against tetanus. From the inception of pregnancy to its termination, no specific nutritious diet is consumed by women. Even the consumption of iron, calcium and vitamins during pregnancy is poor. Moreover, vaccination and immunization of infants and children are also found inadequate among them. Due to the poor personal hygiene, the children under 5 are found more vulnerable to various diseases.

In their study it has also been observed that due to firm, rigid and well developed system of primitive medicine tribal people do not come to avail modern medical system. They hold firm belief that a disease is always caused by hostile spirits, ghosts or breach of some taboos. Therefore, they seek remedies through magico-religious practices to propitiate the supernatural powers. On the other hand, herbal medicine or indigenous medicines are their next preference of treatment which is obtained through local people. It was observed among all the tribal groups that they perpetuate the use of tulsi leaves and turmeric powder in case of fevers and injuries. They have also used different herbal connotations to avoid pregnancies, treatment of infertility and some common ailments.

The tribal groups of Bastar district of Madhya Pradesh also sometimes resort to Ayurvedic system of medicine along with traditional and herbal systems. They utilize the services of local man as well as the Ayurvedic dispensaries.

Swagata Gupta and Rama Deb Roy (2003) have conducted a study on the 'Awareness and Adoption of Family Planning among Santhals of Madinipur District of West Bengal'. According to them awareness of family planning and methods adopted for controlling child birth are two basic indicators of the reproductive health consciousness of mothers. These two factors are related with some socio-economic and demographic characteristics like age, economic status, educational level, occupational pattern and the number of children of mothers. Therefore, in this study, an attempt has been made to compare this health consciousness of Santhal and non-Santhal mothers living in five villages of Jhargram Block of the district of Medinipur in West Bengal.

This is case study based on the empirical analysis of the statistical information on the behavioural patterns of mothers towards their own health care practices. The study covers 129 Santhal and 108 non-Santhal mothers in the age group of 15-49, out of which 90.7% mothers are currently married, 8.5% are widow and 0.8% is separated in Santhal group while the corresponding figures in the non-Santhal group are 92.6%, 6.5% and 0.9% respectively. On the other hand, their economic status has been classified into three categories such as very poor, poor and not poor. Similarly, they are also classified as workers and non-workers on the basis of their occupation and in order to examine the literacy rate they were classified as literate and illiterate. Mothers who have no formal or below primary level of education have considered as illiterate and who have passed primary level or above have been classified as literate.

In their study it is found that 63.6% Santhal and 87% non-Santhal mothers have awareness of family planning. It is also reported in the report of NFHS-2 that this awareness level is much higher for the state of West Bengal as a whole. In case of Santhal women, the family planning methods have been adopted by 45% Santhal mothers, among whom 70.7% have gone for complete sterilization through tubectomy, whereas in the non-Santhal group 76.9% mothers have adopted family planning methods and among them 78.3% had complete sterilization. Thus, the study found that non-

Santhal mothers are more conscious on family planning methods than Santhal mothers. But both the groups have preferred complete sterilization method of family planning. It is also found that non-Santhal mothers of all age groups are more advanced both in awareness level and using family planning methods including complete sterilization.

In the study, variations are observed in both awareness level and adaptation of family planning methods on the basis of different economic status of the mothers of Santhal and non-Santhal. As found in the study, in the very poor category 51.4% Santhal mothers are having awareness of family planning. In the poor category 57.1% Santhal and 89.5% non-Santhal mothers have awareness of family planning and in the not poor group 80% Santhal and 93% non-Santhal mothers have awareness of family planning. Thus, it is found that awareness of family planning increases with increase in economic status in both the groups and in all economic classes the shares of non-Santhal mothers are remarkably more than those of the Santhal mothers.

From the educational level of mothers it is evident from the study that both literate and illiterate Santhal and Non-santhal mothers are aware and they adopt methods of family planning with some variations. In both the communities, the percentage of literate mothers having awareness is more than that of illiterate mothers. Thus, level of education of mothers is also a factor of awareness of family planning methods.

Thus, perception of health and pattern of health seeking behaviour among the various tribal populations reveal dismal picture. Poor health seeking behaviour among these tribal populations can be attributed to social and living conditions, lack of competitive economy, malnutrition, illiteracy, ignorance, superstitions, improper and poor sanitation, unsafe drinking water unawareness of health education, underutilization of health resources, cultural lag, poorly developed mass media, poor medical and health opportunities and infrastructure.

Tribal Health Care System in India

Traditional health care systems have been prevalent in every country since the beginning of the civilization in one form or other based on medicinal herbs, roots and tubers and healing practices based on ayurvedic, *unani, sidh* as well as natural cure and yoga system. The tribal people or the indigenous people living closest to nature are

influenced more by socio-cultural and environmental dimensions in their healing practices. Since tribal belief relates to sickness as well as death and ill health to the curse or good will of the deities worshipped by the concerned tribes, appeasement of the God as well as destruction of evil spirits forms a major part of psychosomatic healing or health care system. It may be safely assumed that tribal people living closer to the nature would involve their well-being both physically and mentally to such dimensions. Hence, tribal health care systems are based on herbal medicine, ayurvedic medicine and other related systems like sidh yoga and rituals along with a strong leaning towards magico-religious practices associated with appeasement of God and keeping the evil spirits at bay.

Traditional health care practice is one of the primary aspects of tribal health. Most of the tribal communities have practiced or preferred their traditional method of treatment for different kinds of ailments or diseases. Therefore, different studies have been carried out by different scholars to know this aspect of tribal health. Among these studies a major study is carried out on the traditional health care practices among the Tagin tribe of Arunachal Pradesh by Pranjib Goswami, Dudam Soki, Anju Jaishi, Moushumi Das and Hirendra N. Sarma. The Tagin tribe is an indigenous group of people livening in upper Subansiri district of Arunachal Pradesh, North Eastern province of India, bordering Tibet, Bhutan, China and Myanmar. The Tagin people are of Mongoloid origin migrated from Tibet in different times and settled in their present homeland of Subansiri valley. People living in this area lead a rural life and depend mostly on the forest resources available in their surroundings. The Tagin tribe of Arunachal Pradesh has practiced the use of medicinal plants available in local forests for curing common illness. Therefore, a survey was carried out among the Tagin people inhabited in thirteen villages of upper Subansiri district. Ethnomedicinal data were collected following standard methods such as personal interview with villagers, group discussion and assistance of local information and among them nine were traditional medicine practitioners.

The study among the Tagin people revealed practice of an age old tradition of herbal medicine for cure and prevention of diseases and ailments. As found in the study

a total of ten medicinal plants are used for traditional medicine. All the medicinal plants recorded are used in human health care as well as for animal disease. On the other hand, as found freshly collected leaves are the major components of traditional medicine. It is also observed that while some of this indigenous preparation is used for topical application for wound healing, burn injuries, skin diseases etc., others are used for oral administration for health problems like stomach disorder, diarrhoea, joint pain, blood clotting, fever, tonsillitis, blood pressures, gastrititis and jaundice. The main reason of dependence upon traditional medicine is the lack of adequate communication, remoteness of the villagers and unavailability of modern health care facilities in their locality. This traditional knowledge system among the tribes is a complete system of theory and practice evolved through ages of human experiences and independent of conventional bio-medicine. Thus, they have used various methods of traditional health care practices.

In the study of tribal health, indigenous medicine is an important area which needs special attention. Therefore different studies have been undertaken by different scholars on this aspect of tribal health. Among these we may mention a study conducted by Keya Pandey and Suresh Pandey (2010) on the Indigenous Medicines of Raji Tribes of Uttarakhand. The Rajis are socially and economically most underdeveloped tribal community of central Himalayan region of Uttarakhand. They are one among the 72 primitive tribal communities of India, who live in an extremely underdeveloped stage. Like other tribal communities, they have also used various indigenous medicines for different kinds of ailments or diseases. In the study an attempt has been made to know the various indigenous medicines used by the tribe.

In the medicine system of Rajis, a different kind of classification or concept prevails which classifies diseases into three categories, e.g., Deity-linked diseases, Spirit-linked diseases and body-linked diseases on the basis of their knowledge of disease and illness. They have placed different diseases and illnesses under subhead, which are particular to their own culture. Deity-linked diseases include genetic abnormality, boils, chicken pox, weak eyesight, sudden bleeding with cough and leprosy. Spirit-linked diseases include high fever, severe headache, and severe headache

with red eyes. On the other hand, body-linked diseases include cough and cold, cut and wounds, dysentery and diarrhoea, earache, stomachache, eye ailments, toothache, asthma, urinary disorders and internal bleedings. The Rajis were aware of only the above mentioned diseases and problems. When a patient becomes unconscious or feel to take him/ her to the hospital then only they run for it else they treat them with their indigenous medicines or shamanism. It is observed in the study that presently the Rajis have started to use modern medicines. But there is great difficulty in persuading them to avail modern medical treatment because they have firm, rigid and well developed system of primitive medicine.

Almas Ali (1994) has also conducted a study on the 'Indigenous Health Practices and Its Relationship with Prevalent Diseases among Tribals'. For this purpose, he has divided India into six regions; viz., (i) Central Tribal Region, subdivided into (a) South Central and (b) North Central sub-regions, (ii) Western Tribal Region, (iii) North Eastern Tribal Region, (iv) North Western Tribal Region, (v) Southern Tribal Region and (vi) Island Region.

Discussing indigenous health practices Ali said that it refers to the measures relating to preventive health care diseases and its curatives which are being used by the people as medical therapy. On the other hand, it is also analysed in the study that the disease pattern and its remedial measures have a direct relationship with the eco-system and physical environment in which the tribal groups live. Therefore, the disease pattern and its specialized curative knowledge may be distinct for a particular region.

In his study he has identified some particular diseases prevalent in different regions. According to him, in the central tribal region which comprises Madhya Pradesh, Orissa, Bihar, West Bengal and Andhra Pradesh where primitive tribal communities like Bondo Paroja, Kutia Kondh, Birhor, Mal Paharia, Hill Kheria, Juang, etc. are living, incidence of communicable and vector borne diseases such as TB, Malaria, Leprosy, Polio, etc. are quite high. On the other hand, in the western tribal region which comprises of Rajasthan, Gujarat, Maharashtra, Dadra and Nagar Haveli and Goa, Daman and Diu, diseases like TB, skin diseases, urinary stone diseases and diseases of digestive tract are very much prevalent. Similarly, in the north eastern tribal region Malaria is

found as the most common disease. Besides, TB, VD, and other skin diseases are also present in this region. This region comprises eight states; namely, Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Sikkim and Assam. Uttar Pradesh and Himachal Pradesh fall in the north western tribal region where primitive tribes like Jaunsaries, Lahaulis and Kinnors are living. According to Ali, the tribals of this region have remained neglected, mostly due to remoteness of their habitat and difficult climatic conditions. There is concentration of tribal population in the southern tribal region which comprises Karnataka, Kerala and Tamil Nadu, properly known as trijunction. The major tribal communities found in this region are Malayali, Kurumba, Soluga, Irulas, Kotas and Todas. In this region diseases like TB, VD, Leprosy and Malaria are found mostly. On the other hand, though the inhabitants of the Island region are not recognized as *primitive tribal communities, we found some common diseases in this region also. These* diseases are VD and Malaria. This region comprises Andaman and Nicobar in the Bay of Bengal and Lakshadweep in the Arabian Sea. There are altogether six tribes in Andaman and Nicobar Islands, four in Andaman group of Islands and two in the Nicobar groups.

Thus, it is found in the study that various diseases are prevalent in the various regions of India. It is also found that most of the disease are found among the tribes and are caused by evil spirits, anger or wrath of gods, magic, witchcraft and breach of taboos. As per tribal concept, most of the diseases of children and women are caused by evil spirits or evil eye. On the other hand, epidemic diseases are caused by the anger or wrath of gods and personal diseases are caused by breach of taboos, whereas venereal diseases are caused by breach of sex taboos. In the study, four major issues have been identified in the field of conception of health and related health practices in tribal societies. These are: (i) in case of cleanliness and sanitary conditions less value is attached in their society, (ii) in their society, minor diseases of skin, digestive system, etc. are very often and are not considered as abnormal, (iii) women do not get pre-natal check up during pregnancy as it is considered as normal to a married woman and (iv) immunization of children is not considered as important.

Thus, we may summarize that within the frame of tribal conception of disease and even treatment, the supernatural have undoubtedly a significant place. But it does

not mean that they resort only to a magico-religious method of treatment. It is observed that there are many indigenous practices which incorporate a considerable amount of practical know-how, which has been derived from centuries' of experience in the use of various herbs and other substances to cure a variety of illness. The tribals have built upon some herbs in some way or another and found its efficacy.

In the field of ethnomedicinal practices V. L. N. Rao, B. R. Basi, B. Dharma Rao, Ch. Seshagiri Rao, K. Bharathi and M. Venkaiah (2006) have also conducted a study among the Khonds tribe of Visakhapatnam district in Andhra Pradesh. According to them due to the belief in supernatural elements and religion in the matters concerning health, the tribals are almost invariably found to repose faith in diviners or the traditional medicinemen, sorcerers and shamans. Ethnomedicine, as a method of treatment of diseases, deals with those beliefs and practices relating to health and disease, which are the product of indigenous cultural development.

In the study, they have found that almost 11 medicinal plants belonging to 10 families are used by the Khonds for treatment of various ailments. The Khonds largely depend on ethnomedicine for primary healthcare. Besides, they have also observed various local names of medicine, method of preparation and administration of medicine among the Khonds.

It is observed that indigenous treatment is used by the Khonds for various ailments such as snakebite, blood motion, induced abortions, delayed deliveries, epilepsy, jaundice, vomiting, diarrhoea, paralysis etc. On the other hand, the local medicinemen seasonally collects medicinal plants and plant products from their natural habitat and prepare decotations and paste with the mixture of leaves, tubers, stem, root, flower or buds, and administer the respective medicine in appropriate dose to the patients. The duration of treatment is usually one week for common ailments and two weeks for other diseases.

In the study, availability of different medical specialists are also observed such as general practitioners, traditional bonesetters, specialists in the treatment of diseases among children, poisonous bites, epilepsy, dental care, infertility and abortion. Similarly, the major diseases found among the Khonds are leprosy, gonorrhea, major

ulcers, paralysis, mental problems and snakebite. Thus, it is found that like other tribal communities the Khonds also used different ethnomedicines for the treatment of different ailments.

An important investigation was also done on the ethnomedicinal practices among the Lushai tribe of North Cachar Hills district of Assam by Albert L. Sajem and Gosai Kuldip in 2010. According to them, traditional use of plants from the Northeastern part of India has been documented for decades' altogether and still they have depended upon their indigenous knowledge for healing their ailments. The study documents the usages of 31 medicinal plants species belonging to 26 families and 31 genera by the Lushais. As found in the study, the use of aboveground plant parts was higher (79.06%) than the underground plant parts (20.93%). On the other, among the various parts of the medicinal plants leaf was used in the majority of cases followed by fruit. However, different underground plant forms such as root, tuber, rhizome, bulb and pseudo-bulb were also found to be in use by the Lushais as a medicine. The investigation also enlisted about 41 types of ailments to be cured by using 31 medicinal plant species. Similarly, most of the plants used by Lushais are found to bear a similar resemblance to that of the other tribes from the other parts of India. For example, the root powder of *Asparagus Racemosus* wild has been found to be effective in chronic peptic ulcer while the Lushais use it against stomach disorders. Thus, it is found that different tribal communities have used different medicinal plants for different purposes.

In sum, we may say that different tribal groups have practiced different religious beliefs and rituals as well as different indigenous methods of treatment for different kinds of ailments. Similarly, due to poor health care facilities and poor health seeking behaviours they have enjoyed lower health status resulting different kinds of diseases and ailments among them. On the other hand, due to high prevalence of traditional methods of treatment in their areas, they did not go for western medical practioners for any kind of treatment. Hence, they have occupied poor health status than other non-tribal populations in society. Although different studies have been conducted in the field of tribal health and on its various aspects among the tribal groups of India and North East India, no such study has been conducted among the Mishings, the second largest tribal

group of Assam, till now. Therefore, an attempt has been made in the present study to know the conception of health, disease, etiology as well as health status and its indicators, health seeking behaviour and traditional health care practices performed by the Mishings of Assam to maintain good health.