Chapter 2

Review of Literature
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To form a sound basis of study a comprehensive review is very much essential. "Study of the health status of different tribal communities in West Bengal" has wide potentiality for scientific investigation. After going through several journals, magazines and literatures it was observed that many studies have been conducted in the direction but they are on very limited aspect and hence of not so much use for the tribal communities point of view. An attempt has however, been made in this chapter to review the studies relevant to the present study.

For the sake of convenience of the study, the review of literature has been presented under the following heads:

A. Health status.
   i) General
   ii) Tribal

B. Profiles of the respondents
   iii) Socio-economic
   iv) Socio-psychological
   v) Communication

A. HEALTH STATUS

i) General
   Studies carried out by the National Institute of Nutrition (1971) and Planning commission Of India (Sixth five-year plan, Govt. Of India) reported high protein calorie malnutrition in the rice-eating belt. Further, Basu et.al. (1980) found that malnutrition is the major health problems in the world, especially in the developing countries of Asia, Africa, Latin America those are based on rice eating belt. Bhattacharya et.al. (1981) found that chronic energy
deficiency (CED) among the adults, protein energy malnutrition (PEM) among children and micronutrient deficiencies continue to affect a large percentage of population. The nutritional status of a population is generally determined by the quality and quantities of food. Ali (1992) found that the most glaring nutritional disorders in India are protein energy malnutrition, and iron, iodine, vitamin A and Vitamin B deficiencies. Ranjan and Singh (1994) pointed out that adequate nutrient intake is generally considered to be necessary for normal growth and development as well as for prevention of deficiency diseases.

The studies carried out by Kielman et.al. (1976) and Thompson (1977) in St. Vincent noted a significant positive association between the duration of breastfeeding and nutritional status. According to the report of WHO (1983), it has been also observed that the duration of breastfeeding is the most important predictor of nutritional status.

Srikanta et.al. (1976) established that haemoglobin level may be considered as one of the important indicators of nutritional and health status of an individual or a population. Mitra (1992) also observed the poor nutritional status with its concomitant problems of poor body weight gain during pregnancy. Low haemoglobin level was one of the primary underlying causes of maternal mortality in India. More maternal deaths occurred in India in one week than that of Europe in one year. Generally, malnourishment, poor medical facilities and unfavorable social conditions were the major underlying causes for high maternal mortality in India. Nutritional anaemia, a serious problem in pregnancy, affects 50% of the women of childbearing age in South East Asia.

Cervantes (1981) found that, disease is generally believed to be factor contributing to malnutrition. Both fever and diarrhoea were negatively correlated with weight for age. The common cold was positively correlated with nutritional status. This was surprising that nutritional status is inversely related to disease rate. WHO (1983) also observed the same findings.
According to Gopalan (1983), the health status in India is perhaps even worse than what the Governmental statistics reveal which is the common practice. The low health status in India, caused by the combined forces of poverty, illiteracy, ignorance and Governmental failure, is closely a major obstacle in Human Resource Development. The researcher has estimated that because of pervasive malnutrition, about 81% of the Indian children fail to develop their genetic potential for their physical and mental development.

According to Banerjee et al. (1983), there are a relationship between the economic condition and socio-cultural state of the community. The severity of malnutrition is more in the rural areas among the individuals of low-income groups and also backward communities in India. Kumar and Mishra (1992), and Tanuja et al. (1995) also found the same findings in their works. Carloyzn and Harphan (1992) observed that health status of a population is influenced by the environmental conditions, health services, characteristics of the population and socio-economic conditions. Grady et al. (1993) observed that studies of the determinants of health outcomes have long focused on individual risk factors, neglecting the socio-economic environment in which the outcomes occur. He also found that community has influence on health outcomes, so as to put health in its socio-economic environment. There is another study handled by Diez (2001), which related individual health outcomes to socio-economic characteristics of the community (eg, levels of economic development) and the community health infrastructure.

Mosely and Chen (1984) identified 14 proximate determinants (or intermediate variables) of growth flattering (the risk of infant and child mortality) and grouped them into five factors. They are natural factors (age parity and birth interval), environmental contamination (air, food, water, fingers, skin, soil, inanimate objects and insect vectors), nutritional deficiency (calorie, protein, and micronutrient), injury (accidental and intentional) and personal illness control (personal preventive measures and medical treatment).

According to Martorell and Ho (1984), it has been established that malnutritional status can be measured in two ways: one, based on ‘input’
indicators such as food and nutrient intake and the other based on ‘output’ indicators such as anthropometry (eg. height, weight, arm circumference) and clinical signs (eg colour of eyes and, hair and Hb level). Between the input and output indicators, the input indicators for an individual can vary quickly while the output indicators are relatively more stable over period except in case of sudden severe illness. Further, the data needed to measure the output indicators can be obtained from a single survey where as a variety of methods are required to measure the input indicators.

Rao (1985) suggested that food habits and beliefs are ingrained in the cultural pattern of a community. It is well known that dietary modifications during pregnancy have a profound effect on the nutrition of mother and foetus. While some cultural practices forbid the intake of some foods, other practices advise increasing the consumption of certain food items. Information on food habits and beliefs during the reproductive period help in assessing the cause and magnitude of malnutrition and in planning nutrition programs.

It was found in the report of the Govt. of India, Seventh five year plan (1985) stated that health has been acknowledged as an essential pre-requisite for human resource development. It has been also argued by Singh (1986) that low health status and high fertility in India are the main obstacles to Human Resource Development. According to Rao (1996) India’s current demographic phase is characterized by high fertility and moderate mortality rates. In relation to this, Sekhar and Reddy (1994) also found that despite a 40-year-old family planning programme, India’s 1991 census has shown a population increase of 160 million during the 1981-91 decade. Basu et.al. (2004) established that the gap between expressed favorable attitude towards the small family norm and knowledge and practice of family planning amongst Indian couples is intriguing. Although the criteria approach was adopted in the family planning programme of India, the emphasis was only on sterilization of male or female at the time of implementation.
An ICMR-UNICEF sponsored study (1986) covered a large sample of 1,80,000 in three urban slums of Chennai, Delhi, Kolkata and three rural areas near Chandigarh, Varanasi and Hyderabad and reported very high prenatal (65.3%), neonatal (57.7%), and infant (94.5%), mortality rates; 29.3% still births per 1000 delivers, and low birth weight of less than 2500gm in 39% of births.

According to John (1986), India’s share of total incidence of vaccine-preventable deaths and disabilities among the children in the third world country is the highest. For polio, tetanus and measles India’s share is 40%, 31%, and 39% respectively. On the other hand, India contributes only 15% in prevention of paralytic polio and 10% in deaths by other malnutritious diseases.

Jayaswal and Singh (1989) established the concept of health modernity through a definition stated as – “Scientifically correct information, attitudes and behavior in relation to physical and mental health, diet and nutrition, family planning, personal hygiene and environmental sanitation and such other issues which are essential pre-requisite. They further reported that the health modernity in tribals, has confirmed the very low extent of modernity. This study also confirmed the unhygienic living conditions, faulty food habits, lack of personal hygiene and environmental sanitation, and high intake of harais (rice-beer) and tobacco. The low level of health modernity is a consequence of their illiteracy and poverty. It is also due to absence of health education which are pre-requisites for healthy living and therefore, for human and social development”.

According to the report of WHO (1992) it has been established that indoors air pollution from the combustion of fuels for cooking exposes infants and children to irritant fumes and leads to respiratory tract inflammation, which in turn, may lead to repeated episodes of acute respiratory tract infections, paving the way for early onset of chronic obstructive lung disease.
Bradley et al. (1992) suggested that number of studies ranging from Uganda and Ethiopia to Brazil and Panama have established greater prevalence of diarrhoea and various infectious diseases in environment with poor housing, water and sanitation facilities.

Satterthwaite et al. (1995) established that children are the vulnerable group of the society increasing morbidity of the children as they learn the crawl and then walk, leads to an increase in the level of risk from environmental hazards in poor quality housing and living condition.

According to John et al. (1995), the most of the studies regarding nutritional assessment have been done specifically for children and very little work has been done on the nutritional assessment of adults. Studies revealed that adults also suffer from the various kinds of malnutrition, specially in the third world countries like India where malnutrition is even among the well to-do adults.

Ren et al. (1995) showed health care utilization behaviour as defined by the questionnaire responses to be the most important predictor are claim rate and group utilization rate, followed by perceived health status and certain health habits (ie caring about sleep, food and diet, watching body weight). Health-related worries, when used as a group variable, were not an independent predictor of utilization.

According to Mukhopadhyay et al. (1996), there are many evidences that blood pressure level of a population is influenced by a several biological, behavioural and socio-cultural factors. The same statement was also supported by Reddy (1998), Smith (1999), and Nirmala (2001).

Gupta (1999) established that nutritional anaemia is one of the nutritional problems which affects a large number of populations in many developing countries and individual suffering from nutritional anaemia is
widely prevalent particularly in high risk groups like pregnant women (40-88%), children below 6 years (60-70%) and adolescent girls (more than 50%).

According to **NFHS-2 (2000)** maternal health is characterized low uptake of prenatal care (35% of pregnant women vs. for all of India), and a reliance on home births (85% of all pregnant women vs. 65% for all of India). A large number of married women reported the experience of reproductive tract or sexually transmitted infection (RTI/STI) symptoms, while awareness of AIDS is low.

**Pickett and Pearl (2001)** analyzed that a recent growth of interest in measuring community-level effects on health outcomes has given rise to the increased availability of community-level data and a recognition that the determinants of health extend beyond individual factors to the community in which the individual lives. The development of multi-level modeling techniques has provided the means for estimating community effects on health.

**Sakata et al. (2001)** found that the skipping of breakfast has been associated with the lower nutritional status and the risk of cardiovascular diseases. It has also been reported by **Ortega et al. (1996)** that inadequate breakfast habits may contribute to the appearance and further development of obesity.

According to **Solenberger (2001)** eating disorder in the recent years, have been increasing dramatically among young women. The result of the researcher’s study did not confirm this suggestion to the level of statistical significance; however it is worth pointing out that 65.0% of female students with BMI<20, which is under normal weight range, indicated a desire to be thin. Dissatisfaction with body figure and eating disorders are closely related. **Williamson et al. (1993)** and **Waller and Hodgson (1996)** found the same findings in their research works. In this same aspect, **Pratt and Woolfenden (2004)** observed that being young, female and identified risk factors that have been reliably linked to the development of eating disorders.
Ohki et al. (2001) suggested that, in order to maintain and/or improve the health status of women, good dietary habits and physical activities, such as walking, and psychological support are essential.

Du et al. (2002) established that decreased levels of physical activity and leisure are linked to increase in the prevalence of an overweight condition, obesity and diet related non-communicable diseases.

WHO (2002) found that hypertension is a major public health problem in developed countries. An increasing trend is observed in the prevalence of hypertension in Indian rural population. Blood pressure and rates of hypertension have been shown to increase in traditional and also in migrant population due to undergoing modernization, way of lifestyle, (eg. food habits, habit of consumption of alcohol, more intake of salt, smoking) etc.

Amamoto et al. (2004) found that irregular lifestyle was significantly related to indefinite complaint, with the majority of students having a desire to be thinner although the prevalence of students who were over weight was very low.

Pieter van 't Veer et al. (2005) noticed that the increasing rate of the intake of fiber in Western populations, where intake is far below recommended levels, might contribute to the prevention of hypertension.

According to Paul Elliott et al. (2006) vegetable protein intake was inversely related to blood pressure. This finding is consistent with recommendations that a diet high in vegetable products be part of healthy lifestyle for prevention of high blood pressure and related diseases.

The study of Medhi et al. (2006) identified broad dimension of health and nutritional problems of tea garden population of Assam, based on which public health action can be strengthened. A comprehensive public health policy should be developed including preventive, promotive and curative measures to address the health and nutritional needs of tea garden population. Welfare
measures by garden authorities should be strengthened for better sanitary measures and safe drinking water, better housing, adequate food supply, medical care and for overall improvement of socio-economic condition. Equally important is to educate the community about personal hygienic practices and environmental sanitation, taking preventing measures against commonly prevalent diseases, health risk associated with alcohol and tobacco, appropriate child-rearing practices etc. Response to the various health programmes like de-worming and HCH care is not satisfactory. Health programmes can be made accessible to community in efficient way through community participation.

Matthew et.al. (2007) reported that contemporary public-health theory has given steadily more attention to the role of environments in influencing health status. Environments, both social and physical, influence health directly or through complex interactions with behavior, genetics and health-care systems. They are also important for public-health because environments are the complex systems through which people are both empowered and exercise their empowerment.

ii) Tribal

According to Chitre (1946), studies available on the diet and health of the tribals of Bihar and Maharashtra found the deficiency in the calorie as well as in the protein and essential amino acids in their diets although major signs of nutritional deficiencies were not observed.

The survey on the nutritional deficiencies conducted by Gopalan (1971) on the tribal community of Mompas in Assam, reported high incidence of Goitre, angular stomatitis and Vitamin deficiency among them.

Ray (1975) investigated a result of poor health and found that in the developing countries, particularly in the tribal and rural areas, access of maternity care is very poor.
A study had shown that most of Kondhs consumed as little as 1700 calories Sharma (1979) compared to the ICMR stipulated requirement of 2400 calories and over 55% of Kondhs consumed less than 2000 calories per day Patel (1985).

A study among the Pauri Bhuniyas of Orissa by the researcher Ali (1980) have shown that 52 women as against 17 men in a sample of 268 persons suffered from disease related to malnutrition. As a result of deforestation, additional distance and less fertile soil, the availability of food for the tribal family was reduced. This had implications particularly for the housewife who is responsible for the provision and distribution of food, in cases of shortage, she even deprived herself of food in order to feed the others. Studies in this connection have shown those tribals in general were undernourished.

Basu (1985) observed that among most of the tribal groups, the staple diet was rice or minor millets. The Mompas of Assam who consumed wheat also. The tribes also consume birds, fish and other meat products occasionally.

Barua (1984), Dutta Choudhuri et.al. (1984), Datta, Choudhuri (1985), Guha (1986 a, b), Bhatt (1986) and Guha (1990) observed that the traditional outlook, customs, rituals, beliefs, habits and concepts of aetiology, as well as diagnosis and treatment of diseases are changing fast under the impact of an ongoing modernization process. There is a general agreement that the health status of the tribal population in India is very poor. Different studies have been worked out by Rizvi (1986), Roy Barman (1986,1990), Basu et.al. (1987, 1989, 1990), Bardhan et.al. (1989), Swain et.al. (1990), Mukherjee, B.M (1990), Mahapatra, S. (1990), Haque (1990) in this aspect. The deficits of calcium in the diets of pregnant and lactating tribal women of Western and Central India were reported by Gopalan (1987). The intake of iron and vitamin A were found to be low. Detail clinical examination of the Kannikar tribal women showed that anaemia (90%), vitamin A deficiency (30%) and niacin
deficiency (10%) were prevalent among them. The morbidity status of the tribal women revealed the prevalence of pyrexia, respiratory complaints, gastrointestinal diseases and rheumatic diseases. Among the adult women gynaecological complaints and deficiency diseases were common.

The mean anthropometric measurements of the Onge adult males as compared to the rural Indians (NNMB, 1974-79) by NIN, (1989) indicated that they are shorter, their average body weights are also lower in all the age groups except for 20-29 year males and 40-49 year females and their mean Body Mass Index (BMI) values are higher. None of the pre-school children exhibited signs of PEM. Conjunctivital xerosis is common among Onges due to vitamin A deficiency and Glositis, the sign of vitamin B-complex deficiency, and goiter due to iodine deficiency are very common in Onge population.

Basu (1989) reported that the studies carried out by NIHFW among the Gonds (Muria and Madia), Bhattras and Halba tribal groups of Bastar district, Madhya Pradesh which showed the following trends:

a) The average protein calorie intake was found to be much less in the Gond children as compared to Bhattra and Halba child.

b) Higher frequencies of Bitot's spot, angular stomatitis and mottling of teeth were found among the Gond children as compared to the Bhattara and Halba children.

c) Muscular wasting was noticed to be higher among the Gond children as compared to Bhattara children.

Moitra and Choudhuri (1991) conducted a diet survey on August 1986 and July 1987 to investigate the various food ingredients consumed by two tribes Santal and Pahariyas residing in the villages of Rajmahal Hills, Bihar. Agriculture and forest products were the principal sources of income and food. Only about 12.6% of the Pahariyas and 28.2% Santals could afford regular meals everyday for the whole year. Maize, rice, dry jawar powder and ghangara
were the staple foods of those tribes. Pulse and milk found no place in the diet of the Pahariyas. 7.2% Santal ate fish or meat regularly. Both the tribes regularly consumed toddy and locally distilled wines. The amount of cereals, roots and tubers and toddy consumed by the Pahariyas was greater than that of Santals. These tribes consumed similar amount of leafy vegetables. Slightly, higher qualities of non-leafy vegetables were consumed by Santal (4.4%) than Pahariyas (2.03% to 3.6%). Mean body weight, height, chest circumference, arm circumference and skin fold thickness of the Pahariyas were significantly lower than those of Santals.

According to Murugesan and Ananthalakshmi (1991), Paliyars tribe in the Panni Kadu panchayat of the Kodai Kanal Taluk of Tamil Nadu state was found to be illiterates and economically poor. Their diet was peculiar with inclusion of unconventional plant foods, which were available in seasons. Nutrient analysis of the selected unconventional foods like roots and tubers and some seeds like bamboo and popped amaranth revealed that they were nutritionally recommendable by their mineral contents and also by their medical values.

The nutrition and health problems faced by Kannikar tribal women of Trivandram district, Kerala in normal and physiological conditions like pregnancy and lactation were studied by Prema and Thomas (1992). They observed that average calorie consumption was found to be below the recommended level for the normal, pregnant as well as lactating women. Consumption of calcium (in the form of tapioca and fish) was noticed to be highest in normal women whereas it was least in the lactating women.

Bhattacharya et al (1994) observed that the Onges are in adverse nutritional situation so far as dietary intake is concerned. The situation is further aggravated due to prevalence of high degree to intestinal parasites. The arterial pressure shows a trend towards hypertension but hardly causing any outward manifestation. Similarly, a very few cases of nutritional disorder like
angular stomatitis and night blindness are reported. Though clinically the population in general has low concentration of haemoglobin in their blood and 60% of the females are suffering from chronic anaemia but hardly this has resulted any pathological imbalance. Inadequacy of food intake has made impact on some of anthropometric characters as well as their indices like body weight, weight-height index, skin-fold thickness and pignet index. Seasonal variation in dietary intake does not show any significant reflex on the physical status of the studied population.

The Dhebar Commision Report (1961) reported that a tribal women occupies an important place in the socio-economic structure of their society. The report mentioned that the tribal women is not drudge or best of burden, they are found to be exercising a relatively free and firm hand in all aspects related to their social life unlike in non-tribal societies.

Singh, et.al. (1988) and Chauhan (1990) conducted on the status of women relating to their participation in management, their access to employment, food, health, etc. but these issues have not been properly focused in relation to the tribal women.

Kar (1986, 1990) observed that socio-economic factors, socio-cultural variants like nutritional practices (food habits) interrelated with socio-biological norms such as mating pattern, professional marital alliances, age at marriage etc, have tremendous impact on the fertility, morbidity and mortality pattern. Sahu (1986) established the same findings in the case of tribals of India.

Nestle et.al. (1992) observed that the nutritional status of a population of a region of a country reflects by and large economic development of that region of the country, hence such studies are very important particularly among the tribal folks who are mostly economically very backward.
According to Ali (1994) and Khongsdier (1995) generally the overall health and nutritional status of a tribal population are found to be lower than that of any non-tribal population. The wide spread poverty, illiteracy, malnutrition, ignorance of causes of disease, absence of proper sanitary condition, lack of health services or inability to seek and use them have been traced out in several studies.

The study on NIN, (1996) established that the nutritional status of the tribal groups seems to be influenced by their habitat and socio-economic conditions. The Augamis of Nagaland, the Thangkuls of Midnapur and Nicobarese of Car-Nicobar were nutritionally better; in tune with the natural resources of the habitat, level of socio-economic development and the availability and utilization of health infrastructure. The nutritional status of tribals like Konyaks, Marrings was unsatisfactory due to poor socio-economic conditions, inadequate health facilities and low literacy rate.

Roy (2000) assessed the nutritional status of the Santal community of Hoogly District in West Bengal. The researcher found that nutritional status of any community is the primary concern of the population studies, which ultimately helps in making the national policy. The reviews of the studies revealed the paucity of adult nutritional studies and the existing anthropometric method too complicated in several ways for most of the untrained personnel.

Basu (2000) observed that the widespread poverty, illiteracy, malnutrition, absence of safe drinking water and sanitary living conditions, poor maternal and child health services and ineffective coverage of national health and nutritional services have been traced out in several studies as possible contributing factors to dismal health conditions prevailing among the tribal population in India. In this article, the author focused on certain interacting factors like the infant mortality rate, life expectancy, genetic disorders, sexually transmitted diseases, nutritional status, forest ecology, child health and health care practices which are generally responsible for determining the health status and health behaviour of tribal communities.
Nagda (2004) found the position of literacy among tribal of Rajasthan was extremely poor, and more so in the case of female literacy. Most of tribal used their children for ancillary services, child laborers was common in the tribes. The tribal maintained sufficient space between births of two children. The infant and child mortality was higher in the tribes. The major causes of infant and child mortality in tribes were acute respiratory infections, diarrhoea and anaemia. Tribal practices different type of diagnosis and treatments during illness of person. The interference of supernatural agency is particularly strong in context of health and disease. The dependency on super naturals is responsible for the non-acceptance of modern medicine. The decision about the nature of treatment taken at the community level because of traditional health care system and treatment are based on their deep observation and understanding of nature. More than half of tribal mothers were not accepted antenatal care during their pregnancy because; it is not necessary and customary. About 86 percent deliveries performed at their home and three fourth of deliveries conducted by untrained Dais and other untrained persons. Few numbers of mothers started breast-feeding within one hour of birth and 74 percent of the mothers squeezed first milk from breast. The complete immunization of children was only 10.3 percent among the tribes. Majority of women had BMI below 18.5, indicating higher nutritional deficiency among tribal women. More than half of women and three fourth of children were suffering from anaemia. About 42 percent of tribal women suffered from one of the symptoms of reproductive tract infections. The health conditions in tribal present an alarming situation. At the time of delivery, prefer to cut the naval cord with a bamboo strip because it is safer from infections. The supplementary food is given to child after 5-6 months. The operation of laparoscopy and vasectomy was popularly termed Nasbandi. Tribal have deep knowledge about indigenous methods of birth control. They used several types of forest products and Jadibuties (Herbals) for controlling the birth as well as removing the sterility. Tribal are economically hand to mouth and no provision of free medicine and treatment except some diseases like malaria, polio, diarrhea, T.B. etc.
Agarwal (1967) found that among 45 ever-married Onge women of Andaman Islands, mean number of children was 1.64 and the mean number of children per women was 1.13. Infant mortality was very high as revealed from the reproductive index. According to the information of the NIN (1971) it has been reported that the tribal women’s health is at a risk during their reproductive years. Around 68% of pregnant and lactating mother suffer from anaemia. The maternal mortality rate is reported to be around 2 per 100 live births. Kumar and Mitra (1975) observed high infant mortality and fertility among 199 Tharu tribal women of Nainital. Despite the availability of modern facilities of treatments, Tharus had their own beliefs and concepts of diseases. Bose et al. (2006) reported from own study of Koras, scheduled tribes of Midnapur district, West Bengal that the crude birth rate and total fertility rate to be 4.81 per 1000 population and 4.42 per 1000 Kora women respectively. These values are relatively higher than the national figures of these values were in agreement with most of the tribal groups in India.

Sharma and Khan (1990) observed that the average fertility rate among Kharwas of Sarguja district, Madhya Pradesh was 4.85. The highest reproductive wastage (9.67%) was observed in the age group of 40-44 years and the pre-reproductive mortality was highest (6.84%) among mothers in age group 35-39 years.

Ray and Roth (1991) studied the fertility pattern of Juangs of Orissa. It was observed that the marital age specific fertility rate was highest (0.336%) among mothers in the 20-24-year age group and the 45-49 year age group. The total marital age specific fertility rate was 1.157 among the Jaung mothers. It was also observed that the index of overall fertility and the index of marital fertility among the juanges were 0.49 and 0.50 respectively.

According to Vidyarthi and Rai (1977) the age at which the girl was given in marriage depends on social values. Among the tribes, virginity was not very much valued. Many of the tribal societies like pre-marital sex relations,
which were considered as training in the art of love and sex and often ended in marriage. The study of demographic and health determinants of infant deaths by Gurumurthy et al. (1990) among the Sugali tribal group in the Kalyanadurgam and Belugappa blocks of Anantapur district of Andhra Pradesh pointed out that out of 348 infant deaths 45.4% were neonatal and 54.6% were post neonatal. About 25% infant deaths occurred due to maternal factors such as prematurity, birth injury, multiple birth weight, birth asphyxia and so on.

According to Basu (1990) the sex ratio of scheduled tribe in India was found to be near even in Arunachal Pradesh (998), Meghalaya (997) and Kerala (996). While conducting health related studies among the individual tribal population groups the sex ratio was found to exhibit a variable picture. Kutia, Kondhs, a primitive tribal group of Phulbani district, Orissa, had a lower sex ratio of 920 females per thousand males as compared to the scheduled tribe of India (972).

The study of Basu (1993) provided a clear picture of the health status of tribal women in relation to sex ratio, age at marriage, fertility, mortality, life expectancy, nutritional status, maternal and child health care practices. Sexually transmitted diseases, genetic disorders etc. further more the health status of tribal women is found to be lower than that of Indian women have been identified and a plan of action has been suggested for improving their health.

Maitil et al. (2005) observed the health care and health condition among the tribal women in the state of Jharkhand which focused that the non-tribal women were better off than the tribal women in terms of standard of living, education and other socio-demographic indicators.

Swain et al. (1990) found that Syphilis (10%) in Desia Kondhs (reactive in dilution more) whereas it was not diagnosed among the primitive Kutia Kondh tribal group. The presence of sexually transmitted diseases was also reported from Andamanese tribal groups of Madhya Pradesh, Rajasthan, Mysore, Laccadive and Minicoy islands.
Basu et al. (1993) observed that sexually transmitted diseases were most prevalent in tribal areas. These infections were often untreated as these were difficult to diagnose and would even lead to infertility. Syphilis was found to be positive in 17.12% cases of polyandrous Jaunsaris of Chakrata, Dehradun. Out of 17%, 9.92% was found among the Santals of Mayurbhanj district, Orissa, 8.90% cases (relatively in dilution of 1.8 or more) of VDRL were observed, out of which 4.99% were females and 3.91% were males. The prevalence of STD was also reported to be high in the polyandrous Toda tribal group of Nilgiri Hills, while conducting morbidity study among the Kondha tribe of Phulbani district, Orissa.

According to Choudhuri (1990) health and treatments are closely related with the environment particularly in the forest ecology. Many tribal groups use different parts of a plant only for the treatment of diseases but also for population control as well.

According to Hazra (1994), the overall health status of the tribal community is the outcome of several interacting factors e.g. a) effects of environment in which the tribes inhabit, b) behavioural pattern and life styles of the tribes, c) health care delivery service, d) hereditary and genetic determinants. All these sub-systems make up the totality of the health status of the tribes. Among most of the tribes, gastro-intestinal disorders particularly dysentery and parasitic infestations are very common leading to marked morbidity and malnutrition. Malnutrition among women and children due to this problem is common even among tribes with adequate nutrient intake.

Kar (1993) worked with the salient features of health cultures prevalent among the tribal groups of North-East India with special reference to the Mishings of Assam and the Noctes of Arunachal Pradesh. Discussions were centered on the living conditions, personal hygiene, sanitation, economic pursuits, morbidity, concepts of health, disease and treatment that prevail among the people. Though the traditional outlook, customs, rituals, beliefs,
habits and concepts of aetiology as well as diagnosis and treatment of disease are changing fast under the impact of modernization. The traditional health behaviors of the people not only dominate the modern ones, but also very often hinder the acceptance of the latter. Disease are behind to be caused by nature or by some infection are differentially treated or by herbal remedies, ritual performances as well as modern medicines. Thus, it seems the ethno medical systems of the people are an amalgamation of both tribal and non-tribal customs, and practices.

Kar (1993) observed that the reproductive health behaviour of the Nocte women is intimately related to their value system and cultural tradition. Cultural values and practices have a deep influence on health behavior in general and reproductive health in particular.

Dutta et al. (1997) studied about distribution of ABO and Rh blood group in 206 Lodha subjects living in the Midnapore district of West Bengal. It has been observed that incidence of blood-group A amongst Lodhas indicates that they might belong to the Proto-Australoid group anthropologically.

Parhi (1994) observed in the Santal mothers of Mayurbhanj, Orissa that the child is not breast fed about two days thinking that the milk is poisonous and concentrated. Instead the child is fed a honey-water mix as its food. But after two days the tribes encourage breast-feeding till next issue or after three to four years of birth. He also observed in the same study that the tribal mothers have better opportunities and greater exposure to indigenous child care practices over conventional methods.

The study was carried out by Jain and Agrawal (2005) in two villages namely Madri and Jamun of Jhadol panchayat samiti in Udaipur district of southern Rajasthan which focused on perception of illness and health ideology among Bhils. The researchers described multi- cause for a single illness. Tribes believe that most of the diseases are caused by supernatural powers. Their mode of treatment includes both indigenous and allopathic health care system.
Raj Pramukh (2006) opined that Indigenous knowledge research is a recent trend in the sociological and anthropological domains. In fact, the pioneers in documenting indigenous knowledge systems all over the world, especially among the less advanced, disadvantaged tribal and rural masses were none other than the Anthropologists. In the area of health and disease too, many anthropologists have undertaken documentation of health-related issues.

Rao (2006) studied with the persistent traditional practices associated with puberty, pregnancy and childbirth among the tribal populations of the three north coastal districts of Andhra Pradesh viz. Srikakulam, Vizianagaram and Visakhapatnam. Observation of pollution associated with some vital events among the tribal populations is also related to health. The traditional practices of tribals associated with puberty, pregnancy and childbirth have some similarity with the practices of the non-tribals especially in rural areas. All these practices signify their deep-rooted beliefs in the supernatural spirits. In this context, the role of traditional medicine-man (Guravagadu) is also prominent.

Basu and Kshatriya (1989) suggested that common beliefs, customs, and practices connected with health and disease have been found to be intimately related to the treatment of disease. It is necessary to make a holistic view of all the cultural dimensions of a community. In most of the tribal communities, there is a wealth of folklore related to health. Documentation of this folklore available in different socio-cultural system may be very rewarding and could provide a model for appropriate health and sanitary practices in a given eco-system. Maternal and childcare is an important aspects of health seeking behaviour, which are largely neglected among the tribal groups.

Nagda (1992) observed that the Bhopa or Priest and traditional Healers occupy prominent place in the treatment of diseases. If the reason of illness is identified as evil-eye, sorcery or witchcraft, the tribals always would call their Bhopa instead of consulting a doctor, as they strongly feel that the doctor are quite helpless against such evil forces which can only be counteracted by Bhopa
Medhi (2004) studied on the Nahs tribe, who are live in Taksing Circle of Upper Subansiri district, a remotest area of Arunachal Pradesh. The people live here principally with their traditional health care practices under the given ecological condition. Traditional concepts of health continues; at the same time they have grabbed new system without offering conspicuous resistance.

Bhasin (2005) has been made an attempt in his research to describe the ways in which a common Ladakhi tribe thinks about medicine and how these perceptions effect the utilization of alternative therapy systems. He examined the alternative resources and treatments utilized by various population groups in Ladakh. In the Ladakhi context components of medical pluralism are allopathy or bio-medicine, shamanism (Locally known as Lhawaiism), lamaism, and scholarly amchi medicine. Among Ladakhis, choice of therapy depends on illness specific patterns of resort.

B. I) Socio-Economic

Desai et al. (1970) and Cervanted et al. (1981) have noted a negative association between age and weight for age. But Gwatkin et al. (1980) suggested that age, birth order, and family support were not significantly associated with weight and for age it has found significant association between birth order and nutritional status. Mc Leod (1985) also suggested the same thing in his study. In contrast, some investigators

Life expectancy varies by race, but the difference decreases with age. Manton (1991), suggested that black persons who survive to the oldest ages may be healthier than white persons and have lower mortality rates. Other research of Preston (1996) showed that age misreporting may have artificially increased life expectancy for black persons, particularly when birth certificates were not available.

The study of Landsberger (1981) designed to determine differences in health between sexes of white and non-white adolescent. The findings of their
study were that the health of white adolescent females was somewhat poorer than that of white males. The health of non-white females was poorer than the other three sex-race groups.

Verbrugge (1982) observed that females generally show a higher incidence of acute conditions, higher prevalence of minor chronic conditions, more short term restricted activity, and more use of health services and medicines. By contrast, male have higher prevalence rates for life threatening chronic conditions, higher incidence of injuries, more long-term disability, and after about age 50, higher rates of hospitalization. These sex differences appear at all ages, except for early childhood when boys have a worse health profile than girls. Women are more frequently ill than men, but with relatively mild problems. By contrast, men feel less often, but their illness and injuries are more serious. These morbidity differences help to explain sex differentials in health behavior in frequent symptoms lead to more restricted activity, physician and dentist visits, and drug use for women; severe symptoms lead to more permanent limitations and hospitalization for men. Statistics show that women ultimately have lower mortality rates than men despite women’s more frequent morbidity and possibly because of more care for their illness and injuries. The apparent contradict between sex differences in morbidity and mortality (females are sick but males die sooner) is explored.


Hochschild (1989) observed that as women’s greater time investment in house work and child care are related to poorer self-reported health. Men’s failure to share housework means that female partners often have less time to devote to health including exercise and physical activity. Sabo and Synder
(1993), Vlassof and Bonilla (1994) also suggested that, in developing nations, women's growing involvement in the informal and formal economic sector is associated with elevated risk for morbidity and once becoming sick, women often have less opportunity to rest and recover.

According to Rodin and Ickovics, (1990) and Rahman et.al. (1994) patterns of health and illness in women and men show marked differences. Most obviously, women as a group tend to have longer life expectancy than men in the same socio-economic circumstances as themselves. Yet despite their greater longevity women in most communities report more illness and distress than men.

Rathgeber and Vlassof (1993) observed that a gender approach to disease examines both the differential impact on women and men and also the social, cultural and economic contexts within which they live and work. Courtenay (1998) also supported the same view.

The paper of Don Sabo (1999) on “Understanding Men’s Health: A relation and gender sensitive approach” discussed men’s health within a critical feminist framework for understanding gender relations. Certain social constructions of masculinity are said to elevate men’s risk for morbidity and mortality. Because gender relations are reciprocal in various institutional settings, it is argued that the gendering of men’s health behaviours can also influence women’s health status.

The research of Baron-Epel and Kaplan (2001) reported from their study that the respondents between 65-73 and less than 12 years reported better health when they were asked to compare their health to people of their age and sex. Excellent agreement between the questions was reported in those aged 55-64 with no diseases.

Lee and Sult (2006) studied that health differs systematically by gender have returned inconclusive results, with some suggesting that women’s health
is worse than men’s and other suggesting that there are no consistent differences. The main findings were- the health status of women was worse than that of men in terms of numbers of diseases, those aged 60 and older, self rated general health. The main reason that women aged 60 and older are more affected by disability than men, appears to be that the female population is older and mere likely to be unmarried, socio-economic differences also contribute to the gender gap. The effect of socio-economic status was generally weaker among the older age group (60 and older) than among the younger sample (30-59). Education and to a lesser extent occupation, are the major determinants of women’s health outcomes, suggesting that education bolsters women’s positions in society and in the family. The husband’s socio-economic status and education appeared to have little or no independent effect on women’s health, although family income had consistently strong effects.

Mosena and Stoeckel (1972) observed a positive impact of mean desired family size with landholding while analyzing data from 1600 currently married women from Bangladesh. A study carried out by Stoeckel and Chowdhury (1973) showed that the percentage of currently married women using family planning was negatively related to landholding.

Steckel and Chowdhury (1980) showed the religious differences in family planning acceptance among different land holding groups. While among Hindus the current use of contraception increase with the land holding size, among Muslims it shows a negative relationship. The knowledge and ever use of contraception further confirms a negative association between family planning methods and land ownership among Muslim. However, among Hindus the knowledge ever uses of contraception show a curve linear relationship.

Using a sample of Indian rural households, Rosensweig (1986) found that landownership may affect demand for quality health care directly as it may typify attitudes and values of modernity.
The studies carried out by Ramanujam (1988) examined the relationship between the size of landholding and infant and child mortality. These studies showed a negative association between these two variables.

A survey was carried out by Rodgers et al. (1989) in 1981-83 in the plains of rural Bihar, a region which was densely populated and was also rich in agricultural potential. The data was collected from 385 households in 12 villages. This interestingly showed a 'U' shaped relationship with the landless and highest land owning groups displaying a higher number of live births than other groups. The finding came in sharp contrast to the findings of other studies. The knowledge and use of family planning, on the other hand seems to have a rough positive association with land holding.

Thompson et al. (2001) reported the impact of family structure (i.e. single mother vs. two parent families) on the metabolic control of children with diabetes, with emphasis on the relationship between parental status and socio-demographic and psychological state.

Kenneth (1991) examined the effect of religion on health status and reported that respondents of all ages with a more conservative religious affiliation manifested poorer health than did those with a more liberal affiliation. However, higher levels of religious practice were positively associated with better health, regardless of age. The results showed that religion might have both positive and negative effects on health.

A study examined by Hughes (2000) on the effect of "religious struggle", (defined by such things as being angry at God or feeling punished by God) was predictive of poorer physical recovery and higher mortality.

Scientific studies of Tully et al. (2006) over the last four decades have examined the role of both public and private religious expression on health and longevity. The studies have shown that the practice of religious activity
improves health and increases longevity. The effect is seen even when other social/psychological differences are taken into account.

Joung et al. (1995) found that the educational level is an important confounder of the relationship between health care utilization and marital status. In addition differences in health status to a considerable extent explain the higher utilization of health services of widowed and divorced people, but not the lower utilization of the never married. Health care utilization by marital status, like- the divorced were more frequently hospitalized than married people. So, there are differences in health care utilization by marital status.

The data from researcher Winkleby (1997) of the three community based intervention programmes (Stanford Five-City project, Pawtucket Heart Health program, Minnesota Heart Health program) revealed that men and women with lower education will likely to reduce their risk factor levels as men and women with higher education.

Richards et al. (1998) observed that educational attainment is associated with higher life expectancy. The life expectancy of high school graduates at age 65 is approximately one year longer than the life expectancy at that age for persons who did not graduate from high school.

Education, health care, family planning and employment all affect family size. Demographic and Health Surveys (1991-1999) showed that women who have completed primary school have fewer children than those with no education. Education is key because educated women are more likely to know what social, community, and health services, including family planning are available and to have the confidence to use them.

Johansson (1999) found that, education was associated with indicators of a healthy diet.
The neonatal mortality pattern clearly indicated that the landed groups (cultivators) have lower mortality observed from Western India in a study conducted by Gondotra and Narayan (1988) in 6674 households of selected 134 villages from 9 districts of Gujarat. This study noted that socio-economic status had a negative relationship with both neonatal and postnatal mortality.

According to Bruce (1989), Jacobson (1993) and Dreze & Sen (1995) economic constraints and poverty limit individuals' well being in terms of nutrition, disease, health seeking, and ability to pay for health care. Within poor households, women and children are often marginalized in terms of health seeking, nutrition and education. In addition, other researchers Bruce & Dwyer (1989), Guyer (1988), Mencher (1989), Thomas (1990), Blumberg (1991) and Desai & Jain (1992) suggested that women, as mothers and caretakers, bear a greater burden of responsibility in meeting the health, nutritional and social needs of their families in many parts of the developing world.

Marmot et al. (1991) suggested that the relationship between socio-economic status and health is best characterized as a linear gradient of risk with even those in relatively high socio-economic groups having better health than those just below them in the social hierarchy. Many studies however, have indicated that the relationship of socio-economic position to health, especially when indexed by income is monotonic, but not linear.

Levin (1994) found those women’s unearned income proxies for bargaining has a positive effect on the demand for maternal care, obstetric and prenatal, in urban areas of Malaysia. Few studies within the economics literature have explored the effects of women’s income on their demand for health care or fertility. Thomas and Chen (1994) also found the disaggregating male and female unearned income as a proxy for bargaining power have mostly concentrated on child nutrition, morbidity and anthropometric measures.
Health and life style survey (a national sample survey of adults in England, Wales and Scotland, 1984-85) conducted by Krieger et.al. (1997) demonstrated that indices or morbidity are approximately linearly related to the logarithm of income, in all except very high and low incomes. They found that 80% of the income distribution (that is from 10th to the 90th percentiles) a doubling of income is associated with a similar positive effect on health.

Kaplan et.al. (1996), Kawachi et.al. (1997), and Judge et.al. (1998) suggested the relationship between income inequality and population health. Though still contested, the findings suggest that the more unequal a society, the worse its achievements in (aggregate) health.

Mc Donough et.al. (1997) and Lantz et.al. (1998) suggested that income is perhaps the strongest and most robust predictor of health because to some degree the impact of other socio economic status (SES) variables are mediated through it.

The findings of Liao et.al. (2001-2002) the REACH (The Racial and Ethnic Approach to Community Health) 2010 Risk Factor Survey revealed that for the majority of health socio-economic (SES) indicators, minority communities do not fare as well as the general population of metropolitan area, state or the nation as a whole. SES as measured by education level and household income was substantially lower among minority communities. Minorities also had worse self-rated general health and a higher cost barrier to health care, particularly in Hispanic Communities.

According to Scott (2002), the relationship between socio-economic status and health outcomes is one of the most persistent themes in the epidemiological literature. The strong and growing evidence that higher social and economic status, and small gaps in income equality are associated with better health has led most researchers to conclude that these factors are fundamental determinants of health.
According to Lessard (2002), no amount of money or reform within the health care system will effectively reduce inequalities in health status until geographically based income and social disparities are addressed.

Goodman (2003) suggested that family income and education level affect depression, obesity risks. Teenagers who grow up in low-income families or have parents with low education levels face much higher risks of depression and obesity than others. New research showed that about one third of depression and obesity among American teenagers can be attributed to these factors.

Swedin (1996) suggested that overall family health is more likely to issue when spouse adopt a partnership model for negotiating the combined demands of child care and occupational involvement. His research showed that men often do not have a clear view of what role to play in relation to pregnancy, childbirth and child care. Nonetheless policies calling for “shared parenthood”, “father training’ or “paid parental leave” appear to male sense with regard to both women’s and men’s health.

B. II) Socio-Psychology

Jelliffe, D. and Jelliffe, E. (1978) suggested that colostrums is the infant’s first immunization than natural milk. The above-mentioned researcher and Bardwani et.al. (1991) also thought that there is lack of knowledge about the great importance of the mother’s first milk (colostrum) regarding nutrition and health point of view due to its high quality proteins, fat-soluble vitamins and anti-infective.

According to Singh, et.al. (2004), the colostrum can prevent 55% deaths due to diarrhoea and pneumonia. Their study was based on the knowledge of feeding practices of colostrum. The feeding of colostrums is inversely proportional to joint family, low income, low status, and lack of education etc.
Sakmaki, et al. (2005) examined the nutritional knowledge and food habits of Chinese University students and compared them with those of other Asian population. A self reported questionnaire was administered to 540 students, ranging in age from 19-24 years. As a result they recorded the distribution of BMI among Chinese students and found a low prevalence of obesity. 80.5% of students had a normal BMI and 16.6% of students were underweight. Habits involving regular eating patterns and vegetable intake were reported and represent practices that ought to be encouraged. Although 85.6% of students are aware of the concept of nutritionally balanced food, only 51% of students showed a desire to learn about healthy diets. The results also showed that the majority of students regularly eat three times per day.

Prakash and Malik (1990) showed that high attitude bode had higher fertility than the low altitude Bods. They also had higher mean number of children (4.11 per mother) as compared to the low attitude bods (3.63 per mother). The attitudinal differences in fertility have been explained in terms of socio-cultural factors such as education, awareness, and urban contact, advancement in medical facilities, which were higher at low attitude.

Ubaidur (2003) found that strategic involvement of parents is critical to building a supportive environment for adolescent reproductive health programs. He also investigated parents’ attitude and knowledge about adolescent reproductive health issues in Bangladesh. In his study data was collected from 1578 parents in urban areas. Although two-third of parents were practicing family planning methods, their knowledge about STIs was quite low, only one-third parents knew about the STDs and ways to protect themselves. Approximately 28% parents indicated that they had discussed reproductive and sexual health issues with their children. However, over 65% parents expressed their lack of knowledge about adolescent reproductive health issues and wanted to know more about the subject. Majority of the parents are supportive of providing reproductive health (RH) information to adolescents. Furthermore, parents suggested that sexually active adolescents should use condom to
prevent unwanted pregnancy and sexually transmitted infections. In addition, parents support later age at marriage and delayed child bearing. Majority of the parents were in favor of providing RH education in school. Most of the parents knew about STDs but had a poor grasp of transmission routes. Parents did not know where to go for reproductive health care.

Norwegian nutrition authorities have recommended that women consumed a folic acid supplement before and early in pregnancy to prevent neural tube defects. The researchers Daltveit, et.al. (2004) wished to establish Norwegian data on knowledge, use, and attitudes to folic acid supplement and dietary supplements before and after implementing national information campaigns on folate and pregnancy. Knowledge and use of folate among Norwegian women increased from 1998-2000.

Laurie, et.al. (2004) suggested that partner discussion does not necessarily mean an increase in knowledge of a partner’s contraceptive attitudes.

Brook and Kishon (1993) interviewed 116 healthy high school pupils and found correlation between the level of knowledge and attitude, with an increased level of knowledge implying a more tolerant attitude. A correlation was also found between tolerant attitudes and increasing age, increasing parental education and the pupils’ behavior marks. The recommendation of the survey was to improve the instruction regarding bronchial asthmatic diseases with classes taught by physicians or nurses. By increasing the knowledge of the healthy pupils at school, their attitudes will be more tolerant and positive toward asthmatic pupils.

Tran, et.al. (2003) observed in mother’s knowledge, attitude, and practice (KAP) study before and after health education of dengue haemographic fever (DHF) of four communes in Southern Viet Nam. The researcher’s study showed that health education had made a strong impact on the mothers’ KAP of DHF which can be implemented in other communities as part of the national programme for dengue control.
Singh and Verma (2004) studied the profile of rural women and health and nutrition knowledge of rural women attending IDDS (Integrated Child Development Service) programme. The findings of the study revealed that the majority of the respondents were illiterate. The overall knowledge regarding health and nutrition of rural women was very low. They did not realize the importance of health and nutrition messages.

Amanda et al. (1999) carried on a study to examine smoking-related knowledge and practices of hospital-based nurses. The specific aims were: to determine the prevalence of self-reported smoking and the characteristics of hospital nurses who smoke; to describe nurses’ knowledge of the health risks of smoking strategies which aid quitting; and to describe their attitudes of smoking and quitting and providing smoking cessation care. A self-completed questionnaire measured attitudes about smoking, and quitting.

Amid. I. Ismail (2005) studied on knowledge, attitude, and practice on oral cancer screening among primary care providers at Federally Qualified Healthcare Centers (FQHC) in Michigan. A mail survey was conducted for 303 PCPs who worked in FQHC in Michigan. The findings of the research indicated majority of PCPs had positive attitude about oral cancer and half of the respondents would like to participate in a network to screen for oral cancer.

Kripa, et al. (2005) studied about the knowledge, attitude and practices related to occupational health problems among salt workers working in the dessert of Rajasthan, India, and observed that there was a huge gap between their knowledge and practice with protective devices, though they suggested improvements in protective devices to increase their acceptability.

Mead (1943) remarked that anthropology is useful in providing information as to how behavior may be changed, but she added that cultural anthropologists must be aware of the ramifications of change in other areas of life. Lewin, K (1943) showed that for the modification of food habits, it is important to know the ‘gatekeepers’- the persons responsible for decision-making at the household level.
B. III) Communication

According to National Cancer Institute (1989), Piotrow et al. (1997) and Jackson (1998) health communication encompasses the study and use of communication strategies to inform and influence individual and community decisions that enhance health. It links the domains of communication and health and is increasingly recognized as a necessary element of efforts to improve personal and public health.

Freimuth et al. (1989), Atkin et al. (1990), Ray et al. (1990), Backer et al. (1992), Harris et al. (1995) and Northouse et al. (1998) opined that health communication can contribute to all aspects of disease prevention and health promotion and is relevant in a number of contexts, including (1) health professional-patient relations, (2) individuals' exposure to, search for, and use of health information, (3) individuals' adherence to clinical recommendations and regimens, (4) the construction of public health messages and campaigns, (5) the dissemination of individual and population health risk information, that is, risk communication, (6) images of health in the mass media and the culture at large, (7) the education of consumers about how to gain access to the public health and health care systems, and (8) the development of telehealth applications.

National Cancer Institute (1989) suggested for individuals, effective health communication can help raise awareness of health risks and solutions, provide the motivation and skills needed to reduce these risks, help them find support from other people in similar situations, and affect or reinforce attitudes.

Research of Freimuth et al. (1990) indicated that even after targeted health communication interventions, low-education and low-income groups remain less knowledgeable and less likely to change behavior than higher education and income groups, which creates a knowledge gap and leaves some people chronically uninformed. DeFoe and Breed (1991) have written: "The media like health material as subjects, and the field of public health has a lot of material to fill the 'newshole'." The two researchers documented several
empirical studies, which underscore this conclusion, quoting one authority who estimated that almost 25% of all articles in daily newspapers have at least some relation to health. This digest addresses the question of health information and reporting in the mass media, focusing on its accuracy and on some researchers' ideas for improving the quality of the health information that is disseminated.

According to Aix et.al. (1992) radio--the most popular medium with large segments of young adults--would also appear to be an efficacious purveyor of health information. The radio program is prepared by a writer-reader and always uses plain, easy-to-understand language.

According to Maibach (1995) another area is the dissemination of health messages through public education campaigns that seek to change the social climate to encourage healthy behaviors, create awareness, change attitudes, and motivate individuals to adopt recommended behaviors.

According to National Cancer Institute (1995), Doak (1996) closing the gap in health literacy is an issue of fundamental fairness and equity and is essential to reduce health disparities. Public and private efforts need to occur in two areas: the development of appropriate written materials and improvement in skills of those persons with limited literacy. Agency for Health Care Policy and Research (1997) noted that the convergence of media (computers, telephones, television, radio, video, print, and audio) and the emergence of the Internet create a nearly ubiquitous networked communication infrastructure. This infrastructure facilitates access to an increasing array of health information and health-related support services and extends the reach of health communication efforts.

Sharma and Khan (1997) and Khan et.al. (1998) rightly pointed out that the main reasons for low and non-adoption of improved agricultural technologies by the tribal farmers were the poor level of requisite knowledge may be due to indifferent communication.

Gupta et.al. (1998) studied to assess the knowledge and attitudes about dengue and practice of prevention followed by the residence of a rural area and
an urban resettlement colony of East Delhi, and interview based cross-sectional KAP study was undertaken. Audiovisual medium was the most common source of information in both the areas. The finding of the study was that the knowledge about the disease was fair to good. A high level of dengue awareness (87.3%) was observed among the respondents who can be attributed to the health education and information campaign of the audio visual media and health care personnel.

A project on 'Health Literacy' published from Institute of Medicine, America, (2004)\(^{(a)}\) defined health literacy as the degree to which individuals have the capacity to obtain, process and understand basic information and services needed to make appropriate decisions regarding their health.

Institute of Medicine, America, (2004)\(^{(b)}\) also published an article on ‘Focus on health communication: Placing public health in perspective.’ The main findings were that the fundamental social and behavioral influences offer considerable benefits to communities that actively participate during the design, implementation, and evaluation of health promotion interventions. The 21st century has offered much advancement in communication technology that may lead to a potentially better informed and presumably healthier population; however, little research has been conducted on how these new technologies are being utilized within communities. Given the dynamic nature of social and cultural diversity in the United States, public health campaign must consider the most effective communication strategies for enhancing health behaviors, beliefs, and outcomes among targeted populations. Health communication strategies for a diverse population explores the fundamental question of whether scientifically in diversity factors into health communication approaches are a valuable influence on population and their health outcomes.

Sabine Meier et al. (2007) opined that the health discussion group is a type of communication, which proved to be a useful instrument for health promotion, who is participating in the discussion. Special emphasis should be given towards decreasing barriers for participation.