CHAPTER - I

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INTRODUCTION

1.1 ABOUT THE STUDY:

Health is an important sector of development. The statement "Health is wealth" is evident in all the ages. No nation can make progress until the health of its people is taken care of.

Health development is recognised as an essential and integrated part of the national socio-economic development, and every effort is being made to see that health and health related activities are systematically planned and coordinated at all levels.

Health status is one of the important indicators of the human development. However, the issue of health is of great importance both from the point of view of the individuals and the nation as well. In most of the countries, it is the health status of the people, which determines their well-being and their socio-economic development. A great deal of attention is being paid to the investment in health, which is an important component of investment in human capital. "Good health as people know from their own experience is a crucial part of well being but spending on health can also be justified purely on economic grounds", (World Development Report, 1993).

Jawaharlal Nehru stated that health is a basic problem which forms the foundation of nations edifice and if the foundation is weak, it is likely to collapse. Speaking on health problems, he observed that the fund can be available for the big wars, but there is no reason why they should not be provided for to fight against ill-health (Gopal S. 1984).

Health and disease vary from place to place over time. It is observed that the geographical factor for example toxic chemical contamination in the ground water i.e., fluoride, is an important
contributing factor in spreading endemic diseases in the study area. Moreover, at present, the number of studies concerned with the problems of health and disease taken in a geographical context is noticeably small. In the developing countries like ours, it cannot afford to neglect the environment disease relationship. Notwithstanding, the great efforts made by World Health Organisation, many national governments, voluntary institutions, the developing countries are still severely threatened by endemic diseases. The personal observation revealed that people are still suffering from number of diseases. This situation is thwarting the physical, mental and social well-being of the people and thereby affecting the economic progress of the country, which not only creates the problems of health but also of social welfare and social justice.

In the context of developing countries, especially, the traditional or quasi-traditional societies like ours, the nature of health problem is different. In our rural areas, where 75 percent of our population resides, both physical and social environments are not congenial for the health of the people. The most striking problems in the rural areas of our country are insanitary living conditions, malnutrition and lack of safe drinking water supply all responsible for poor health (Mehta, 11984).

Water is one of the most important natural resources. This can be regarded as sub system of the system of geographical environment. The WHO estimates that about, 25 million people in developing countries die from water borne disease every year (Jain and Sharma, 1989). In India 80 per cent of the diseases are water borne. Safe water supply and sanitation have received the world wide attention and the United Nations have declared the decade 1981-91 as the "International Drinking Water Decade".

Fluoride contaminated water is a major problem which is associated with the dental fluorides and with the skeletal
damages in both children and adults with early aging. The surveys of ground water conducted by the Department of Geology of Karnataka University in 1975 and 1980 have revealed that the magnitude of fluoride contaminated water in the study area is high. The personal observation and enquiry in to the field revealed that lack of medical care facilities, the villagers suffered for quite some time, and they have to look towards medical professionals in the urban areas for getting treated for fluorosis. They are forced to go to hospital mostly situated in urban centres for specialised services of the medical practitioners.

Since India is signatory to the Alma-Ata declaration of 1978, we are committed to make accessible primary health care facilities to all our people by the year 2000 A.D. Considering the vastness of our population and geographical coverage, this by no means, is an easy task. As we know well that an overwhelming majority of India's population lives in the rural areas and this part of population has been neglected so far as health and medical care facilities are concerned. Further, there are inter-rural imbalance of services as functionally much of the available manpower is distributed in big villages. The smaller and difficult to reach villages have no facilities whatsoever (Chuttani, et al., 1973). Inspite of the fact that the major health care programmes are run by the government, the situation is far from satisfactory.

With the growth of population, the health and medical needs are expanding. In the wake of rapid changes in medical technology, the industries are being geared to cope with these expanding health and medical facilities for the people, but in the context of existing socio-cultural and economic inequality in the society, and effects of modernization of medical institutions, urban and commercial orientation of physicians and consultants, the problem has remained unsolved.
Therefore, in the present investigation, a study of interrelationships of geo-socio cultural and economic educational factors and their influence in determining the health status of the people of different sections of community is a significant area of exploration. Thus, such type of investigation will not only highlights the health problems of a community but also provides good insight into the study of rural health culture.

1.2 HEALTH AND DEVELOPMENT:

Today, health is recognised a "fundamental right" of every human being. The World Health Organization (WHO 1983) has laid down in its constitution as follows "the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinct of race, religion, political, belief, economic or social conditions". Even the constitution of India has laid down "the state shall regard the rising of the level of nutrition and standard of living of its people and improvement of public health as among its primary duties".

Thus, the health of the nation depends upon the basis of the health of the people. Health is the common theme in most cultures. Health development is defined as "the process of continuous progressive improvement of the health status of population". (WHO, 1984). Its product is rising levels of human being, marked not only by reduction in burden of disease, but also by the attainment of positive physical and mental health related to satisfactory economic functioning and social integration (WHO 1984).

The health, which is essential to socio economic development has gained increasing recognition. It was commonly thought in the 1960s that socio-economic progress was not essential for improving the health status of people in developing
countries and that substantial and rapid progress could be made through introduction of modern public health measures alone.

The period of 1937-77 witnessed considerable rethinking on this subject (WHO 1986). There was profound modification of the economic theory. It is clear that economic development alone cannot solve the major problems of poverty, hunger, malnutrition and disease. In its place 'non-economic' issues like education, productive employment, housing, equity, freedom and dignity, human welfare have emerged as major objectives in the development strategies.

**DEVELOPMENT APPROACH:**

In the developmental approach, improvement in health status is viewed primarily as a product of socio-economic development. By definition development implies improved nutrition, hygienic living and working conditions, greater awareness of health problems and wider accessibility to health care services which have a favourable effect on the health status of people. Improvement in health status as well as health care are treated as integrated components of the development process. Since health is a product of multivariate production process in which medical care is just one of the many inputs, the impact of the state intervention on health status depends on its overall socio-economic policies.

The relationship between socio-economic development and health is a complex process. In assessing the overall impact of development on the health status, the structural changes in economy and society are still critical. While some changes are favourable to health improvement and others are unfavourable. Most of the changes have adverse consequences. For instance, urbanisation makes provision of certain public services, more
economic but also leads to degeneration in environment, and creates a greater scope for spread of communicable disease.

Development is generally associated with decrease in mortality and changes in its casual structure. In poor countries, morbidity and mortality are dominated by communicable and deficiency diseases, while in the developed countries the predominant cause of death are the so-called degenerative diseases.

The economic development, increases the regularity of food supply and other items which have direct impact on the health status and also facilitates the progress of medical sciences by providing more resources for medical research (Coale and Hoover, 1983). The technical progress of public health programmes are viewed merely as intervening variables indicating between development and health.

Development offers a wide range of possibilities with different consequences for the health status. Public policy can be geared to alter the nature of the development process to enhance its favourable effects on health status of people. But the public policy confined to a narrow area of public health programmes has a limited role. Even the advocates of technological approach, concede the limitations of public health programmes in improving the health status of people.

1.3 HEALTH AND MEDICAL CARE IN INDIA:

HISTORICAL PERSPECTIVE:

Health and disease are universal phenomena of all human societies. Medicine is therefore, as old as human civilization. However, it is rapidly changing. Here, an attempt has been made to give a brief account of the origin and development of medical care.
In every human society disease, illness, injury and health co-exist. No society or individual is free from these happenings, although its nature, frequency and degree varies from man to man and from society to society.

Every society has developed its own measures according to its cultural experiences—both empirical and transcendental systems of values regarding health and disease, and also methods for coping up with them. In other words, every known society has created a pharmacopoeia and therapeutic systems, be it magico-religious, secular or scientific (Castiglioni, 1947).

Search for the cause of disease goes back to antiquity. Unwritten history is not easy to interpret, although much may be learned from the study of early man. It is reported that men with imaginative and other psychological gifts became shamans of medicinemen during the monolithic culture and were considered intermediaries to the spiritual world. Folk medicine was handed down from one generation to the other during the neolithic culture. In short, the practice of medicine in early days remained in the hands of priestly class who displayed high standard of surgical and therapeutic skills. In the pre-historical period, magic and religion played a large part in the medicine. Use of charms, medical rites, sacrifices and talismans, still prevalent in modern times, is of ancient origin.

However, Indian medicine has a long history. Its earliest concepts are set out in the sacred writings called vedas, especially in the metrical passages of the Atharvaveda, which may possibly date as far back as the 2nd millennium B.C. According to a later writers, the system of medicine called Ayurveda was practiced by a physician, named Dhanvantri from Brahma and Dhanvantari was defined as the god of medicine.
The vedas are rich in magical practices for the treatment of diseases and in charms for the expulsion of the demons traditionally supposed to cause disease. The chief conditions mentioned are fever, cough, diarrhoea, dropsy, obscesses, tumours, and skin diseases including leprosy. The herbs recommended for treatment are numerous.

Indus valley people had a highly developed and endured civilization. Indus valley public health organisation provides an indication of the extent of health consciousness among the ancient Indian people. Almost all houses had bath-rooms, latrines, water closets and carefully built wells (Banerji, 1981). Shiva was considered to be the first propounder of Ayurveda and it was practiced during their period. As one discovers by reading through the medical sections in the Rigveda and Atharvaveda (1500-800 B.C.), the mantras are in the nature of invocations and were addressed to the gods for good health and recovery from ill-health. However, during the Brahminic or Upanishad period (800-600 B.C.), the medical beliefs were mainly of medico-religious nature. The general practitioners – the Vaidyas (doctors) indulged in crude form of medical practice, and used herbs, drugs, and superstitious rules and procedures in their treatment. At the same time there were many unqualified practitioners, quacks and others who brought disrepute to the entire medical profession.

With the advent of Buddhism, the animistic period of Indian medicine ended. Buddhism brought values like healing qualities or kindness, mercy and love to the medical profession and Rahulasankirtiyan, the son of Buddha, established hospitals both for humans and animals. Later, Ashoka is reported to have developed a great hospital system throughout the country and established two centres at Taxila and Varanasi universities in medicine and surgery respectively. Licenses to practice were
given by the kings and quackery was controlled. But post-
Buddhist period (200-1000 A.D.) was virtually a blank period for
medical development in India and reactions to Buddhism brought
back and quackery again flourished, which was only one facet of
the decay in the body politic of the nation as a whole.

During the Muslim period (1000-1500 A.D.), the Unani
(Greek) system of medicine was established. They practiced and
patronised it during their period. In fact, origin of Unani-Tibbia
system of medicine can be traced back to the early Greek
medicine. The greatest Greek physician was Hippocrates (460-
370 B.C.), who is known as the "father of medicine". He studied
and classified diseases based on observation and reasoning.
Unani system of medicine was also considered nearer to the
principles of Ayurveda in dealing with health problems. But there
were some differences in techniques of diagnosis and materia-
medica. Unani hospitals were established during the time of
Akbar and Jehangir. Unani medical schools were started at
Lahore, Delhi, Agra, Lucknow and Hyderabad.

Homeopathy system of medicine propounded by Samuel
Hahnemann, came to India in the mid of 18th century. This
system could not get wide popularity in those days. But today, it
is evident that more and more people make use of homeopathic
medicines, as they believed that these have no side effects and
more cheaper and easily administrable.

After the downfall of the Mughal empire, the Britishers
brought with them their own system of medicine – Allopathy,
which was adopted as an official system of medicine in India.
The first allopathic doctor came from the west in the 16th century.
It was the Portuguese who introduced modern medicine in India
during the 15th century and established a hospital in 1498 and a
medical school started functioning in 1687 in Goa. Later, the
French and the British introduced western medicine in the east
coast and started hospitals. Medical colleges were established in 1835 at Madras, Bombay (1845), Calcutta (1835), Lahore (1960) and Lucknow (1911).

Hospitals were established in the state capitals and district headquarters. But rural areas were largely served by quacks, hakims, vaidyas, astrologers, priests, magicians, sadhus, barbers, unregistered practitioners, ayurvedic practitioners unani and naturopaths besides people indulging in different forms of charms and sacrifices. In 1920s the subsidised rural dispensaries played a great part in extending medical facilities. Licentitates of modern medicine were given subsidy to settle down in rural areas and manage the dispensaries established there. Notwithstanding these, doctors of modern medicine became scarce, these were being managed by ayurvedic or unregistered or homeopathic practitioners. In addition, medical chests and tables dispensaries have been opened for some time in rural areas (Rao, 1972).

POST-INDEPENDENCE DEVELOPMENT OF PUBLIC HEALTH MEDICAL CARE:

Health Survey and Development Committee, under the Chairmanship of Sir Joseph Bhore was established in 1943, in order to make a broad survey of the position in regard to health conditions and health organisation and make recommendations for future development. The Bhore Committee in its report in 1946, highlighted the wide gap between rural and urban health services and stressed the need to strengthen the rural health services. However, Bhore committee's report and its recommendations became the basis for most of the planning and measures adapted by the national government for the delivery of health care services in the country. In 1947, the Ministries of
Health and Medical Services were established at the centre and states.

Soon after the independence, India joined the World Health Organisation as a member state in 1949. The South East Asia Regional Office of the WHO was established in New Delhi and Indian Research Fund Association was reconstituted into Indian Council of Medical Research. The constitution of India came into force in 1950 and the raising the level of nutrition and standard of living of its people and the improvement of public health were adapted as policy measures by the national government. The Planning Commission was also established in the same year by the government of India, which drafted the First Five Year Plans. Table 1.1 shows the allocation of funds for health, family welfare, water-supply and sanitation during the five year plans.

The Community Development Programme was launched on 2\textsuperscript{nd} October 1952 for the all-round development of rural areas. In which profession of medical relief and preventive health services were made as part of the programme. The central council of health was constituted in the same year and primary health centres were also established in the blocks of villages.

The National Malaria Control Programme was started as a part of the First Five Year Plan. In 1953, The National Extension Service Programme was started in various states as a permanent organisation for rural development and a nation-wide Family Planning Programme was also launched. Central government Health Scheme, The Central Social Welfare Board, The National Water Supply and Sanitation Programme, and The National Leprosy Control Programme were started in 1954. All these programmes were mainly concerned with health needs of the people.
### TABLE 1.1

ALLOCATION FOR THE HEALTH, FAMILY WELFARE, WATER-SUPPLY AND SANITATION DURING FIVE YEAR PLANS (RS. IN CRORES)

<table>
<thead>
<tr>
<th>Period</th>
<th>Total Allocation</th>
<th>Health</th>
<th>Family Welfare</th>
<th>Water supply, and sanitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Plan (1951-56)</td>
<td>1960.0 (100)</td>
<td>65.2 (3.3)</td>
<td>0.1 (-)</td>
<td>11.0 (0.56)</td>
</tr>
<tr>
<td>II Plan (1956-61)</td>
<td>4672.0 (100)</td>
<td>140.0 (3.0)</td>
<td>5.0 (0.1)</td>
<td>74.0 (1.58)</td>
</tr>
<tr>
<td>III Plan (1961-66)</td>
<td>8576.5 (100)</td>
<td>223.9 (2.6)</td>
<td>27.0 (0.30)</td>
<td>105.7 (1.2)</td>
</tr>
<tr>
<td>Annual plan (1966-69)</td>
<td>6225.4 (100)</td>
<td>140.2 (2.1)</td>
<td>70.5 (1.1)</td>
<td>102.7 (1.6)</td>
</tr>
<tr>
<td>IV plan (1969-74)</td>
<td>15778.8 (100)</td>
<td>335.5 (2.1)</td>
<td>285.8 (1.8)</td>
<td>458.9 (2.9)</td>
</tr>
<tr>
<td>V plan (1974-79)</td>
<td>39426.2 (100)</td>
<td>780.8 (1.9)</td>
<td>497.4 (1.3)</td>
<td>1091.6 (2.8)</td>
</tr>
<tr>
<td>Annual plan (1979-80)</td>
<td>12176.5 (100)</td>
<td>223.1 (1.8)</td>
<td>116.2 (1.0)</td>
<td>387.6 (3.2)</td>
</tr>
<tr>
<td>VI plan (1980-85)</td>
<td>109645.9 (100)</td>
<td>2015.5 (1.8)</td>
<td>1429.2 (1.3)</td>
<td>3977.6 (3.6)</td>
</tr>
<tr>
<td>VII plan (1985-90)</td>
<td>218729.6 (100)</td>
<td>3688.6 (1.7)</td>
<td>3120.8 (1.4)</td>
<td>7093.1 (3.2)</td>
</tr>
<tr>
<td>Annual plan (1990-91)</td>
<td>6151.8 (100)</td>
<td>960.9 (1.6)</td>
<td>784.9 (1.3)</td>
<td>1876.8 (3.1)</td>
</tr>
<tr>
<td>Annual plan (1991-92)</td>
<td>72316.8 (100)</td>
<td>1185.5 (1.6)</td>
<td>749.0 (1.0)</td>
<td>2514.4 (3.5)</td>
</tr>
<tr>
<td>VIII Plan (1992-97)</td>
<td>798000.0 (100)</td>
<td>7575.9 (1.0)</td>
<td>6500.0 (0.8)</td>
<td>24638.0 (3.1)</td>
</tr>
</tbody>
</table>

Note: The Figures in the brackets are percentages.
During the second five year plan period, the Model Public Health Act was passed. The Central Health Education Bureau, The Demographic Training and Research Centre were established and the Immoral Traffic Act was also passed in 1956 to control immoral traffic among girls and women.

The Health Survey and Planning Committee under the Chairmanship of Dr. A.L. Mudaliar was appointed in June 1959 to undertake the reviews of the development programmes that had taken place in the field of health care after, the submission of Bhore Committee report and to make recommendations for future plan of health development and expansion of health services. A Central Expert Committee was appointed under the ICMR to study the problems of cholera and smallpox in India, which recommended measures for eradication of these diseases.

During the Third Five Year Plan, the report of the Mudaliar Committee was published and the Central Bureau of Health Intelligence was also established. In 1963, Chadha Committee was established a norm of one Basic Health worker for every 10,000 population. In the Fourth Five Year Plan (1969-74), medical education got much attention.

In the Fifth Five Year Plan (1974-79), the Government of India appointed a committee under the chairmanship of Dr. J.B. Srivastava in November 1974, to devise a curriculum of training for health assistants and suggested steps, for improving the existing medical educational processes so as to provide due emphasis on the problems particularly relevant to natural requirements. This “Group on Medical Education and support Manpower” submitted its report in April 1975. The most important recommendation of the Srivastava Committee was that primary health care should be provided within the community itself through specially trained workers, so that the health of the people is placed in the hands of the people themselves. Realising, the
basic recommendations of the committee, government of India, launched "Rural Health Scheme" in 1977, through which steps were also taken for involvement of medical colleges in the total health care of selected PHCs with the objective of reorientation of medical education to the needs of rural people.

The development of the health delivery system made its beginning in the country during the 7th five year plan. The rural areas in our country are now covered by PHCs. However, in order to improve the health care services in urban areas, the district and sub-division level hospitals have been upgraded and more teaching hospitals have been established to increase the medical manpower resources.

As on 1-1-1991, of the total number of hospitals (11254), 7286 are located in urban centres and only 3968 are in rural areas. Similarly, of the total beds (619,433), there are 524,118 beds in urban areas and 95,315 in the rural areas. Of the total number of dispensaries (27,994), as many as 15,710 are located in urban areas and 12,284 in the rural areas. Similarly, of the total beds (22,182), 9,270 are in urban areas and 12,912 in the rural areas. This disproportionately lower distribution of hospitals and dispensaries with beds in rural areas, which contain nearly 75% of population shows the deplorable state of health services in villages.

By the end of March 1991, the country had 21,641 PHCs and 130,960 sub-centres are functioning in the country. In the year 1989-90, the country had 128 medical colleges, (Includes 22 unrecognised medical colleges). In 1991, 394,068 doctors were registered with MCI. The majority of the allopathic doctors, holders of MBBS degree and above are resided in urban areas. In contrast, number of registered medical practitioners of indigenous system and homeopaths are mostly serving in rural area.
Apart from the establishment of hospitals, dispensaries, medical education and research training programmes for medical and para-medical staff, the government of India has successfully launched national programmes for the control and eradication of communicable diseases. During the Fifth Plan, under the minimum need programme the country had added 126 rural hospitals, 258 subsidiary health units and 124 mobile units, in addition to strengthening the number of PHCs and sub centres.

Notwithstanding all these efforts of the central government, the health and medical care delivery system in the rural areas continues to be unsatisfactory. We have not yet been in a position to provide basic health facilities like, safe drinking water supply, environmental sanitation and maternal and child health care to all our villages. It is observed that people have been mostly utilizing the services of indigenous medicine practitioners and homeopaths already established in the village rather than the PHCs (Bhatia, 1972). World Bank in its report mentioned that the health care system in the rural areas of the developing countries has not been able to provide services to the majority, especially children and women, who cannot avail these because of lack of transport and of the system being more oriented towards curative care rather than preventive medicare. Hence, hospital facilities shrank the PHCs and people rush towards hospitals rather than to PHCs. The reasons responsible for the above mentioned health behaviour are lack of proper services, of health workers posted at rural PHCS, insufficient and inadequate supply of medicines, lack of social acceptability of community in the existing health delivery system, because of relief with treatment and impersonal behaviour of medical and para medical staff, lack of concern for the poor.

Following the declaration of Alma-ata conference on primary health care, the Indian Council of Social Science...
Research (ICSSR) and the Indian Council of Medical Research (ICMR) jointly set up a study group. Its report "Health For All; an Alternative Strategy" was published in August 1980. The report states that for the achievement of HFA\2000, expansion of the existing system and minor reforms will not be effective without radical change is called for. A study says that a major programme for the development of health care service is necessary but not sufficient (Sathe and Sethe, 1997). It was suggested to have trained male and female community health volunteer at the village level and village health committee, the structure and functions at the sub-centre level for 5,000 population, and the CHC for every 1,00,000 population with a provision of 30 bedded hospital have been laid down. The District Health Centre will also be a part of the referral system. It was further suggested that the financial and administrative aspects of health care would be in the hands of the local community that is from village panchayat, through Block to Samiti to Zilla Parishad.

It is observed that low priority has been given to health in Five Year Plans. During VIIIth plan the total plan outlay was Rs. 7,98,000 crores, out of which only Rs. 7,575.9 crores for health plan was allotted, which come to 1.0 per cent of the total outlay. Moreover, the per capita government expenditure on health and family welfare and water supply and sanitation is Rs. 83.03 for the year 1989.90 and it may be difficult to solve all the health problems at this cost.

From the above discussion, one may conclude that in order to improve the health status of rural areas mere allocation of fund is not important but available medical man- power resources should be utilised properly for optimization of health and medical care system in our villages.
1.4 HEALTH STATUS IN INDIA:

1) DEMOGRAPHIC PROFILE:

According to 1991 census, India with a population of 846.3 million is the second most populous country in the world. The population has almost doubled after independence. The decadal population growth rate for the year 1981-91 is 23.9. But the annual growth rate of population is 2.14 per cent. At this rate the population of India is expected to cross 100 million mark by the end of the year 2000 A.D. The density of population is 274 persons per square kilometers. The sex ratio of the population (number of females per 100 males) for the year 1991 is 927. The total literacy is 52.11 per cent. The population below 15 years is 35.7 per cent for the year 1992. Whereas, the population above 60 years is 6.6 per cent for the same year. More than 46.9 per cent of the population lives below the poverty line. The annual per capital GNP (1991-92) at current prices is Rs. 7155. Thus, the demographic profile is showing unfavourable trends and placing unbearable pressure over the natural and human resources to meet basic health needs of the people particularly of lower and lower middle socio-economic groups.

2) MORTILITY PROFILE:

During the last few decades, there has been considerable improvement in the health status of the population. The general death rate which was 22.8 per thousand in 1951-61 has come down to 8.9 per thousand in 1997. The life expectancy has increased considerably since 1951 and it is estimated 60.5 year in 1993, compared to that in developed countries where it is currently between 76-82 years. The infant mortality rate has come down from 129 in 1971 to 72 per thousand live births in 1997. In developed countries like U.K., U.S.A., France and Japan it is 11.7, 8.6, 11.2, and 6.2 per thousand respectively. In 1988,
mortality in 0-4 years age group is about 33.3 per thousand as against one per thousand in developed countries. About 21 per cent of total deaths are estimated to be in the age group 0-1 year. 15 to 25 per cent of total deaths are attributed to infectious and parasitic diseases which mainly occur due to lack of basic sanitation.

3) MORBIDITY PROFILE:

The morbidity rate is one of the important indicators of health status of population group. Morbidity is dominated by communicable diseases. According to one estimate about 17.2 per cent of all deaths and about 20.8 per cent of all illness are due to communicable diseases in India. The major problems continue to be tuberculosis, filariasis, leprosy, malaria, diarrhoea diseases and malnutrition. The meals, polio, viral hepatitis, Japanese encephalitis are the main viral diseases. Among bacterial diseases, cholera has significantly declined, but other water-borne diseases like acute diarrhoeas, dysentery and enteric fever have not been abated. The country has one-third of leprosy cases in the world, estimated to be about 1.3 million. Tetanus and diptheria are not yet under control. Among parasitic diseases malaria and Kala-azar have again appeared. During 1992, 1,417 million cases of malaria and 26,757 cases of kala-azar were reported. Intestinal parasites such as ascariasis, hookworms, giardiasis and amoebiasis are widely prevalent. Sexually Transmitted Diseases are on the increase, particularly AIDS/HIV.

Nutritional deficiencies are serve among the women and children belonging to lower socio-economic strata. Iron deficiency is seen in almost 50 per cent of the children of the age of 5 years and in 30-35 per cent women during their reproductive
period of life. Vitamin A deficiency a cause of blindness and endemic goitre are among the more important nutritional problems in the country. The main reasons of all these problems in the country. The main reasons of all these problems are social in nature viz., poverty and ignorant. It may be observed that these disease worst affect rural areas.

Non-communicable diseases, like hypertension, diabetes, cancer, heart-disease, rheumatism are the problems of affluent social groups. Occupational diseases are increasing with rapid industrialisation. Health hazards due to environmental pollution, alcoholism, road accidents and allergic disorders are also increasing in the urban centres.

4) HEALTH CARE FACILITIES AND PERSONAL:

At the time of independence, there was no basic health services for a large section of population of India. However, with independence, there was a political commitment to improve health and resulted a systematic programme for the establishment of PHCs and sub centres began in 1952 in the community development areas. Over the years, a net work of PHCs and subcentres has been established. At present, PHCs form the nucleus of health services in rural areas. At the village level, a band of voluntary health workers e.g., village health guides and trained dias has been created. They are selected by the local community and trained to deliver primary health care. Secondary health care is provided by the district hospitals and newly created Community Health Centres (CHCs), which are also the main referral centres in support of primary health care. The teaching hospitals and institutions and other apex hospitals provide Tertiary health care. Both in the rural and urban areas, the private and public sectors exist side by side. A large number
of voluntary organisations are also involved in providing health care to the people.

Following the acceptance of the World Health Organisation goal of "Health For All" by the year 2000, the Ministry of Health has been formulated its National Health Policy which was approved by the parliament in 1983, resulted in the expansion of the health infrastructure for achieving the objectives of the National Health Policy. At the end of March 1992, there were 22,441 PHCs and 1,31,318 sub centres and many more are on the way to be established. However, the basic requirements for health viz., safe drinking water supply and excreta disposal facilities are lagging behind in both rural and urban areas. At present safe water is available to 80 per cent of urban and 47 per cent of the rural population and adequate sanitation facilities are available to only 30 per cent in the urban and 1 per cent of the rural population.

A major requirement in developing an adequate health infrastructure is health man-power, which must be adequate in term of quality and quantity. At present, there are 148 medical colleges, 106 nursing colleges, over 500 training schools for the training of health assistants and 47 health and family welfare training centres in the country to meet the health man-power needs. As per latest available statistics, the number of doctors of allopathic system of medicines is little over 3.94 lakhs. Similarly there is a large number of medical practitioner belonging to traditional system of medicine and homeopathy accounting for 5.35 lakhs practitioners.

The current man power situation in India in regard to population per physician and nurse, midwife is higher than the norms set by the Mudaliar Committee in 1961, which are 3500
and 5000 respectively. However, there are gross inequalities between rural and urban areas in the distribution of health manpower e.g., there is one doctor for 13,000 to 15,000 population the state of Karnataka and Uttar Pradesh. The bed population ratio varies from 1:286 in Pondichery to 1:2483 in Madhya Pradesh. The primary health case approach seeks to redress these inequalities.

From the above overview of the health situation, it is evident that during the last three decades, considerable progress has been made in the health status of the people in India. Yet, the health situation in the country side is far from satisfactory. To conclude, one may say that there is great need of reorientation and integration of health and developmental strategies, which can meet the basic health needs of the people in rural area.

1.5 THE HEALTH SYSTEM IN INDIA:

In India, health is concerned, the states are largely, independent in matters relating to the delivery of health care to the people. Therefore, each state has developed its own system of health care delivery, independent of central government. The central government is concerned only with policy making, planning, guiding, assisting evaluating and co-ordinating the works of the State Health Ministries. The health system in India has three main levels, i.e Central State and local or peripheral.

I. ADMINISTRATION AT THE CENTRE.

The Union Ministry of Health and family Welfare is the highest office for health administration in India. The Directorate General of Health Services and the Central Council of Health are the bodies of administration of Health policies at the Centre.
1. UNION MINISTRY OF HEALTH AND FAMILY WELFARE:

ORGANIZATION:

The Union Ministry of Health and Family Welfare is headed by a Cabinet Minister, a Minister of State and Deputy Health Minister. The Union health Ministry has two main departments – the Department of Health and the Department of Family Welfare. Each department is headed by a Secretary to the Government of India as its executive head, assisted by Joint Secretaries, Deputy Secretaries and a large administrative staff. The Department of Family Welfare was created in 1966 within the Ministry of Health and Family Welfare. The Secretary to the Government of India in the Ministry of Health and Family Welfare is in overall charge of the Department of Family Welfare. He is assisted by an Additional Secretary and Commissioner (Family Welfare) and one Joint Secretary.

2. DIRECTORATE OF GENERAL OF HEALTH SERVICES:

ORGANIZATION:

The Directorate General of Health Services is the Chief Directorate and Principal Advisor to the Union Government in both medical and Public Health matters. There is an Additional Director General to assist the Director General. There is a team of Deputy Directors and large administrative staff. The Directorate comprises of three main units, e.g. medical care and hospitals, public health and general administration. A post of Commissioner for rural services is also existed.

3. CENTRAL COUNCIL OF HEALTH:

The Council works for the promotion of continuous consultation; mutual understanding and co-operation and action between the Centre and the States for the implementation of all programmes and measures pertaining to the health of the nation. The Union Health Minister is the Chairman and the State Ministers are its members.
HEALTH PROGRAMMES IN INDIA:

Since India became independent, several measures have been taken by the National Government to improve the health of the people. Prominent among the measures is the National Health Programmes, which have been launched by the Central Government for the control/eradication of communicable diseases. They are National Malaria Eradication Programme, Diarrheal Diseases Control Programme, National Filarial Control Programme, National TB Control Programme, National Leprosy Control Programme, STD Control Programme, National Programme for prevention of Visual Impairment and Control of Blindness, National Goiter Control Programmes, Expanded Programme of Immunization, National Family Planning Programme, National Water Supply and Sanitation Programme and Minimum Needs Programme, etc.

ORGANIZATIONAL SET UP AND FUNCTIONS OF HEALTH CARE DELIVERY SYSTEM IN KARNATAKA:

Under the Constitution of India, health is a State subject. It is the responsibility of the State Government to provide all health care facilities to its citizens. Accordingly, to fulfill the above responsibilities, the State Government of India and upgraded the facilities and created new facilities time to time to provide comprehensive Health Care Facilities in the State. The National Health and Family Welfare Programmes are also implemented as per guidelines of Government of India for prevention and control of communicable diseases, viz., Malaria, Filarial, Tuberculosis, Leprosy, Gastroenteritis/Cholera and other vaccine preventable diseases. Control of non-communicable diseases like iodine deficiency disorder, diabetes, cancer, etc., are also implemented in the State.

The following health care services are provided by Government in the State:
1. Preventive health care services.

2. Preventive and control of diseases.

3. Curative services.

4. Rehabilitative health care services.

To provide comprehensive health care services, the State has created and providing services at the following levels:

1. Primary Health Care Services at sub-centre PHC and PHU.

2. Secondary Health Care Services at CHC, Taluka Level Hospitals and District Hospitals, and


SUB-CENTRES:

There are lowest level health care facilities headed by a Junior Health Assistant (Female) for every 5,000 population in the plain areas and 3,000 population in the hilly and tribal areas. These sub-centres provide primary health care services including reproductive child health services. A total of 8,143 sub-centres are established in the State as on 31-03-1999. These sub-centres activities are supervised and managed by the medical Officer of PHC/PHU.

PRIMARY HEALTH CENTRE:

These centres are providing promotive, preventive and curative health care services. One PHC is established for every 30,000 population in plain areas, 20,000 population in the hilly and tribal areas to provide primary health care services, headed by a Medical Officer assisted by paramedical personnel. A total of
1,601 PHC's are sanctioned and established in the State as on 31-03-1999. These centres also implement the national health and family welfare programmes. PHU were established in the State to provide primary health care services in the smaller areas and these are being upgraded to PHCs as per norms.

COMMUNITY HEALTH CENTRES:

These centres are established by upgrading one PHC out of four PHCs to function as first referral unit for population and 30 beds for providing curative services for inpatients. There are 242 Community Health Centres functioning in the State. These centres are being expanded, upgraded under Karnataka Health Systems Development Project and Karnataka Family Welfare Project. These centres are proposed to be provided the following four speciality services, viz.,

2. Obstetrics and Gynaecology.
3. Paediatrics.
4. Dental care services.

DISTRICT HOSPITALS:

27 district hospitals are working. The district hospitals of new districts are being upgraded and expanded for providing secondary health care services. These district hospitals are being developed under Karnataka Health Systems Development Project (KHSDP) and Karnataka Family Welfare (KFW) projects in the State. These hospitals will provide 14 speciality services with 250 beds to 600 beds. Government of Karnataka has set up the Organization of Health and Family Welfare to provide health care services.
STATE HEADQUARTERS:

At the State level of Karnataka the State Ministry of Health is headed by a Minister of Health and Family Welfare and a Deputy Minister of Health and Family Welfare. The Health Secretariat is the official organ of the State Ministry of Health and is headed by a Secretary who is assisted by Deputy Secretaries, Under Secretaries and a large administrative staff to execute the policies of the Government and the recommendations of the Central Council of Health.

STATE HEALTH DIRECTORATE:

The Directorate of Health Services in Karnataka is known as Directorate of Health and Family Welfare Services. The Director of Health and Family Welfare Services is the Chief technical advisor to the State Government on all matters relating to medicine and public health. Earlier Director of Health and Family Welfare Services was the head of the department and was working under the health Secretary. But now during May '1999 a post of Commissioner for Health (in the cadre of Secretary to Government) has been created and filled up who will be coordinating the activities of all the wings of Directorate and looks after the policy matters. The medical education was one of the wings of health and Family Welfare Department earlier. Now, it is a separate department with Minister and Secretary in view of the increasing number of medical colleges. The aim of health services and training institutions is the protection of the health of the people.

The Director of Health and Family Welfare Services is the head of the department and responsible for the planning, implementations and monitoring of all health care services in the State. He is assisted by Chief Administrative Officer, Chief Accounts Officer-cum-Financial Advisor and Additional Directors.
and Joint Directors implementing the national health and family programmes.

DIVISIONAL LEVEL ORGANIZATIONS:

The Joint Director heads the office and four Divisional Office are functioning at four (4) Divisional Headquarters with supportive staff.

DISTRICT LEVEL ORGANIZATION:

The District Health and Family Welfare Officer is the head of Organization, controlled by Zilla Panchayat at District level. He is assisted by gazetted assistant and Programme officers.

TALUKA LEVEL ORGANIZATION:

Taluka Level Health Officer is sanctioned for each Taluka to plan, implement, monitor the health care activities in the Taluka area, who will be supervising and monitoring the activities of PHCs in the Taluka and co-ordinates activities of department with other departments.

BELOW TALUKA LEVEL:

PHCs are established to provide primary health care services in the rural areas and each PHC has 6-8 sub-centres for carrying out the implementation of national health and family welfare programmes in addition to providing of primary health care services. Sub-centres is the lowest peripheral health organization established for providing primary health care services and implementation of national health and FW (RCH) programmes in the area.
HEALTH ORGANIZATION AT DISTRICT LEVEL WITH SPECIAL REFERENCE TO DHARWAD DISTRICT:

Following the recommendation of Srivastava Committee of 1975, the Government was introduced the Rural Health Scheme under Minimum Need Programme in 1977 to provide primary health care to rural India towards the attainment of "Health For All by 2000". Following are the main features of the said scheme.

VILLAGE LEVEL:

There were 1,344 inhabited villages in Dharwad district with a total population of 22,79,000 (1991 census). Each and every village has one Health Assistant (formerly known as Community Health Volunteers) selected from the area itself by the district health officer. The village health worker is only responsible for dealing with minor ailments and for supplying general drugs. The village health assistant scheme is to develop the idea of "people's health in people's hand". He is trained by the nearest PHC to deliver basic comprehensive health care is his own area of service.

The training of traditional dai is also an important component of rural health scheme. The aim is to train at least one local dai per village. The training is imparted at the nearest PHC for period of one month.

SUB-CENTRE LEVEL:

According to the Sixth Five Year Plan, it was proposed to have one Sub-center with one male and one female multi-purpose worker for every block of 5,000 population in general and one sub-center for 3,000 Population in tribal and hilly areas. The multi-purpose worker is totally responsible for all the health services
and programmes functioning in their jurisdiction with technical support of the PHC.

**PRIMARY HEALTH CENTRE LEVEL:**

PHCs were started as a part of CDP in 1952 (Community development Programme), and were required to cover 80,000 to 1,20,000 population. As it has been found that the primary health centres have not been able to provide adequate health services to such a large population, it has been proposed during the Sixth Five Year plan to establish one PHC for every 30,000 population. There are 103 PHCs in Dharwad district (1996-1997).

**FUNCTIONS OF PRIMARY HEALTH CENTER (PHC):**

The basic health services to be provided by the PHC are as follows:

a) Medical care,
b) Control of communicable diseases,
c) Maternal and child health care,
d) Family planning,
e) School health,
f) Environmental sanitation,
g) Collection and maintenance of vital statistics,
h) Health education and nutrition programmes,
i) National health programmes,
j) Referral services, and
k) Training of village health workers or health assistants.
Thus, the PHC is responsible for providing comprehensive health care in all fields mentioned above. The current staff pattern of PHC:

1) Medical Officer 1
2) Block Health Educator 1
3) Senior Health Assistant (Male) 1
4) Senior Health Assistant (Female) 1
5) Junior Health Assistant (Male) 1
6) Junior Health Assistant (Female) 1
7) Lab Technician 1
8) Staff nurse 1
9) FDA 1

MEDICAL AND HEALTH SERVICES IN URBAN AREAS:

In Dharwad district, and Gadag cities are well developed with their own health infrastructure. Hubli city is situated on National Highway No. 4 on the south of Dharwad city (district headquarters). The distance between Hubli-Dharwad is about 20 kms. Hubli has a Medical College and an attached hospital known as Karnataka Institute of Medical Science (KIMS), formerly known as Karnataka Medical College (KMC) to prepare trained medical and paramedical manpower for meeting medical and health needs of the surrounding districts. In the KIMS campus there is Regional Health and Family Welfare Training Centre, Hubli, is imparting training to medical personnel engaged in health and family welfare.
Similarly, Gadag city (newly established district headquarters and the present study area comes under this jurisdiction has formerly one private Ayurvedic Medical College, known as D.G. Melamalagi Ayurvedic Medical College and an attached hospital to prepare trained Ayurvedic medical practitioners.

Both Dharwad and Gadag district hospitals are providing medico-legal and health care services to the urban as well as rural population. It is in addition to the KIMS in Hubli, there is one Mental Hospital in Dharwad city to fulfil the mental health needs of the people of Dharwad, and the neighbouring districts. One ESI hospital and nine ESI dispensaries are functioning to fulfil the health needs of working groups under the ESI Act in Dharwad district.

1.6 HEALTH PROFILES OF KARNATAKA AND DHARWAD DISTRICT AND SAMPLED TALUKA:

KARNATAKA:

Karnataka form the south-western part of the Deccan peninsular India and lies between 11° 31' and 18° 41' North latitudes and 74° 12' and 78° 40' East longitudes (Karnataka State Gazetteers 1982) with an area of 1,91,791 sq km (1991 census). Its maximum length from north to south is about 700 km and from east to west is about 400 km. It is bounded by Maharashtra State in the north, Goa in the north-west, Andhra Pradesh in the east, Tamil Nadu in the south and south-east, Kerala in the south-west and the Arabian Sea in the west.

The state was divided into four climatic regions. The coastal region lies between the Arabian Sea and the Western Ghats and covers the Dakshina Kannada District and the Southwestern of Uttar Kannada district with an annual rainfall exceeding 3,000 mm.

Western Ghats and Malnad region includes the mountainous and forest areas lying to east of western edge of the Ghats. It includes the south-western
part of Belgaum district, the northern and eastern parts of Uttar Kannada district, the extreme western parts of Shimoga and Chikmagalur districts, the south-western parts of Hassan district, most of Kodagu and the extreme south-western parts of Mysore district. In this region, the annual rainfall ranges from 4,000 to 8,000 mm over the Western Ghats, decreasing eastwards to about 2,000 mm in the eastern edge of the region. The northern maidan region is an extensive undulating plateau forming the northern part of the state, with elevation ranging from 350 to 650 metres including the districts of Bidar, Gulbarga, Bijapur, Dharwad, Bellary and Belgaum (except the south-western parts). The annual rainfall varies from 1500 to 500 mm, decreasing generally from west to east. The region is drained by the Krishna and the Godavari river systems.

Lastly, the southern maidan region is a broad undulating plateau in the southern half of the state, with the elevations ranging between 600 and 1,000 mm. There are many local hill ranges in the southern part of the region, the most prominent of which are Nandidurga and Devarayanadurga- Shivaganga ranges. This region includes the districts of chitradurga, Tumkur, Kolar, Bangalore, Mandya, Mysore (except the extreme south-western parts) and parts of Hassan, Chikmaglur and Shimoga districts, outside the Malnad region. The annual rainfall varies from about 2,000 mm in the western edge to about 460 mm in the eastern part of Chitradurga district.

The soil of the state varies from alluvial to laterities in the coastal and in the other heavy rainfall region to alluvial in the river valleys in the maiden parts, to dark brown clay to red loam and red in the southern parts to mixed red and black in the north central, interspersed with large black soil patches to trap soils in the northern most parts.

The state is a plateau with an altitude ranging from sea level along the western coast to about 5,000 ft in the Western Ghats and tapering off to east with an elevation of 1,000 ft in the
plains. Karnataka lies in the warm temperature zone. The entire state has a tropical monsoon climate. For the state of Karnataka the year may be divided into four seasons, viz., a) winter from January to February b) summer from March to May, c) south-west monsoon season from June to September, and d) north-east monsoon season from October to December.

There are variations in temperature. In January the temperature varies from 25.8°C to 37.7°C and in May 19.4°C to 39.9°C with extremes of 40°C or more. April to June is the hottest months with hot winds blowing from the west. Summer days in north-eastern part of Karnataka are very hot on account of the bareness of the soil, but winter in these areas is not severe.

According to 1991 census, the total land area of Karnataka occupies 5.31 per cent of the total population and 5.83 percent of the total geographical area of the country. The State has four revenue divisions, 20 districts, 51 sub-divisions, 175 talukas, 745 hoblies, 5,655 gram panchayats and 27,066 inhabited villages. Bangalore, which is situated in the south-eastern part of the State, is the capital of Karnataka. The State has definitely made unique contributions to the wealth of Indian culture and heritage. Its achievements in literature, fine arts and in religious and spiritual realms are quite significant. The culture of Karnataka is a product of a mixed heritage of Hindu, Muslim, Christian, Jain and other influences. According to 1991 census, 85.4 per cent Hindus, 11.6 per cent muslims, 1.90 per cent Christians, 0.72 per cent Jains and 0.13 per cent others. The major language of the people is Kannada which is also the official language of the State. Besides, Hindi, a large number of Muslims speak Urdu.

Karnataka is predominantly an agricultural State with 69.9 per cent of population living in rural area. Agriculture, is the largest sector of the economy, employing about 63.12 per cent of
the labour force. The major crops in the State include paddy, ragi, jowar, bajra, maize, wheat, groundnuts, sugarcane, cotton, gram and tur. Industrially, Karnataka is semi-developed.

Karnataka is the most populous state in India with a population of 44.9 million according to 1991 census. The decadal population growth rate in the State during 1981-91 (+21.12) was slightly lower than that for the country as a whole (23.9 per cent). The population density per sq km for the year 1991 was 235 for Karnataka compared to 273 for India. 69.9 per cent of the population lives in rural areas compared to 73.9 per cent in India. The sex ratio of the population (number of females per 1,000 males) for the year 1991 was 960 for the State compared to 927 for all India. The per cent of the child population (0-14 years) to the total is slightly lower in the State than in India. However, the percentage of the population age of 60 years and above was higher in the State (7.5) than in India (3.8). In 1991, persons from scheduled castes comprised 16.38 per cent of the population of Karnataka compared to 16.3 per cent for the whole country. Persons from scheduled tribes constituted only a small portion (4.26 per cent) of Karnataka.

Karnataka is one of the most educationally developed states in the country. The literacy rate (for the population age 7 years and above) according to the 1991 census, was 56.04 in the State compared to 52.11 per cent in the country. The literacy rates were 67.26 per cent for males and 44.34 per cent for females in Karnataka compared to 63.86 per cent and 36.42 per cent for males and females respectively for the whole India. The crude birth rate of 22.7 per 1,000 population and the crude death rate of 7.9 per 1,000 population in Karnataka were lower than the all India crude birth rate of 26.4 and crude death rate of 9.0 as estimated by the SRS (Sample Registration System) in 1998. The total fertility rate of 3.1 children per woman in Karnataka was also
slightly lower than all India rate of 3.6 children per woman as estimated by the SRS in 1991. Basic health indicators of Karnataka and India have been shown in Table 1.2.

Table 1.2
BASIC HEALTH INDICATORS FOR KARNATAKA AND INDIA 1981-1991

<table>
<thead>
<tr>
<th>Index</th>
<th>Karnataka</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>4,49,77,201</td>
<td>84,63,02,688</td>
</tr>
<tr>
<td>Percentage population increase (1981-1991)</td>
<td>+21.12</td>
<td>23.9</td>
</tr>
<tr>
<td>Density of population /km² (1991)</td>
<td>235</td>
<td>273</td>
</tr>
<tr>
<td>Per cent Rural (1991)</td>
<td>69.9</td>
<td>73.9</td>
</tr>
<tr>
<td>Sex Ratio (1991)</td>
<td>960</td>
<td>927</td>
</tr>
<tr>
<td>Per cent 0-14 year old (1991)</td>
<td>36.0</td>
<td>36.3</td>
</tr>
<tr>
<td>Per cent 60+ years old (1991)</td>
<td>7.5</td>
<td>3.8</td>
</tr>
<tr>
<td>Per cent Scheduled Castes (1991)</td>
<td>16.39</td>
<td>16.3</td>
</tr>
<tr>
<td>Per cent Scheduled Tribes (1991)</td>
<td>4.26</td>
<td>8.0</td>
</tr>
<tr>
<td>Per cent literate (1991)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Male</td>
<td>67.26</td>
<td>63.86</td>
</tr>
<tr>
<td>b) Female</td>
<td>44.34</td>
<td>39.42</td>
</tr>
<tr>
<td>c) Total</td>
<td>56.04</td>
<td>52.14</td>
</tr>
<tr>
<td>Crude Birth Rate (1998)</td>
<td>26.9</td>
<td>26.4</td>
</tr>
<tr>
<td>Crude Death Rate (1998)</td>
<td>7.9</td>
<td>9.0</td>
</tr>
<tr>
<td>Total Fertility Rate (1991)</td>
<td>3.1</td>
<td>3.6</td>
</tr>
<tr>
<td>Infant Mortality Rate (1991)</td>
<td>77</td>
<td>79</td>
</tr>
<tr>
<td>Life Expectancy (1986-1991)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Male</td>
<td>62.1</td>
<td>58.1</td>
</tr>
<tr>
<td>b) Female</td>
<td>63.3</td>
<td>59.1</td>
</tr>
</tbody>
</table>

Source:
b) Health Information of India, 1992
c) Census Operation,
d) SRS Publications.
Table 1.2 further indicates that the infant mortality rate is lower in the State in the country. For the year 1997, the infant mortality rate estimated by the SRS was 53 per 1,000 live births in Karnataka to 72 in India. The life expectancy is higher in the State (62.1 for males and 63.3 for females) than in India (58.1 males and 59.1 females). The higher death rate and infant mortality rate indicates that more attention is needed in the State to strengthen the delivery of general health and maternal and child health care services. For high birth rate is concerned, still sterilization will remain an important component of family planning in the State, but increased knowledge, availability and use of temporary contraceptive methods should balance it. The government's current programme to promote the use of temporary contraceptive methods is important to the continued decline of fertility. Efforts in this area by the private sector should also be encouraged as well.

The State follows the national pattern of three-tier health infrastructure in rendering primary health care through PHCs, Sub-centres and Community Health Centres. The policy of Government is to establish one such centre for 30,000 people in plain areas and 20,000 in hilly and tribal areas, one Sub-centre with a female health worker for 5,000 people in plain areas and 3,000 hilly and tribal areas and one Community Health Centre for 1,00,000 people or one out of four PHCs as a referral institution.

The earlies scheme of establishing PHUs has been discontinued. Existing units will be upgraded into PHCs in a phased manner. At present, there are 1,726 PHCs and 8,143 sub-centres, 583 units and 252 CHCs. There are 176 hospitals, and 87 Family Welfare Centres in urban areas and 269 in rural areas. (Economic survey of Government of Karnataka, 1998-99). Trends in basic health indicators for Karnataka for 1971-1991 are shown in Table 1.3.
Table 1.3
TRENDS IN BASIC HEALTH INDICATORS FOR KARNATAKA
1971-1991

<table>
<thead>
<tr>
<th>Index</th>
<th>1971</th>
<th>1981</th>
<th>1991</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>2,92,99,014</td>
<td>3,71,35,714</td>
<td>4,49,77,201</td>
</tr>
<tr>
<td>Density of population /km²</td>
<td>153</td>
<td>194</td>
<td>235</td>
</tr>
<tr>
<td>Per cent Rural</td>
<td>75.7</td>
<td>71.1</td>
<td>69.9</td>
</tr>
<tr>
<td>Sex Ratio (Female per 1,000 males)</td>
<td>957</td>
<td>963</td>
<td>960</td>
</tr>
<tr>
<td>0-14 year old (Per cent)</td>
<td>NA</td>
<td>39.6</td>
<td>36.0</td>
</tr>
<tr>
<td>60+ years old (Per cent)</td>
<td>NA</td>
<td>2.67</td>
<td>7.5</td>
</tr>
<tr>
<td>Per cent Scheduled Castes</td>
<td>13.14</td>
<td>15.07</td>
<td>16.39</td>
</tr>
<tr>
<td>Per cent Scheduled Tribes</td>
<td>0.79</td>
<td>4.91</td>
<td>4.26</td>
</tr>
<tr>
<td>Per cent literate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Male</td>
<td>41.62</td>
<td>48.81</td>
<td>67.26</td>
</tr>
<tr>
<td>b) Female</td>
<td>20.92</td>
<td>27.71</td>
<td>44.34</td>
</tr>
<tr>
<td>c) Total</td>
<td>31.52</td>
<td>38.46</td>
<td>56.04</td>
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<tr>
<td>Crude Birth Rate</td>
<td>NA</td>
<td>NA</td>
<td>26.9</td>
</tr>
<tr>
<td>Crude Death Rate</td>
<td>NA</td>
<td>NA</td>
<td>9.0</td>
</tr>
<tr>
<td>Total Fertility Rate</td>
<td>NA</td>
<td>NA</td>
<td>3.1</td>
</tr>
<tr>
<td>Infant Mortality Rate</td>
<td>95.0</td>
<td>69.0</td>
<td>77</td>
</tr>
<tr>
<td>Life Expectancy (1986-1991)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Male</td>
<td>NA</td>
<td>NA</td>
<td>62.1</td>
</tr>
<tr>
<td>b) Female</td>
<td>NA</td>
<td>NA</td>
<td>63.3</td>
</tr>
<tr>
<td>c) Combined</td>
<td>NA</td>
<td>NA</td>
<td>64.7 (P)</td>
</tr>
</tbody>
</table>

Source:

a) Statistical abstract of Karnataka 1976-77, 1993-94,
The major health trends in Karnataka have been described in Table 1.3. This Table indicates that the total population of the State was 29.2 million in 1991, 37.1 million in 1981, and 44.9 million in 1991. The decadal growth rate increased from 24.22 per cent for the period 1961-71 to 26.75 per cent for the period 1971-81. But it may be stated that the decadal rate of population growth has declined to +21.12 per cent for the period 1981-91. The density of population increased from 153 in 1971, 194 in 1981 and 235 in 1991. Further, it indicated that the percentage of the rural population declined from 75.7 in 1971 to 71.1 in 1981 and to 69.9 in 1991. The percentage of population age 0-14 years was declined from 39.6 in 1981 to 36.0 in 1991. The percentage of population age 60 and above was increased from 2.67 in 1981 to 7.5 in 1991.

The percentage of the population belonging to Scheduled Castes and Scheduled Tribes has changed slightly during the last two decades. Literacy has increased during the period of 1971-91, though the level of literacy among females is still low. The proportion of males age 7 and above who are literate increased by 7.9 percentage points from 1971 to 1981. Similarly, for the females the increase was only 6.79 percentage points. According to the 1991 census, the proportion of literate males age 7 and above (67.26 per cent) is higher than the proportion of literate females (44.34). The percentage of total literacy was increased by 31.52, 38.46, and 56.04 per cent for the period 1971, 1981 and 1991 respectively.

Further, Table revealed that the crude birth rate and crude death rate were 26.9 and 9.0 per 1,000 population for the period of 1991 respectively. The total fertility rate was 3.1 in 1991. The level of fertility in Karnataka is slightly lower than the all India level. The infant mortality rate in the State has declined significantly from 1,000 population in 1971 to 69 in 1981 and
again it is increased by 77 in 1991. The life expectancy at birth for females in Karnataka is about 1.2 years higher than that for males.

During the Ninth Five Year Plan (1997-2002) particularly, the annual plan period for the year 1998-99, Karnataka State has programmed a substantial outlay of Rs. 920.47 crores on water supply, rural health, primary education, housing, nutrition and rural roads. Water supply received the highest priority (42.59 per cent) of the total outlay for Basic Minimum Services (BMS) followed by primary education (21.92 per cent), housing (12.90 per cent), health (12.80 per cent), rural roads (5.55 per cent) and nutrition (4.22 per cent).

An overview of the above mentioned one may conclude that particularly in development planning, nutrition and health are given low priority. Despite all these efforts of the government, the health and medical care services in the rural areas in the state continues to be unsatisfactory. However, there is great need of reorientation and integration of health and developmental strategies which can meet the basic health needs of the people.

DHARWAD DISTRICT:

Dharwad is one of the important districts situated in the north-western corner of the state known for educational facilities, lies between 14°.17' to 15°.50' north latitudes and 74°.43' to 76° east longitudes. The maximum length before the district from north to south is about 186 km and from east to west is about 138 Km.s. It is bounded by Bellary and Raichur in the east, Uttar Kannada in the west, Belgaum and Bijapur in the north, and Chitradurga and Shimoga districts in the south (Dharwad District Gazetteer 1995).
According to 1991 census, the district has 13,738 square kilometers geographical land area, or occupied 7.16 per cent of the total land area of the state, and 7.81 per cent of the state's population amongst 20 districts of the state.

The district according to 1991 census has a population of 35,03,150 and a density of 255 persons per square kilometers, 17 taluks, 44 hoblies, 1344 inhabited villages. Out of the total population of the district (for the period 1991) 65.1 per cent reside in rural and 34.9 per cent in urban areas. Urbanisation in the district is higher than that of the state averages (30.9 per cent). The proportion of scheduled castes in the district is 11.72 per cent in rural 16.44 (including SCs and STs) and in urban 11.51 per cent. It may be noted that Schedule tribe population in the district is very negligible (3.00 per cent). The percentage of literacy in the district is 58.68 per cent, which is more than that of the state average. Literacy among males and females is 71.37 and 45.20 per cent respectively. It is 52.34 per cent in rural and 70.20 per cent in urban areas.

In the year 1996-97, there were 17 government hospitals, and 2 other agencies and 4 hospitals (coming under Indian system of medicines). There are 12 government dispensaries, 29 dispensaries (coming under Indian system of medicines), 103 PHCs, 83 PHUs 41 Family Welfare Centres and 591 sub centres and 1 mental hospitals in the district. The district has differentiated socio-economic structure, complex medical and health needs of population and also possesses the medical institutions and organizations to meet the health needs of the population. Thus, the district is a suitable area where the problems of the present study have been explored thoroughly.
CHARACTERISTICS OF THE SAMPLED TALUKA:

In Dharwad district, one taluka namely Mundargi, which is a drought prone taluka and known for its endemic disease. It was selected to study the problems of health of the rural people living in this taluka. Here an attempt has been made to give a brief description of the taluka as follows:

MUNDARGI:

According to 1991 census, the total population of the taluka was 1,01,792. There are 52 villages in the taluka. Civic amenities available are concerned, there are 33 primary schools, 48 middle schools, 16 high schools, 6 junior colleges and 1 first grade college, 2 industrial training institutes, 1 private Ayurvedic medical college respectively. There is one community health centre at taluka headquarters. Further, there are 6 PHCs at Bagewadi, Kalker, Hirewaddatti, Dambal Jantali Shirur and Hammigi and 5 Government Ayurvedic hospitals at Korlhalli, Bidarahalli, pethalur, doni and Harogeri.

Besides these medical facilities, a few private practitioners are working in the taluka, Holders of MBBS/BAMS degree are almost located at taluka headquarters. In contrast, RMPs, PMPs, Compounders, Daies and traditional healers are mostly serving the rural population. Mostly people in rural areas do not utilize the Government hospitals and dispensaries. They either go to private hospital at district headquarters (Gadag City) or go to private doctors for emergency and medical treatment of their family members. The reasons responsible for utilizing private hospitals and private doctors are lack of proper facilities and services in the government hospitals. However, people were losing their faith in Government health services due to poor management. For example, at present the taluka headquarters has one nominal Community Health Centre (CHC) having big
building with a provision of 30 beds. But the administration of this CHC is under the in-charge of Medical Officers of different PHCs in the taluka however, the CHC is functioning without required manpower (staff) and infra-structural facilities.

The taluka has full infra-structural facilities such as roads, post and telegraph, scheduled/co-operative banks, educational institutions at all level, etc. Services of irrigation are tube well and lift irrigation through canals in some villages of the taluka which are electrified, but villages in remote areas are underdeveloped. Female folk are mostly engaged in traditional activities.

Thus, notwithstanding Mundargi taluka is attached with all infra-structural facilities, lacking overall development of the taluka.

1.7 “RIDDING WATER OF FLUORRIDE” IN MUNDARGI TALUKA IN DHARWAD DISTRICT:

The fluorosis is an incurable disease. Fluorosis is caused by excess fluoride in drinking water. When the fluoride level exceeds 1.5 mg/litre of drinking water, it can cause fluorosis of different kinds such as dental, skeletal and non-skeletal fluorosis. Fluorosis is a global problem. It is found in the countries like Algeria, Argentina, China, Japan Kenya, Morocco, Turkey and Thailand are under the grip of fluorosis threat. Even in United States like Texas, Utah, North Dakota and South Dakota have high fluoride level in the ground water. In India also, the States like Andhra Pradesh, Himachal Pradesh, Karnataka Maharashtra, Rajasthan, Bihar, Haryana, Punjab, Tamil Nadu Uttar Pradesh and Madhya pradesh are under the grip of endemic to hydro-fluorosis. In fact, fluorosis is affected millions of people in 13 to 15 States of India. In Karanataka, Dharwad, Kolar and Raichur districts are the fluorosis prevalent districts. Fluoride is known to
Fluoride is not absorbed in the blood stream. It has an affinity for calcium. Hence, due to consumption of excess fluoride, different kinds of health problems arise irrespective of age. Fluoride is known to induce aging. Individual who consumes high fluoride water may suffer from the following diseases:

1. Dental fluorosis,
2. Skeletal fluorosis,
3. Non-skeletal fluorosis, and
4. Combination of above three manifestations.

In endemic areas where fluoride content in water is more, pregnant woman may suffer with damaged foetus. Infant mortality may also increase in these areas.

EXTERNAL SYMPTOMS OF FLUOROSIS:

1. DENTAL FLUOROSIS:

Dental fluorosis is prevalent in children who are born and brought up in endemic areas of fluorosis. When teeth lose shining, yellow-white spots are formed. It is definite indication of dental fluorosis. In advanced stage the tooth becomes black. As appearance of individual becomes ugly, it creates, social problems.
2. SKELETAL FLUOROSIS:

Its symptoms are varied in nature. Severe pain in the backbones, joints, hips stiffness in joints and backbone are also indicators. Outward bending of legs, hands is of advanced stage and these parts lose their shape and contours. This is called as knock knee syndrome:

3. NON-SKELETAL FLUOROSIS:

Besides the above two, there are several ailments such as:

1. Neurological manifestations – nervousness, depression, etc.,
2. Muscular manifestation – weakness, stiffness and loss of muscle power,
3. Allergic manifestation – skin rashes,
4. Gastro-intestinal problem – pain, diarrhea, constipation,
5. Headache, and
6. Urinary track trouble.

Fluoride may be one of the factors causing the above mentioned manifestations.

From the above discussion, it is clear that the fluorosis is an incurable disease. As it has no remedial treatment, only prevention of the fluorosis is to be done. Epidemiological survey report of Mundargi taluka in Dharwad district indicated the prevalence of different types of fluorosis as mentioned in Table 1.4.
TABLE 1.4
DIFFERENT TYPES OF FLUOROSIS IN MUNDARGI TALUKA

<table>
<thead>
<tr>
<th>Type of disease</th>
<th>Population affected in 38 villages</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental fluorosis</td>
<td>19008</td>
<td>66.21</td>
</tr>
<tr>
<td>Skeletal fluorosis</td>
<td>3699</td>
<td>12.88</td>
</tr>
<tr>
<td>Non- Skeletal fluorosis</td>
<td>5998</td>
<td>20.89</td>
</tr>
<tr>
<td>Total</td>
<td>28705</td>
<td></td>
</tr>
</tbody>
</table>

Source:
Epidemiological Survey conducted by Fluorosis Control Cell, AIIMS, New Delhi in 1998, Published Study Report, Schemes of Dharwad District October 1989

From Table 1.4 one can conclude that there is high prevalence of dental fluorosis and non-skeletal fluorosis respectively. The water quality analysis has clearly revealed the presence of fluoride more than permissible value of 1.5 mg/liter in almost all the 43 villages of Mundargi taluka. The fluoride contamination of underground water was called for identifying safe drinking water source to these villages. Following the recommendations of National Drinking water mission, New Delhi, Existing Regional Water Supply Scheme is providing Tungabhadra river water to the affected villages of mundargi taluka and to the Gadag district headquarters. Notwithstanding the great efforts of Zilla parishad Dharwad district, still the situation in the study area is far from satisfactory due to inherent drawbacks in the functioning system. Thus, the taluka is a suitable area where the problems of the present study have been explored thoroughly.

CONCLUSION:

The researchers makes no claim that he is working in an areas unexplored earlier. Several studies have been conducted in
the general area of health and medical care services. Still this study has some unique features and differs from other studies conducted in this area.

It is clear that health needs are not only biophysical phenomena but there are also social, cultural, economic, educational factors, which determine the nature, and volume of health needs in a society. Therefore, along with medical measures, there is also a need of taking socioeconomic and educational measures through multi sectoral approach in which health services have to play a major role. With this in view, every effort is being made to see that health related activities are systematically planned and co-ordinated at all levels. In India, large amount of money had been allocated in successive Five-year plans and sufficient health care infrastructure has been provided throughout for country. Notwithstanding the efforts by W.H.O and by many national governments and voluntary institutions, the developing country like ours, is still severely threatened by endemic diseases. This situation is thwarting the physical, mental and social well-being of the people and thereby affecting economic progress of the country.

The main reason responsible for the failures of our existing health care delivery system is its failure to meet the basic health needs of the community. Since, we have to achieve the good of Health for All by 2000 A.D. with several other countries of the world, the health care facilities and health awareness should reach universally to all who lack it and need it most. This needs a sound and socially oriented health infrastructure for the proper delivery of health care services in order to meet the health needs of the community.