CHAPTER 1
INTRODUCTION

1.1 Human Resources and Economic Development

Economists have long been aware of the importance of human resources development. Adam Smith stressed the importance of education at various points in "The Wealth of Nations". He specifically induced the acquired and useful abilities of all the inhabitants or members of the society in his concept of 'fixed capital'. Alfred Marshall emphasized the importance of education "as a national investment" and in his view "the most valuable of all capital is that invested in human beings". [Harbison and Myers 1970]. Simon Kuznets opines that the measures of capital formation based on fixed capital are deficient because they omit expenditures for education, non profit research, health, recreation etc., which contribute to economic growth by increasing the efficiency of a complex productive system [Simon Kuznets 1959].

The building of modern nations depends upon the development of people and the organisation of human activity. Progress is basically the human effort. It takes human agents to mobilise capital, to exploit natural resources, to create markets and to carry on trade. In other words, man himself is a precious resource and the development of this resource has facilitated the harnessing of other resources [S. Natarajan, 1990]. Human resources are the source of ideas, decisions and actions on
In a broad sense, the concept of "human resources" includes the entire population of the country which can be divided into three classes: (i) the potential human resources that covers the child population, expected to join the labour forces in future (ii) the active human resources capable of undertaking productive work; and (iii) the redundant human resources which includes retired and disabled persons incapable of doing any work mental or physical. Generally the second group is taken into account in defining the term 'human resources'. But defining it in this sense is mere a head account of that part of population participating in labour force. The numerical abundance of physical labour force does not ensure adequate supply of human resources required for rapid economic growth. [Adhvaryu, J. H. 1966]. From the point of view of economic development, qualitative aspect of human resource is considered to be more important than it's quantitative aspect, [Narayan D. L. 1983]. The qualitative aspects like skills, knowledge, resourcefulness, positive response to job opportunities, work motivation, discipline, good health, etc., are vital elements to make human resources more efficient participants in the process of economic development.

Schultz has made a distinction between human resources and other resources – while the latter are passive, the human resources are active agents in the field of economic activities. Schultz has also suggested that while undertaking the economic analysis of human resources, a distinction be made between their preferences including motives, feelings and aspirations and their
attributes including health, energy, efficiencies, skills and knowledge, which contribute to the possibility of realising their preferences. Schultz thus defines human resources as "those attributes of a people physical, biological, psychological and cultural that account for both social values, determining preferences and economic values of producer and consumer services that a people renders, whether they come to them as earnings or directly as personal satisfaction" [Schultz T.W 1972].

In the field of modern economic development with ever changing technologies, the capital component part of the labour force or the developed human resources or human capital is the single most important factor in accelerating the pace of development [Singer H.W. 1973] Human capital refers to the man's production skills, talents and knowledge [Nandwani S.C 1973]. In fact, human resources development or accumulation of human capital is a process of increasing skills, knowledge and capabilities of all the people in a society. [Harbison. F. and Myers M. Charles 1970]. It is a complex process. Its components include health, education, youth welfare, social services, games and sports. [S. Natarajan 1990]. The process involves investment in human beings in the form of formal and nonformal education, post school training and learning, pre school learning activities, migration, health and sanitation programs etc., [Schultz T.W. 1970]. In short, the process unlocks the door to modernization.

Human development links the creation of productive work opportunities for the poor with the provision of goods and services to meet their essential needs. The elements of human development—health, education, nutrition and fertility reduction are closely
interrelated. Improvement in one area can facilitate improvements in others and reinforce all aspects of development. Human development depends on economic growth to provide the resources for expanding productive employment and basic services. In turn, these services – primary and vocational education, primary health care, nutritional and family planning programs and safe water supply, can make striking contributions to growth [World Development Report 1981]

**Human Resources in Developing Countries:**

The process of human resources development has two problems in a developing country (i) the problem of human resources development and (ii) the problem of human resources utilization. Both these problems are much less glaring in developed countries than in developing countries.

In the developed economies the proportion of less developed human resources is very small. [Rao V. L. 1984] while in the developing countries there is an over supply of unskilled manpower. [Nandwani S. C. 1973]. In a developing country the rural sector is unorganized and the urban sector organized. The rural sector is characterized by the scarcity of developed human resources. The developed human resources tend to get concentrated in the urban sector due to the expectation of greater employment opportunities and other amenities. The lack of human resources development is regarded as one of the important factor responsible for the slow growth of developing economies, especially of its rural sector, since it leads to low labour efficiency, lack of specialized and entrepreneurial abilities, factor immobility and
widespread prevalence of customary values of social institutions, inhibiting economic change, [Perumal V. S. 1984].

The developed human resources or the human capital comprehends brain capital, the elite and high level manpower representing the leaders or innovators in different walks of life. The greatest growth occurs in societies where men have an eye to the economic change and are willing to stir themselves to seize it. [Arthur Lewis 1983]. Human resources intervene in the process of production through their organising ability and physical labour. It is observed that more than three fourth of the income of the modern economy is attributable to human agent. [Schultz T. W. 1972]. Thus for the critical role it plays in the process of economic development, 'human resources' are described as the ultimate basis of the wealth of nations. [Harbison F. H. 1971]. The physical abundance of natural and other resources cannot bring about lasting progress of a country as long as it's human resource is incapable of harnessing the bountiful resources for production of goods and services. [Mehta M. M. 1976]. The capacity of people for better utilisation of resources depends largely upon the human resource development. Developing human resources through education, health and medical care, etc, will bring about a change in knowledge, skills, attitudes, resourcefulness, work motivation, physical ability etc., and thereby making them effective participants in the process of economic development.

Central to economic development is the idea of change. Developed human resources is equipped with a better sense of perception of the possible, which conditions and predisposes them to change. [Mallikan S. M. and Hapgood D. 1962]. Human
resources development is thus considered to be the precondition for modern economic growth. [Narayan D. L. 1983].

Hence an attempt is made in the following sections to discuss health as an important instrument for the development of human resources development. Section 1.1 deals with the role of human resources in economic development. 1.2 discusses Health as an important component of human resources development. 1.3 deals with the development of Health Economics as a branch of welfare economics. 1.4 deals with health policy approach in India. 1.5 deals with the review of literature. 1.6 deals with the studies made in Karnataka. 1.7 deals with objective and hypotheses of the study. 1.8 deals with the study area and the methodology. In 1.9 a brief note about the economy of Karnataka and 1.10 is the chapter scheme of the study.

1.2 Health an important component of Human Resources Development:

Health is both an instrument and product of development and is therefore a major factor in the development process. (Yasodha Shanmugasundaram 1994). Every individual regards health as an important element of his well being and the well being of those close to him. The enjoyment of health has come to take place among the 'human rights'. The preamble of the Constitution of the World health Organisation states that "the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distraction of race, religion, political belief, economic or social condition". Doing everything possible to improve health conditions in all strata of the population stands
therefore as a moral imperative. (Gunnar Myrdal 1968). With the changing concept of development, health status of people has assumed a significant place in the development strategy. Increasingly, development is viewed in terms of improvement in the quality of life rather than in per capita income. As an important component of quality of life, better health status has become a major developmental goal. The impact of development process on income distribution, poverty, rural – urban disparities, social inequalities etc., are increasingly seen in terms of their consequences to the health status of people. Thus modern understanding of development implies improved nutrition, hygienic living and working conditions greater awareness of health problems and wider accessibility to health care services which have a favorable affect on the health status of the people. Improvement in health status as well as health care are treated as integrated components of the development process.

1.3 Health Economics:

'Economics of Health' has become an important branch of applied 'Welfare Economics' [Yashoda Shanmugassundaram and Ahalya Krishnamoorthy 1991]. Though many contributions have been made to Health Economics since 1914, the literature on 'Health Economics' is "still sufficiently small". [Culyer, Wiseman and Walker 1977]. However the literature has grown in 1980's. As the provisions of health service is essentially a resource allocation problem, the role of an economist is important [1] to rationalise and make the decision making process more explicit [2] to provide useful definitions, concepts and analytical tools, [3] to develop
relevant data base and [4] to suggest summary measures. Economic analysis helps in defining different aspects of health and medical care. 'Health Economics' is the study of the interrelationship of the health system with the economic system. Therefore 'Health Economics' is viewed as a policy science. Health Economist is increasingly assuming the role of a public health practitioner, with major tasks [i] to assess the health status of the populations [ii] to evaluate and undertake necessary actions including health care needs, [iii] to determine the most appropriate way to satisfy the public health needs, including health care of individuals, groups and to assess the effectiveness with which those needs are met and [iv] to identify specific health hazards and to plan their containment [W. W. Holland 2000].

A WHO inter-regional seminar on Health Economics was held in Geneva in 1973, in which the subject was considered in detail. The seminar held that 'health economics' seeks to quantify over time the resources used in health service delivery their organisation and their financing; the efficiency with which resources are allocated and used for health purpose; and the affects of preventive curative and rehabilitative health services on individual and national productivity.

Health economics is the application of the theories, concepts and techniques of economics to the health sector. [K. N. Reddy 1994]. It is concerned with such matters as the allocation of resources between health promoting activities, the quantity of resources used in health service delivery, the organisation and funding of health service institutions, the efficiency with which resources are allocated and used for health purpose and the effects
of preventive, curative and rehabilitative health services on individuals and societies [Lee. K. and A. Mills, 1983]. Economics of health concerns about all those areas that contribute to health e.g. medical care, nutrition, education, housing, sanitation, water supply, environment, income, poverty alleviation, preventive health care, family planning etc.,

In relation to a mixed health economy the WHO seminar observed that ; [1] there is a special need for balanced development; [2] in the private sector individuals and families decide their own priorities and [3] the health industry often being labour intensive and using highly skilled personnel, cannot adjust readily to rapid national development and growth. While choosing the equipment and technologies, the economic analysis of the health sector, provides the choice of reliability and simplicity rather than modernity. [W.H.O. 'Health Economics'. Public Health Papers 64]


1.4 Health Policy Approach in India:

It is essential to know the approach towards promoting the health of the Indian people under the Five Year Plans.

The First and Second Five Year Plans were dominated by the recommendations of the Bhore Committee which are also the broad objectives of the Health programs in India. These objectives were control of major communicable diseases, strengthening of the basic health services, population control and the development of health manpower resources. By the end of Second Five Year Plan Mudaliar committee was appointed. It made several recommendations which reinforced the earlier programs. The health care services were developed but modern health care services were expanded only in the urban areas. However public health programs were introduced in the rural areas. The eradication of malaria and small pox were fairly successful but other communicable diseases like leprosy and tuberculosis were neglected. By the end of the Third Five Year Plan the Family Planning Program emerged as a top priority program. The Chadah Committee of 1963 recommended 'Multi purpose Workers Scheme' not only to look after malaria eradication but also family planning activities. However Mukerji Committee of 1965 recommended separate staff for the family planning program. It also recommended the 'Basic Health Service' at the block level. The
Jungalwalla Committee of 1967 recommended the integration of all services, organisation and personnel. The Fourth and Fifth Five Year Plans set their target on population control as the means to achieving health care development. Rural health care infrastructure was expanded under the 'Minimum Needs Program'. As recommended by the Kartar Singh Committee of 1972 the Government laid emphasis on the 'multipurpose workers scheme'. The Government also accepted the recommendations of the Srivastav Committee in 1977 and launched the Rural Health Scheme.

The First National Health Policy was declared in 1983 with a view to attain the goal of 'Health For All by 2000 A.D.'. The policy laid stress on the preventive, promotive, public health and rehabilitation aspects of health care. The health policy laid down specific goals to be achieved by 1985, 1990 and the year 2000 A.D. In 1986 the restructured 20-point program consisted 6 points related to health which included clean drinking water, health for all, two child norm, housing, improvement of slums and protection of the environment.

The approach of the Ninth Five Year Plan was to provide optimally functioning primary health care system, to improve the efficiency of the existing health care infrastructure, to develop the health man power, to involve the voluntary organisations and to involve Panchayat Raj Institutions in planning and monitoring health programs at the local level.

The Second National Health Policy Draft is announced by the Government in 2001. The Draft mentions: the integration of
vertical programs, strength of infrastructure, involvement of Panchayat Raj Institutions in the health care delivery, regulation of private practice and to establish a reliable data system.

1.5 Review of Literature:

With the establishment of World Health Organisation and with the realisation in recent decades that health care is an important input in the development of human resources as part of overall economic development there has been a rapid growth of literature on health care in India and elsewhere. Periodic publications on health care by international and national institutions, reports on health care by State and Central Governments, reports of sponsored projects on the subject, individual research works by academicians and scholars, have added to enrich the literature on health care. An attempt has been made here to make a brief survey of relevant contributions to the literature on health care made by individual researchers and some prominent national and international institutions.

Yasodha Sanmugasundaram [1994] maintains that health is both an instrument and product of development and is therefore a major factor in the development process. Health determines and is determined by varied factors like education, nutrition, population growth, income, environment and so on. She prefers to say that the complicity of their relationship makes it difficult to isolate health from the rest of the factors. She tries to provide economic dimension to health care system in her work on 'Health Economics
in India'. She further opines that the objective of health strategy is the improved health status of the poor and the disadvantaged. 'Equity' is thus the guiding principle in co-ordinated health care system.

Rameshwaram [1989] in his study perceives health as both an input and output and is linked with development and therefore it should not be viewed in isolation from the overall goals of development. He further elaborates that an adequate and equitable health care system stimulates the development through improving human productivity. In the course of his empirical study on 'Medical and Health Administration in Rural India' he concludes that health care for everyone and particularly for the weaker sections living in rural areas is a far cry. He felt that hardly any inroads have been made into rural areas as the existing approaches of the health care services remain hospital based and care oriented. The promotive and preventive aspect of the health care have been neglected and programs by and large do not involve the people actively. He points out some of the serious handicaps in the rural health care system as defective personnel policies, non deployment of adequate staff, inadequate allocation of medicines and materials, non availability of modern diagnostic aids, nonuse of available equipment, over crowded hospitals and absence of yardsticks to determine bed–staff ratio.

Maurice King [1982] has made a comprehensive study on health care in his book "Medical care in Developing Countries" (Ed). The book contains common sense guidance for doctors facing the challenges of poverty, malnutrition and ignorance. Useful
guidelines for effective, inexpensive ways of managing patients and of improving community health by teaching as well as treating. It provides practical suggestions from critical patient care to design of a health center. The economic implications of health care is rightly explained by Maurice King when he says that the cleavage of the world into rich nations and poor ones divides "care in sickness" quite as sharply as it does any other aspect of the human condition. In this the great division of mankind, the rich have money and medical skills in comparative abundance the poor have not. He further says that the people of most developing countries live in rural areas where 'lack of transport' imposes major difficulties in the provision of medical care.

Kamble's [1984] study on 'Rural Health' in Tumkur district of Karnataka State attributes health problems in rural areas to economic malaise of poverty and to lack of medical facilities & nutrition diet. He further points out the imbalance in allocation of financial resources for health facilities between urban and rural sectors resulting in greater amount of funds being absorbed by urban areas and the health services in rural areas remaining scanty and inadequate. Income disparity is another problem affecting the rural poor in terms of health facilities. He opines that in general in rural areas socially weaker sections are also economically weaker and are more exposed to health problems than socially strong people.

L. Ramchandran [1993] has suggested a five point functional role of Primary Health Care in his book "A Hand Book of Management for Primary Heath Center Personnel":

1) Easy accessibility of health care facilities as close to the people as possible.
2) Availability of health care facilities.
3) Integrated health care - total health care to tackle all locally present health problems in every house in the community.
4) Affordability of services - economic accessibility as cheap as possible or free of cost.
5) Appropriate technology any device or strategy or drug which is scientifically tested out to be correct and adaptable to local situation.

Ramchandran feels that delivery of health care in the community through primary Health Centers has not been effective enough to achieve the desired goals and objectives under the different national health programs and the major reason for this is that the personnel at the Primary Health Centers have not been sufficiently equipped with appropriate managerial competence and skills. Referring to various evaluative studies Ramchandran suggests that there has been gross under utilisation of staff, time and resources; and also under utilisation of the services by the community due to inadequate contact, rapport and communication of the staff of the Primary Health Centers.

Dr. Vidya Charan [1990] pleads for better health care and for improving our primary health care system in his work on "Hand Book of Preventive and social medicine". He has listed major health problems in our country; as the population increases there will be poor environmental sanitation, need for potable water supply to all, state of malnutrition, ignorance and illiteracy, prevailing conditions
of ill health and low level of health education. He affirms our overall expenditure is much less on preventive and promotive health aspects as compared to the curative one. He therefore opines that only conventional delivery system of medical care will not suffice to achieve the goal of "Health for all by 2000".

N. Padma [1991] exhorts that an ideal health service delivery system should aim at achieving not only a more just distribution of health resources but also a more efficient use of resources. She further suggest that the achievement of the twin criteria of efficiency and equity in health care involves optimum mix of inputs at 'least cost' and effective implementation of policy measures. She observes that rapidly rising medical cost, duplication of expensive facilities and services, expensive testing and unnecessary use of expensive setting - all these suggest that medical care can be improved and made more cost effective. Padma's observations on efficient health care is significant. She affirms that an efficient health care system is one in which the difference between total social benefits and total social costs is the largest. This maximisation is ensured when the marginal social benefits of further health care equals the marginal social costs.

Meera Chattarjee's [1993] study "Health For too many India's Experiments with Truth" revealed that whole India built a network of health centers and hospitals between 1950's and 1980's and provided this infrastructure skeleton with 'muscles of some 22,500 doctors and 3,00,000 paramedics. This large body has lacked in 'head and heart'. She observes that the inadequacy of knowledge and appropriate skills and the wants of a 'service motivation',
empathy for the sick, the needy and the isolated became painfully apparent in the 1980's.

Ramchandran and Dharmalingam [1993] plead for health education of people as part of health care. They observed that the entire process of involving people in learning about health and disease; and aiding them to act suitably for overcoming illness and preserving a positive health is health education. Health educator has to adjust his talk and action to suit the group for whom, he has to give health education. This is particularly necessary when the health educator has to deal with illiterates and poor people. He has to get down to their level of conversation and human relationships so as to reduce any social distance.

A very broad and comprehensive explanation of health care is provided by Kathleen E. Grady and Barbare Strudler Wallston [1988] in their work 'Research in Health Care Settings' They observe that health care encompasses a range of services that take place in a variety of settings and are delivered by many kinds professionals. These settings include physician's office, hospitals, clinics, health maintenance organisations, nursing homes, and other chronic care facilities; voluntary health associations like American Cancer Society, the Heart Association and the Ostomy Society and other work place and community settings. Health care services include education as well as diagnosis, treatment, prevention, early detection and rehabilitation.

P. R. Panchmukhi [1994] in his study on 'Economics of Health – Main Issues For Discussion' has observed that all is not well with regard to the location of the PHC's manning of these
centers, equipping these centers with adequate facilities etc., He suggests that the question of equity, cost effectiveness, resources cost of morbidity etc. financing, economy and efficiency in the health care sector etc. can be considered important areas to help policy making.

K. N. Reddy [1994] considers health care as a 'merit good' in public finance parlance and it possesses the following features: 1) uncertainty of demand. 2) Risk of death or risk of impairment of full functioning 3) Inseparability of product from activity of production 4) Product uncertainty 5) Imperfect information 6) Monopoly 7) Unique supply conditions 6) Externalities. Posing the question whether market can be relied upon to operate efficiently? or can it be dependent upon to ensure equity? Reddy firmly affirms that the market cannot achieve twin economic objectives and there is need for the Government intervention in health market. He further asserts that Government intervention falls into three main categories (1) Regulation (2) Direct Provision and (3) Taxes and Subsidies.

Discussing the hospital finance, Yasodha Sanmughasundaram [1994] observes that public hospitals are funded through State finance by budget allocations at different levels of government. Health is a state subject in India. The Government hospitals are earmarked grants which puts a ceiling on the quality – quantity of output of the hospitals. She opines that policy imperatives have to focus on cost containment in hospital to strengthen the service maximising goal. Rate review in hospitals has been suggested as an important corrective for cost escalation.
Research endeavors should be focussed on identifying the utilisation rate of available resources, case mix, patient physician mix, contracting system in hospital administration and scope for service sharing items under 'hospital service bundle' could be separated or unbundled and dropped from hospital services and offered by outside agencies.

K. Seeta Prabhu [1994] in her study on 'Financing of Health sector in Maharashtra' has observed that the decline in the share of revenue expenditure on health in total revenue expenditure as well as social sector expenditure of health in overall priorities. She further explains that there exist wide disparities in the development of health infrastructure between rural and urban areas as also between regions and districts in the state. It points out the lack of concerned action on the part of the Government to improve the access to public health facilities. She opines that the cut in public expenditure coupled with moves towards increasing user costs and increased privatisation of the health sector is bound to further restrict the access of the poor to essential health care services.

K. N. Reddy and V. Selvaraju [1994] comprehend since female literacy has a significant bearing on health status, there is an urgent need to step up expenditure on women's education. It may not help to improve the health status in the short run but may help to increase the human capital and productivity and thereby economic growth. The author further suggest that reprioritisation of resources in health sector in favour of the poor and elimination of wastage's in the use of resources through cost effective techniques
have to be attempted. If possible higher per capita allocation towards health care have to be made.

Dr. (Mrs.) N. Manonmoney [1994] in her study on 'An Economic Analysis of Health Status' in Tamil Nadu concludes that services of PHC has been the important variable in reducing the infant mortality rate. She further states that PCH occupies a key position in the states' health care system by providing comprehensive health care services to the people.

A study conducted by Suman Jain [1994] on "Gender and Survival", a comprehensive analysis of Kerala and Haryana shows that people in Kerala utilise the available medical facilities more than people in Haryana, due to the greater accessibility of health services in Kerala. Her findings suggest that people in rural areas live closer to health centers in Kerala. They have better transport facilities for visiting the centers. They are politically more aware and therefore health facilities are distributed equally to all. The author further states that highly literate female population has been more willing to use these services when they become available. She concludes that women's access to employment, control over income and decision making power are the key determinants of household health.

K. C. Roy and Raj Kumar Sen [1994] perceive that since the rise in per capita income and the improvement in health indicators appear to be highly correlated, one could expect the rise in expenditure on health. However the author suggests that what are important are the efficiency and effectiveness with which money is spent and the programs are implemented. They further opine that
in India a very large part of health sector budget goes towards the curative care in urban hospitals than towards preventive care in rural health centers. Expenditure on maintaining staff is much larger than on required provision such as drugs, fuels, equipment's, etc.,

Neglect of women's health needs in developing countries has been pointed out by "Human Development Report [1995] of United Nations. The report says that women's special health needs suffer considerable neglect. Many developing countries do not provide qualified birth attendants, good prenatal or post natal care or emergency care during deliveries. In most poor countries pregnancy complications are the largest single cause of death among women in their reproductive years. Nearly half a million maternal deaths occur each year in developing countries. Too often the miracle of life becomes a night mare of death.

There was a consensus of opinion amongst the participants at a workshop organised jointly by FRCH and ICSSR on Health Care [1997] that the present services have failed because they have been totally centered around the medical profession and because the community's involvement in their own health services has been virtually non existent. It was unanimously agreed that the most effective means of people is to hand over the responsibility for the health services below a certain level to the community through their representative bodies such as Gram Panchayats and Panchayat Samitis.

The study conducted by George and Nandaraj [1992] on 'State of Health care in Maharashtra' shows that private sector accounts
for the highest part of the utilisation of health facilities. It was found that nearly 3/4th of the illness episodes were treated by private practitioners and hospitals and only 13% of illness episodes availed of Government facilities. The utilisation pattern also showed that utilisation of private facilities is more in rural areas [79.82%] as compared to urban areas [73.45%]. The authors suggest that the broadest possible platform should be created for bringing in some amount of regulation in the chaotic growth of private health sector. Standardisation of fees, room charges, equipment and other facilities has to be thought.

Commenting on the policies of developing countries towards the health care spending the Economic Development Institute of the World Bank (1991) says "in order to restrain the growth of their health care expenditures, some Governments are cutting back on government health care activities raising fees at government health or encouraging the development of private sector health care. The study has identified 5 basic mechanisms through which better health help improve labour productivity; (1) few days off work and a longer working life (2) More strength and endurance on the job (3) More energy for innovation and for adapting to the rapid change that characterizes the development process (4) the eradication of a disease vector on infected land which would provide new resources for existing workers; and (5) more time to specialise and less chance of disrupting the job".

The World Health Organisation in its Public Health Paper (77) [1994] observed that "the Golden strategy explicitly indicated that achievement of the health for all goal would require relevant
reorientation of national health systems so that each might develop
an appropriate organisational infrastructure based on primary
health care". Such reorientation would have to be motivated by a
basic regard for equity, social responsibility and human rights.
Reorientation of national health system would require fairly simple
but scientifically sound and well organised knowledge on the part
of those responsible for system design and development at country
level.

Atiqur Rehman Khan [1986] has observed in his paper on
"Implications of Mortality Trends and Patterns for Health and social
welfare planning", that mortality decline and the consequent
change in the disease spectrum and health status also have
important implications for health manpower development policies".
He further says that family planning represents another prominent
element of the changing needs of health manpower. He contends
that because of the nature of health care programs manpower
consumes a sizable fraction of the health budget in most developing
countries. The shortage of health manpower can seriously affect
health programs and in fact, is currently a problem in many
developing countries. A special problem relating to health
manpower, maldistribution – high concentration in urban areas
and shortage in rural areas which calls for restructuring of the
programs organisation.

Elaborating the risk approach to health care system Backett,
Daries and Barvazian [1984] have identified three factors. First and
not surprisingly health care of any kind but particularly care at the
primary level – seems to contribute to health roughly in proportion
to the local unmet health needs. It means that in the face of great need even a small improvement in the provision of health care to a neighborhood is likely to result in a disproportionate improvement in health. Secondly the effect of health care services on health will of course depend to a great extent on the local problems and the indices used to measure them. Some indices – prenatal mortality for example – are more sensitive than others to the impact of health care. Finally it seems likely that in some cultures the more subjective the description of health that is the more it reflects local feelings rather than merely pathological findings – the more it will be influences by health care services especially if they are accepted and correspond to the beliefs and values of the population.

Mukund Uplekar and Alex George have made a study on "Access to Health Care in India". With a comprehensive explanation of the concept and factors determining the 'access to health care' the authors have made the following observations on the Indian health care scenario.

i) There has been a massive increase in the infrastructure for health services with a variable and grossly inequitable distribution among and within the different states of the country.

ii) The infrastructure is too big to manage centrally and is yet centralised top heavy and bureaucratized.

iii) As in any other public service organisation functionaries of the public health services from the medical officers in charge of PHC's to village level community health workers – are ill trained, unaccountable and unresponsive to the needs of the people.
iv) There has been a concurrent and unchecked rise of the 'for profit' private health sectors.

v) Glamoured by the medical technology and compelled by the unresponsive public health services the ignorant and illiterate populace has largely patronised the for-profit private medical sectors diverting a substantial part of their meager resources for paying doctor's fees and buying medicine.

Kliknonbol [1989] of Thailand suggest in his work 'Public Health Development and Administration' that the most effective and acceptable form of health care delivery system for the people in the developing world has to be evolved by the community itself. Development is indigenous to each society and build primarily on country's own resources. The developing countries must design their own health care delivery models to provide primary health care to all it's people.

The International Conference on Primary Health Care [1978] which met at Alma-Ata in 1978 declared that health which is a state of complete physical, mental and social well being and not merely the absence of disease or infirmity, is a fundamental human right and that the attainment of the highest possible level of health is a most important world wide social goal whose realization requires the action of many other social and economic sectors in addition to the health sector. The conference further states that the existing gross inequality in the health status of the people particularly between developed and developing countries as well as within countries is politically, socially and economically unacceptable and is, therefore, of common concern to all countries.
The conference affirms that the main social target of governments, international organisations and the whole community in the coming decades should be the attainment by all peoples of the world by the year 2000, of a level of health that will permit them to lead a socially and economically productive life. The conference suggest that 'Primary Health Care' is the key to attaining this target as part of development in the spirit of social justice.

A study conducted by K. N. Reddy and V. Selvaraju [1994] on "Health Care and expenditure by Government in India. 1974-75 to 1990-91" has brought out some significant trends. The study observes that health care expenditure by Government in India is somewhat comparable to many of the developing countries, for example, China, Korea, Thailand, Indonesia, Myanmar and Mongolia without reaching their levels of health care expenditure policy of Government in particular.

David Bradly and others [1992] observed that from the review of descriptive and analytic studies in urban areas of industrialized (European) and developing countries, it seems that the health impact of both chronic and acute morbidity (and consequent mortality) is upon the urban poor. Urban poverty is a complex proxy measure for a composite of deprivation extending from command over resources, education, social support and self esteem to housing quality and sanitation. But as a fundamental variable poverty remains the significant predictor of urban morbidity and mortality.

Grady and Wallston [1988] have explained the costs influencing health care utilization. They observed that in
considering costs that influence health care utilization it is important to take into account hidden costs and costs that are not strictly monetary opportunity costs. Hidden costs would include public transportation and the costs of body setting or respite care for elderly or ill dependents opportunity costs refer to the loss of ability to do other things while receiving medical treatment. The most obvious example is the loss of ability to works and earn wages. The amount of time lost can be influenced by the time of day of program or appointment, the length of time including waiting time, and the length of program or number of visits needed for treatment. These kinds of related costs can have a differential impact on certain groups of people such as employed versus unemployed people with children or the handicapped.

Health Research in India is on the verge of growing out of its infancy. Unlike medical research, Health Research of any significant value has been going on for barely one decade. There are social science research organizations, academic institutions, market research agencies in both the government and non-government sector, as well as various non-governmental organisations (NGO's) who conduct research as one of their activities. Few organizations like AIHPPH, CHC, FRCH, IIHMR and NIHFW, whose significant activity includes health services and related research. However a significant chunk of research is carried out by market research organisations (e.g. IMRB, MODE, ORG etc.) academic institutions (e.g. ICSSR/ICMR institutes and allied research bodies, IIN etc). and individual consultants. The health research in India can be broadly classified into studies related to (1) Service delivery (2) epidemiological patterns (3) health education (4)
community participation and (5) alternative strategies. The service under the area of service delivery has focussed on (a) providers of health care (b) beneficiaries and (c) national programs. Further studies on providers of health care services include a) studies on Health Infrastructure b) studies on health human power c) studies on Organizational Dynamics and d) studies on Health Finance. Studies on the public health system have brought to light the fact that while they are expected to tackle a full range of health care responsibilities, they have not been equipped to the same degree with adequate facilities and infrastructure. The ICMR study of 1991 showed that where a PHC is expected to cover 30,000 population, only these people living on an average within a radius of 6 kilometers were able to take advantage of the services being offered at the PHC. The percentage of villages not covered by the PHC varied from 23% to 94% [ICMR 1991]

Studies on the staff working in public health institutions like PHC's show a vide gap between the number of sanctioned posts and those which are actually filled. Since family planning continues to be the priority program the motivation, time and energy of the staff is not sustained. [Ghosh B 1991; Sathyamala and Gokulamani J 1986; Jesani A. et al, 1992] Lower level staff in PHC's suffer from poor supervision [Durgaprasad P. et al 1989] exhibit a number of gaps in knowledge and skills [IIHMR 1991] and the visit by these functionaries are not planned properly [Chauhan R. C. et al 1985; Danida 1986; ICMR 1991]

Studies related to finance, focus on the costs of programs, projects, revenue raising methods cost benefit studies, earnings of
health providers etc., The key topics covered in the NGO sector broadly focuses on the raising of finances for their various health services [Dave P. et el 1990], evaluation of Mini Health Centers [MHC] scheme run by NGO's in the state of Tamil Nadu [Sapru R. 1991] The studies on the public health sector covered topics like cost analysis of PHC's [Kataria M. et el, undated] and operational efficiency of public hospitals. [Mahapatra P. et el 1992]. The studies on the private sector have mainly looked at the earning of the health institutions and practitioners. One of the studies looked at the expenditure incurred by the corporate sector on providing health benefits to it's employees [Duggal R. 1993].

Under organizational dynamics, various studies concentrated on management, information, decision making, supplies, referral etc. in the health care services [ASCI et el 1989; Gupta J. P. et el, undated ; Narayana G. et el, 1990; Pandey U. et el, Public Systems Group1985]. These studies showed that there is a lot of duplication of reports, all information is not put to use, retrieval of information is not proper, information is not used for the purpose of planning and main importance is attached to FP program.

Studies on the access and utilization of health services have generally been updated by specialist institutes of health research, such as the NIHEW Delhi, IIHMR Jaipur, and NGO such as FRCH Bombay, KSSP Thiruvananthapuram etc. These studies appear as part of general surveys on health and studies focusing exclusively on access and utilization are few. In the rural areas of Madhya Pradesh people preferred providers within on kilometer located in the private health sector, [George A. et el 1993]. Contrary to this
view, a national level study by NCAER showed that the clientele of the government doctor in rural areas come even from farther than 2 kilometers, 25.55% of them come from beyond 10 kilometers [NCAER 1992]. The awareness of PHC declines as the distance between the PHC and the respondents village increases [Udupa K. N. 1991]. While the awareness of PHC was 83.08 % in the PHC village, and still lower in the SC village [54.68%].

Among the reasons for not utilizing Government health services, distance is given as the major reason in the study in Maharashtra and Kerala. Dissatisfaction with treatment appears as the prominent reason in Tamil Nadu Maharashtra and Kerala. Lengthy waiting time is mentioned as a prominent reason in the Maharashtra and Tamil Nadu studies. Non availability of medicines in government health constitutions is another important reason in Kerala. There was no major difference in utilization of private / public facilities among males and females. Similarly, while 16.29 % of males used a public facility, 14.4% of females also used the public facility. [George et el 1993]. A Tamil Nadu study of utilization of public [NTI 1988]. However a study in U. P. by NIHFW showed that 70% of scheduled castes used private practitioners. [Thakru P. H. Kapoor S. D. in Basu S. K. 1990]. A study among the tribals of Madhya Pradesh showed that PHC was resorted to only as a last resort.

The studies on household health expenditure have been carried out in Madhya Pradesh, Maharashtra and Kerala. The study in Madhya Pradesh showed that the per capita household health expenditure was 7.44% of consumption expenditure, while in Maharashtra study it was 7.54 % [George A et el 1993, Duggal R. & Amin S.
The percentage of income spent on health in Kerala was 7.17. In Kerala the lowest class spent as high as 14.36% of their income on health the highest class had to spend only 4.36% of their incomes. [Kannan K. P. et al 1991]. In Madhya Pradesh the expenditure on health was only 3.91% for higher income groups, it was 7.91% and 9.9% for the lowest and lower middle classes respectively. [George et al 1993].

A large number of studies have been carried out various national programs in different states. The national programs which fall in this category are NMEP [Khan M. E. and Dey A. S. 1988], NLEP [DGHS 1991] GWEP [Kumar A (Ed) et al 1989] and NTP [ICORCI 1988]. However special reviews were more frequent and at all levels some of these are reviews of ORT [Nagi B. S. 1990], a country wide evaluation of NNAPP [ICMR 1989].

1.6 Studies in Karnataka:

Health research studies in Karnataka can be broadly classified in 6 categories. These are research studies pertaining to (1) functioning of the health personnel (2) evaluation studies of UIP (3) Studies on tuberculosis (4) the delivery of health care (5) All India surveys carried out in Karnataka and (6) other studies.

Lack of information lack of motivation and the use of untrained dais were the reason for the failure of ICDS program in the 9 talukas of Karnataka. [Amar D. S., mohmad A. S. Ramaih S.] Productivity of health manpower in a PHC in Karnataka showed that a high proportion of time i.e. 31% - 57% was spent by the
field staff on environmental sanction get very little attention [Gosh Basu 1991]. A study of the multipurpose Health Worker scheme in four districts, 12 PHC's and 16-20 SCs of Karnataka MPW's in Karnataka had better qualifications but still felt that the training was inadequate. [Durgaprasad P. Srinivasan S. Reddy Narayan G. 1989]. The study assessing the training and impact of the work of CHW's argued that community health” was still evolving as a concept and as such the role of the CHW was greatly limited [Ramprasad V. 1985].

A study sponsored by World Bank and MOHEW to evaluate the performance of Junior Health Assistants (Jr. HA's - female) in six IPP – III Districts in Karnataka revealed that Jr. HA's [female] were almost completely aware of the job responsibilities prescribed for them by authorities. However, while they acknowledge their responsibilities towards MCH, FP and UIP, they were not at all aware of dai training. This awareness by and large grew with time. A study of tribal village of Kappala regarding the measles immunization show that the immunization was able to contain the epidemic and prevent the disease and its attending complications [Devadasan R. Devadasan N. 1987]. A study assessing the impact of KAP of mothers on the coverage of children for immunization in several PHC villages, pointed out that a large [79 %] proportion of mothers were aware of the importance of the immunization in preventing the diseases [Kekre M. M. Mohammad A .J. 1987]. Another study on the coverage of vaccination in Chikmaglur District, reviews the cause for partial immunization and non immunization. It showed that the lack of information and the lack of community participation were mainly responsible for partial
immunization [Kekre M. M. Prutvish S., A. S. Mohammed et al 1986-87]. A study conducted by ISEC Bangalore evaluated the level of vaccination coverage in Hassan district, revealed that the non-completion of vaccination schedules appeared to be higher among girls. It also showed that children belonging to scheduled caste groups and Muslims, occupational groups with low status and uneducated families were less likely to be immunized. The study concluded that the ultimate objective of the immunization's programme, i.e., better child survival can be realized only with substantial socioeconomic development and more equitable distribution [Rayappa H. Samuel J. M. 1988]. A study on the infection rate of TB in a selected area i.e. 40 villages from three talukas of Bangalore district was conducted to examine the trend of the infection rate which seemed to be declining over a 23 years period [Chakraborthy A. K., Chaudari K. et al 1984-86].

A study was conducted to look into the significant of social factors in the treatment behavior of TB patients. Greater family support was seen among regulars and the social interaction of the patients seemed unaffected [Narayan R. Srikantaramu N. 1987]. An analysis was made of health care delivery in plantations in Karnataka which pointed out to several draws backs in the system [Bisquith D. 1993]. The study on factors affecting the health of slum dwellers of Bangalore pointed out that most of the health problems of slum dwellers result from unsanitary environment, poor nutritional status and personal hygiene and low status of health awareness [Kalliath M. 1992]. The evaluation study of three community projects [Hope M. 1989] showed the lack of participation by the people. In a selective survey of large number of
households, of the villages falling within 5 kms radius of six PHC's the majority deliveries were conducted at home. For common illness, utilisation of government services was 86 % and private practitioners only 13 %. For minor illness government hospitalization facilities were more accessible than private. The main reason was proximity rather than preference. PHC's were utilized by 91 % for curative purpose [Narayan R. Prabhakar Petal 1987]

There are few All India Surveys which also covered Karnataka state. An evaluation report of GEP was made in 1989 [Kumar A (Ed), Biswas G. (Ed), Kaul S. M. (Ed)]. National Family and Health Surveys I and II were conducted in 1992-93 and 1998-99 respectively. These two surveys have covered a wide range of health aspects like lifestyle indicators, availability of facilities and services to the Rural population, fertility F. P., mortality. morbidity, immunization, nutrition, material and reproductive health, quantity of health care available to households etc., [NFHS –1 and NFHS – 2]. As part of the National Review of Immunization 1989, VPD and VCA surveys were carried out in Mysore district [Pruthvish S. Amar D. S. Mohmmad A. S. et el 1989]. A survey of "Health and Nutritional Status of Jenu Kurubas of Mysore and Kodagu districts was conducted in 1988 [Rao D. H. Brahmam GNV et el 1989].

A household survey of 8 villages under a rural PHC was undertaken in 1985. The study showed that a majority preferred a MBBS doctor for treatment and even traveled a long distance to contact him. The cost of medicines found to be substantial. The
study concluded that the rural areas show potential for designing schemes like health insurance and health co-operatives based on community financing [Rao P. H. 1988]. An important study on the utilization of health care services in Dharwad district was made in 2001 [Dadibahvi R. V. and Bagalkoti S. T. 2001]. The major findings of the study are; the accessibility of health care services to people is not uniform across all districts of Karnataka, the IPR found to be higher in rural areas – for poorer households and for females, the SC/ST households have higher levels of morbidity in the rural areas and nearly 60 % of them used government health care services. The main reason for this was the subsidized or free treatment by government health care services. The report listed – distance, lack of transport facilities in appropriate timings heavy rush in the hospital, apathy, non availability of medicines and equipment as the main shortcomings of the government health care services. These gaps in above studies made us to take up the present study.

1.7 Objectives and Hypotheses

Objectives:

Huge investments have created a vast network of public health centers towards the maintenance of the human resources of the country. Both central and state government have vigorously followed a policy of 'better health for all' under five year plan. The actual utilisation of public health care factors. The indifference on the part of the health officials to make these facilities accessible to the needy and poor, lack of awareness and ignorance on the part of
the beneficiaries and wrong location of PHC's are mainly responsible for the under utilization of the health care facilities. Obsessive preoccupation with the Family Planning Programme had a devastating impact on the wider provision of health services. [Devadar Benerji 2001]. The imposition of western "biomedical model" of health by the major world powers and the invention of idea of "Selective Primary Health Care" [Walse and Warren 1979] were antithetical to the Alma Ata Declaration. Health attainment is a function of several, often interrelated factors, which includes income, income distribution, poverty, government expenditure access to the quantity of health care facilities [K. Seeta Prabhu 2001]. Rural patients pay more for health care and bear a higher burden of treatment. This reflects to a large extent excluding Kerala, the sparse distribution of health care facilities in the rural areas of all states in India [Krishna T. N. 2001]. These aspects makes us to study the health status, the development of health infrastructure in Karnataka. It is also undertaken to study the access of health care facilities and the pattern of household expenditure on health care in the study area.

The study envisages the following objectives:

1) To study the 'Health Status' of People of Karnataka.

2) To study the level of development of Public Health Care Infrastructure in Karnataka.

3) To study the pattern ad trend of public expenditure on health care in Karnataka.

4) To study the 'Access to Health care facilities' in the study area.
5) To study the pattern of 'Household Expenditure on health care' in the study area.
6) To evaluate the 'health policy' and 'health programs' of Karnataka Government; and to suggest some policy measures.

**Hypotheses**

The study proposes to test the following hypotheses:

1. Disparities in the development of Health Care Infrastructure in Karnataka are reduced over a period of time.
2. The development of Health Care Infrastructure has positive impact on the health status of the people.
3. People of far off villages from a PHC have poor access to public health facilities.
4. Higher the household income, higher is the per capita household health expenditure.

In India, the mortality rates have shown a decreasing trend. The IMR has declined from more than 200 at the time of independence to 72 and the CDR from 27 to 9. Life expectancy at birth has increased considerably. Presently it is 62.7 years for females and 62.1 years for males. The projection for the period 2001-2002 reveal that these would be 66.7 years for females, higher than that of males, 64.9 years. Among the major achievements of the country, the notable are (i) the declining trend in vaccine preventable disorders due to improvement in immunisation coverage and (ii) sincere efforts being made for eradication of poliomyelitis programme. After the successful eradication of smallpox; now Guinea worms disease is on the verge
of eradication. Leprosy has also shown a declining trend. The prevalence of leprosy has declined from 3.9/1000 in 1985 to less than 0.5/1000 by the end of the Ninth five year plan.

However Table - 1.1 show that when compared to the developed countries the mortality rates are still high in India. The mortality rates are higher in India than in Sri Lanka, a neighboring South Asian economy. [D. Chauhan, Anita Kamdar 1997 Primary Health Care in India FRCH p-98]

**Table - 1.1 Mortality rates and LEB of India and other selected countries**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>U.S.A</td>
<td>8.7</td>
<td>7</td>
<td>73.4</td>
</tr>
<tr>
<td>2.</td>
<td>U.K.</td>
<td>11.1</td>
<td>6</td>
<td>74.5</td>
</tr>
<tr>
<td>3.</td>
<td>Germany</td>
<td>10.9</td>
<td>6</td>
<td>73.4</td>
</tr>
<tr>
<td>4.</td>
<td>France</td>
<td>9.1</td>
<td>7</td>
<td>74.6</td>
</tr>
<tr>
<td>5.</td>
<td>Canada</td>
<td>7.4</td>
<td>6</td>
<td>76.1</td>
</tr>
<tr>
<td>6.</td>
<td>Japan</td>
<td>8.2</td>
<td>4</td>
<td>76.9</td>
</tr>
<tr>
<td>7.</td>
<td>Sri Lanka</td>
<td>5.9</td>
<td>15</td>
<td>70.6</td>
</tr>
<tr>
<td>8.</td>
<td>India</td>
<td>9.0</td>
<td>72</td>
<td>62.1</td>
</tr>
</tbody>
</table>

Source: Health information of India 1997 & 1998 p. 330

Though the mortality has come down, considerably, the rate of decline of mortality has not been up to the desired level. The constitution of the country, the directive principles and the national policies provide broad guidelines for mobilisation and distribution of resources in such a way as to meet the health needs of the masses. The constitutional amendments from time to time and their ratification by the state assemblies also provide
guidelines to planning and administration to direct the resources to the priority areas.

Despite of those efforts i.e. the health and related policies in India, the infectious diseases like TB, Malaria and water borne diseases like diarrhea, dysentery, gastro-enteritis, enteric fever, viral hepatitis etc., still occur in countless numbers in India. Due to the changing life styles, and increasing stress and tensions non-communicable diseases are also becoming a major health problem [Kapilashrami M. C. 2000].

1.8 Study Area and Methodology:

The Dharwad district of Karnataka State has been specifically chosen as the study area as it is convenient to the researcher. The reconstructed Dharwad district comprises of Dharwad, Hubli, Kalaghatagi, Kundagol and Naugalund talukas and occupies a geographical area of 4.73 Sq. kms. According to 1991 census, the district has 362 inhabited villages, the largest number being in Dharwad taluka (108), followed by Kalaghatugi (87) Naugalund (58), Kundgol (56) and Hubli (53).

Methodology:

Two talukas are selected for study purpose. One taluka highly developed and another least developed the logic being to know the extent of access to health care facilities, to study the health seeking behavior of the people and to study the expenditure pattern of the household on their health, at two extreme levels of development. For this purpose a composite index of development is constructed for each of five talukas. The basic data is processed to derive
comparable indicators. A percentage index for each item is worked out by keeping the average of the aggregate as 100 in each case. Then the composite index is constructed by calculating the mean value of the sum of percentage index of all the items [Dadibhavi R.V. 1986]. The basic data are given in Appendix I for Dharwad district for the year 1996-97. The indices of different items and the composite index of development for each of the talukas of Dharwad district are given in Appendix II. Thus Hubli, the highly developed taluka and Kalaghatgi the least developed talukas were selected. In each taluka six villages are selected, thus making a total of twelve villages. A village with Primary Health Center (PHC) and also nearest to the taluka headquarters is selected. Two villages one nearest to the PHC and another farthest from the PHC are selected. A second PHC village being farthest from the taluka headquarters is selected. One nearest village to the PHC and another farthest from the second PHC are selected. Thus a total of six villages from the highly developed taluka and six villages from the least developed taluka are selected. In each village a ten percent of the total house holds of the village, considered to be fairly representative, were surveyed. The households were randomly selected considering the heterogeneous nature of the rural population. However, poor, non-poor, SC and ST households were included in the survey. For categorising the households as poor and non poor, the land ownership was considered. Landless households, small and marginal farmers with less than 5 acres of land were defined as poor households.
MAP OF KARNATKA STATE
MAP OF DHARWAD DISTRICT

Source: D.S.O. Dharwad
Table: 1.2  Distribution of sample households across selected villages:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Village</th>
<th>Total Number of Households</th>
<th>Selected Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>PHC Village</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Byahatti</td>
<td>1794</td>
<td>180</td>
</tr>
<tr>
<td>2</td>
<td>Ingalalli</td>
<td>770</td>
<td>75</td>
</tr>
<tr>
<td>3</td>
<td>Mukkal</td>
<td>456</td>
<td>50</td>
</tr>
<tr>
<td>4</td>
<td>G. Hulakoppa</td>
<td>280</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Total Households</td>
<td>3300</td>
<td>335</td>
</tr>
<tr>
<td>II</td>
<td>PHC Near Village</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Sulla</td>
<td>915</td>
<td>90</td>
</tr>
<tr>
<td>2</td>
<td>Umachagi</td>
<td>284</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>Somankoppa</td>
<td>143</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>Hasarambi</td>
<td>137</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Total Households</td>
<td>1479</td>
<td>150</td>
</tr>
<tr>
<td>III</td>
<td>PHC Far off Village</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Hebsur</td>
<td>1015</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>Malligwad</td>
<td>298</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>Belavantar</td>
<td>345</td>
<td>35</td>
</tr>
<tr>
<td>4</td>
<td>Dhummawad</td>
<td>570</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>Total Households</td>
<td>2228</td>
<td>225</td>
</tr>
<tr>
<td></td>
<td>Total (I + II + III)</td>
<td>7007</td>
<td>710</td>
</tr>
</tbody>
</table>

Source: Survey Data

Sources of Data:

The study uses both primary and secondary sources of data.
**Primary Data:**

The primary data was collected from the selected households. For this purpose a structured and pre-tested schedule was used. The household questionnaire is given in appendix – III.

The reference period varies from last visit to one year. For various illness the reference period was uniformly one year and also it was the same reference period for all other information collected. The survey was conducted during October 2000.

**Secondary data:**

The secondary data were collected from the published and unpublished documents of the Directorate of Economics and Statistics, Government of Karnataka, Department of Health and Family Welfare, Government of Karnataka Bangalore, A.G’s Office Government of India, Bangalore, District Health office Dharwad, District statistical office, Dharwad and the Census Documents. The secondary data were used to measure the extent of availability of public health care facilities and their spread across the different regions of the state and district. A health infrastructure index has been prepared to compare the levels and trends in health infrastructure development across different regions of Karnataka. The Principal component Analysis is employed to prepare the index [Dadibhavi R. V. 1995]

Discussion were held with senior medical officers to understand the related medical terminology and help of health personnel working in the rural area, was sought to understand the health seeking behaviour of the rural households.
The data so collected from the survey were carefully processed and fed into computer to obtain the summary tables. The statistical tools like percentages, average, growth rates, measures of dispersion, correlation and regression are used along with tabular analysis.

1.9 Karnataka State:

With the State Reorganization Act of 1956, the present state of Karnataka (called as 'Mysore State' till 1st November 1973) came into existence on 1st November 1956. It is one of the major states in India and has a total land area of 191,791 Square kilometers. The state has 5.13% of the total population and 6% of the land area of the land area of the country. The state is divided into four administrative divisions and 27 districts. In 1997 seven new districts viz., Chamaraj Nagar, from erstwhile Mysore District, Davangere from erstwhile Chitradurga, Bellary and Shimoga Districts, Gadag and Haveri from erstwhile Dharwad District, Udupi from erstwhile Dakshina District, and Koppal from erstwhile Raichur District were created. Geographically, Karnataka can be divided into four regions, namely Coastal, Malnad, Northen Maidan and Southern Maidan. Every region has distinct social, economic and cultural characteristics.

According to 2001 Census, Karnataka has 52,733,958 population and density 275, the combined literacy rate is 67.04% the female literacy rate being 57.45% and male literacy rate 76.29% [Census of India 2001. Provisional population Totals Karnataka Series –30 paper of 2001]. Karnataka is predominantly an
agricultural state with 69% of the population living in rural areas. However, the importance of the agricultural sector has declined over time. The contribution of the agricultural sector to the state domestic product decline from 43% in 1980-81 to 33% in 1996-97. During the same period the share of the manufacturing sector increased from 14% to 18% and the contribution of other sector increased from 43% to 49% [EPW Research Foundation, 1998] Karnataka grows both Kharif and Rabi crops and the major agricultural products include rice, ragi and jawar. Among other crops groundnut, sugarcane and cotton are important. As per the estimates given by the Planing Commission for 1993-94, 30% of the rural population and 40% of the urban population were below the poverty line.

Table – 1.3 reveals that, for 1997, the SRS estimated the infant mortality rate in Karnataka 53 per 1000 live births, which is much lower than the rate of 71 for all India. For 1991-95, life expectancy is 62.5 years in Karnataka, which is higher than 60.3 years for all India.
**Table 1.3**: Inter State Comparisons of mortality rates and the Life Expectancy at Birth.

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Andhra Pradesh</td>
<td>8.3</td>
<td>9.1</td>
<td>5.9</td>
</tr>
<tr>
<td>2</td>
<td>Assam</td>
<td>9.9</td>
<td>10.3</td>
<td>5.9</td>
</tr>
<tr>
<td>3</td>
<td>Bihar</td>
<td>10.0</td>
<td>10.4</td>
<td>6.8</td>
</tr>
<tr>
<td>4</td>
<td>Gujarat</td>
<td>7.6</td>
<td>8.3</td>
<td>6.2</td>
</tr>
<tr>
<td>5</td>
<td>Harayana</td>
<td>8.0</td>
<td>8.3</td>
<td>6.9</td>
</tr>
<tr>
<td>6</td>
<td>Karnataka</td>
<td>7.6</td>
<td>8.5</td>
<td>5.4</td>
</tr>
<tr>
<td>7</td>
<td>Kerala</td>
<td>6.2</td>
<td>6.3</td>
<td>6.1</td>
</tr>
<tr>
<td>8</td>
<td>Madhya Pradesh</td>
<td>11.0</td>
<td>11.7</td>
<td>7.7</td>
</tr>
<tr>
<td>9</td>
<td>Maharashtra</td>
<td>7.3</td>
<td>8.6</td>
<td>5.4</td>
</tr>
<tr>
<td>10</td>
<td>Orissa</td>
<td>10.9</td>
<td>11.3</td>
<td>7.5</td>
</tr>
<tr>
<td>11</td>
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<td>7.4</td>
<td>7.8</td>
<td>6.1</td>
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<td>Rajasthan</td>
<td>8.9</td>
<td>9.3</td>
<td>7.0</td>
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<tr>
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<td>8.0</td>
<td>8.7</td>
<td>6.7</td>
</tr>
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<td>10.7</td>
<td>8.8</td>
</tr>
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<td>7.7</td>
<td>7.9</td>
<td>7.2</td>
</tr>
<tr>
<td>India</td>
<td></td>
<td>8.9</td>
<td>9.6</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Source: Cols: 3 to 7 SRS Bulletin October - 98 (RGI)

Col: 8: Life Tables : 1991-95 RGI

**1.10 Chapter scheme:**

The study is divided into six chapters, including the present one. The Second Chapter discusses the level of health infrastructure development. Chapter Three deals with 'Access to
Health care Facilities and also examines the extent of accessibility of public health care facilities in the study area. Chapter Four discusses 'the health care expenditure'. It examines the trend in public expenditure in India and Karnataka, and also makes study of the household health care expenditure in the study area. Chapter Five attempts to evaluate public health policies and programs in India and in Karnataka over a period of time. The concluding chapter includes the summary of findings and policy suggestions.
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*N.F.H.S. - I.* [1992-93]: and *N.F.H.S. - II* [1998-99]


Geneva.

### Appendix - I: Basic Data for constructing a Development Index for Dharwad District 1996-97 (Talukawise)

<table>
<thead>
<tr>
<th>SL No.</th>
<th>Taluka</th>
<th>Population 1991 Census</th>
<th>Area sq. kms.</th>
<th>Total Gross Area (hects)</th>
<th>Gross cropped area (hects)</th>
<th>N.S.A (hects)</th>
<th>N.I.A (hects)</th>
<th>Total Workers</th>
<th>Total Non Agri Workers</th>
<th>Total Literates</th>
<th>Road Length (kms.)</th>
<th>Post Offices</th>
<th>PHC's</th>
<th>Comm. Banks</th>
<th>Primary Schools</th>
<th>Colleges</th>
<th>Registered Vehicles</th>
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<tbody>
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<td>1</td>
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<td>111788</td>
<td>38000</td>
<td>79978</td>
<td>4455</td>
<td>81500</td>
<td>10427</td>
<td>66229</td>
<td>661</td>
<td>69</td>
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<td>152</td>
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<tr>
<td>2</td>
<td>Hubli</td>
<td>513085</td>
<td>113085</td>
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<td>31000</td>
<td>54138</td>
<td>50400</td>
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<td>121248</td>
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<td>68757</td>
<td>13000</td>
<td>39325</td>
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<td>648</td>
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<td>116794</td>
<td>1080</td>
<td>108218</td>
<td>35000</td>
<td>97661</td>
<td>26357</td>
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<td>5</td>
<td>16</td>
<td>102</td>
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<td>652726</td>
<td>4073</td>
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<td>170000</td>
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<td>2326</td>
<td>214</td>
<td>28</td>
<td>160</td>
<td>773</td>
<td>105193</td>
</tr>
</tbody>
</table>

Source: D. S. O. Dharwad
## Appendix – II: Various indices for the level of economic development in Dharwad District 1996–97

| SL No. | Taluka       | N.S.A as % of Tot. Gr. Area | N.I.A as % of N.S.A. | Workers Participation Ratio | Degree of Urbanization | Literacy Rate | Primary Schools per 1000 Population | Colleges per 1000 Population | Road length per 100 sq. km. | Registered Vehicles per 1000 Population | Post Office per 1000 Population | PHC’S per 1000 Population | Commercial banks per 1000 population | Sum of % Index | Mean Value | Rank |
|--------|--------------|-----------------------------|----------------------|---------------------------|--------------------------|-----------------------|--------------------------|-------------------------------|-------------------------------|-----------------------------|----------------------------------|-------------------------------|-------------------------------|----------------------------------|------------------|-------------|------|
| 1      | Dharwad      | 71.54                       | 5.57                 | 0.42                      | 0.60                     | 15.01                 | 0.35                     | 0.06                          | 54.05                         | 78.09                       | 0.16                             | 0.02                           | 0.11                           | 1082.67                        | 90.22            | 4          | 4    |
| 2      | Hubli        | 73.45                       | 6.74                 | 0.45                      | 0.78                     | 10.09                 | 0.65                     | 0.09                          | 69.41                         | 114.68                      | 0.10                             | 0.10                           | 0.14                           | 1648.19                        | 137.34           | 1          | 1    |
| 3      | Kalghatgi    | 57.19                       | 12.37                | 0.44                      | 0.06                     | 33.52                 | 0.36                     | 0.05                          | 52.19                         | 12.00                       | 0.13                             | 0.04                           | 0.10                           | 1987.63                        | 88.96            | 5          | 5    |
| 4      | Kundagol     | 94.61                       | 0.33                 | 0.45                      | 0.11                     | 41.28                 | 0.62                     | 0.07                          | 63.27                         | 27.61                       | 0.20                             | 0.04                           | 0.08                           | 1229.40                        | 102.45           | 3          | 3    |
| 5      | Navalgund    | 90.24                       | 25.98                | 0.46                      | 0.28                     | 33.65                 | 0.63                     | 0.04                          | 38.52                         | 36.16                       | 0.24                             | 0.03                           | 0.10                           | 1345.03                        | 112.08           | 2          | 2    |
| Total  |              | 77.80                       | 12.37                | 0.44                      | 0.53                     | 18.72                 | 0.56                     | 0.07                          | 57.11                         | 76.05                       | 0.15                             | 0.02                           | 0.12                           | 1385.57                        |                  |             |      |

Source: Basic Data Appendix - I
Note: Figures in brackets are % index