CHAPTER III

REVIEW OF THE RELATED LITERATURE
CHAPTER III

THEORETICAL AND EMPIRICAL REVIEW

3.0 INTRODUCTION

To understand the issues involved in the study, a theoretical framework is needed which can be discussed in this chapter. This part of the study is also devoted to present reviews of empirical studies related to human capital approach of health and utilization of health care services.

3.1. THEORETICAL BACKGROUND:

Early economic theory related to variations in health to starvation. According to the Malthusian theory of population (1798), income fluctuated around a subsistence level. Any temporary increases in income would reduce the rates of mortality by improving Nutritional and Health Standards. In modern developed economy per capita income far exceeds a subsistence level at least for larger majority of the population. Feldstein (1966) advocates the use of demographic characters like age, education, and health to measure perception and attitudes.

The concept that investment in human capital promoted economic growth actually dates back to the time of Adam Smith and the early classical economists, who emphasized the importance of investment in human skills.

Schultz (1980) is a fundamental contributor to the analysis of the economics of the population quality including its implications for policy throughout the world. Economic productivity and human well-being are vitally related in the poor countries as well as in the rich ones. Prof. Schultz demonstrates that a decisive factor in securing human well-being is investment in people and knowledge. He shows that the acquired abilities of people, their education, experience, health, and skills are basic in achieving economic progress. The decisive
factors of production in improving the welfare of poor people are not space, energy and cropland, but the improvement in population quality and advances in knowledge.

Investment in improving population quality can significantly enhance the economic prospects and welfare of the poor people. Childcare, home and work experience, the acquisition of information and skills through schooling, and other investments in health and schooling can improve population quality.

"Human-Capital theory treats everyone's state of health as a stock i.e. as health capital and its contribution as health services". Part of the quality of the initial stock is inherited and part is acquired. The stock depreciates overtime and at an increasing rate in later life. Gross investment in human capital entails acquisition and maintenance cost, including child-care, nutrition, clothing, housing, medical services and care of oneself. The service that health capital renders consist of "healthy time" or "sickness-free time" which contributes to work, consumption and leisure activities.

According to the 'Downward Filtration Theory', the improvement in health and education will gradually but automatically trickle down from the upper and middle classes often tend to maintain their position and continue to exploit the poor. General health improvement has tended to increase worker productivity and thus contribute to economic growth.

Demographic Transition Theory states that the population development of both developed and developing countries take place in different stages depending on the fertility and mortality behaviour. Usher's extension of economic theory (1978)\(^5\), attempted to determine the utility that people derive from increase in the life expectancy. His empirical analysis indicates that the additional utility increases substantially the value of personal income.
There is an assumption that the welfare of each member of the family is integrated with a unified family welfare function. In this model shadow price is given a role. In that both time and goods shadow price is recognized many studies has been given by Birdsall (1982). In addition to money and time cost, environmental variables also play a role in the household in the production of goods and investments in health and education. In recent years it has been recognized that expenditures on medical services, nutrition, and exercise can be viewed as investments in health capital and analyzed using the tools of capital theory. This approach has enabled economists to derive proportions about the pattern of medical expenditures over an individual's lifetime and to describe the behaviour of health capital over the life cycle. Individuals desire to increase their stock of health capital in order to decrease the probability of illness. This is because an individual, when ill, receives no utility from consumption; hence investment in health increases expected utility of consumption.6

Different forms of deprivation are causing immense suffering to human beings. One may speak in terms of deprivation from education, health, longevity of life, enjoyment of a decent environment of living, economic capability etc. One can also imagine and point out difference other forms of deprivation such as social, political, environmental, and regional, etc.

3.2. REVIEW OF EMPIRICAL STUDIES

This section attempts to review the major empirical works so far made regarding the utilization of health (demand for health), willingness to pay for the public services (user charge), family planning, immunization, etc.

Brightman and his associates 7 had conducted a study in the city of Syrawse, New York to find the public health and preventive medical resources. They had compared the utilization of health check up services of a public assistance group, a low-income group and a middle-income group. The analysis of the data showed that the middle-income group better utilized the health
supervision care than the other two lower income groups. Almost all middle-income group members took routine chest x-rays regularly, but only a few public assistance group and low-income groups members did so. This wide gap in their utilization of health supervision care showed that the middle-income group perceived the need for health check up better than the other two income groups. He also found that public assistance group and low-income groups utilized the immunization clinics more frequently than middle-income group. The middle-income groups have gone to private clinics for immunization.

Herbert Notkin (1958) and his associates conducted a study on the utilization pattern of three income groups in the city of Syrawse, New York. Here the utilization pattern of public assistance recipient group was compared with two non-recipient groups, one low-income group and middle-income group. The data showed that the middle-income group better utilized the health supervision and maternal care. A majority of the middle-income group households had family physician, whereas only one third of the assistance group had family physician. Similarly the figures on total number of visits per 100 persons in the survey group too showed a similar picture when private and clinic visits are separated. The middle-income group utilized the private sources of medical care more than twice as often as the public assistance. His study report also showed that the number of house holds having a family doctor increased with economic status. Sixty-nine percent of middle-income group, 66% of low-income group and 29% of public assistance group had family doctors.

Rao (1961) explained that the health of Indian people depends on three main factors namely; the standard of life, the standard of education and the organization of public health services. He felt that the aim should be organization of a comprehensive health service to meet the needs of the people. All the health workers, whether governmental, voluntary or private, should work for a common objective, namely, the health and well being of the nation. The
department of public health and medicine should form a single unitary agency and function with the cooperation of advance of this objective.

Oliver W. Anderson's (1963)\(^{10}\) analysis of health statistics of United States showed that women utilized all sorts of health services including surgery more than men. He had analyzed the health statistics of the United State and found that general hospital admissions rate was positively correlated with family income, i.e. the lower the income the lower the rate. His study also observed in his study in the United States that lower the income, the lower was the absolute medical expenditure, but higher was the percentage of income laid out in a year.

Ann Cartwright (1964)\(^{11}\) in her study comparing the utilization of health services of different social classes observed that the working class was not satisfied with the information about their illness given by the health personnel. The study also conducted, on the utilization of hospital services by different social classes showed that the middle class patients were less enthusiastic and more critical of nurses than the working class patients. The data further revealed that the professional group in the middle class complained of lack of privacy and wanted more curtains and screens. Such complaints were least among the semi-skilled and unskilled members of the working class. In her study on the hospital services in England and Wales, her data showed that the working class was more likely to receive help from their relatives than were more the middle class. For both the classes relatives were the major source of help, and mostly help came from housewife's family rather than husband's family. The usual assistance received by the working class from their relatives was help with shopping, housework and the care of children.

Marvin Belkin and his colleague's (1964)\(^{12}\) analyses the service offered by the child health station in the city of New York. Their data showed that on the whole mothers, who were older, less educated and having lower income showed a more favorable picture of the
physician and the child health conference than the mothers with higher education, younger age and higher income. Suchman (1965) ¹³ found that medical orientation was low for the less educated, and hence they might not seek modern medicine for their illness.

Gerald, D. Rosenthal (1965) ¹⁴ says that characteristic of the population such as age, sex and marital status, which affect the population physiological requirements for medical care, would influence the utilization of health services. He found a strong positive correlation between education variable, and hospital admission rate and the length of stay in the hospital. In his study he further found that Hospital admission rate increased with the increase of age.

Rodney. M. Coe and Albert Wessen ¹⁵ (1965) found in their study that those who had Health Insurance policies utilized the health services more than those with out, insurance policies. It was found in their study that the rates of utilization of health services were greater for females than males. Both the studies clearly showed the impact of sex on utilization. They observed that the better educated did not delay in seeking treatment, whereas the poorly educated often delayed and postponed th treatment till the illness became serious.

The study conducted by Jerry A. Solan ¹⁶ (1966) in an outpatient department of Beth Israel Hospital at Boston showed that older-age group utilized the department more than the younger age group. Nolon ¹⁷ and his associates conducted a study in the Kaiser foundation Hospital at Oakland to find whether the removal of economic barrier through prepayment for health services would bring forth equal utilization of health services. He analyzed the utilization of pediatric services between social classes showed that 60 percent of the visits to the doctor made by social class II patients were for health supervision, and that 48 percent of the visits by social class I patients were also for health supervision. Among the other three lower social classes III, IV, V there was a dip in visits for health supervision.
Becker (1967) study reveals that within the new framework for examining consumer behavior, the commodity good health is created as a durable item. This treatment is adopted because ‘health capital’ is one component of human capital and the latter has been treated as a stock in the literature on investment to the human beings.

Anselm (1969) observes that health problems are just one crisis among many that the lower income group members must try to cope with, control or just live with. They learn to live with illness rather than using their small stock of financial resources and are more inclined to accept ailment fatalistically or as natural to living and aging. He further notices that the problems of daily existence tend to minimize the problem of illness so that symptoms, which do not incapacitate them, are often ignored. This clearly shows the extensive influence of low income on one's perception of health disease and the need for medical care.

Alderson (1970) reported on seven separate examples of inequalities in the use of health services by social class. He found that with the respect to mass radiography, cervical screening, pregnancy and infant care, dental treatment, breast operations and hospital referrals, use in relation to need was highest among social classes I and II and the lowest among IV and V. He concluded that the data presented are compatible with the hypothesis that there is a group in the community who are aware of the provisions of the health service and who obtain a higher proportion of the resources of the health service than would be expected by chance, and a much higher proportion in relations to their needs when compared with others in the community. He also reported on seven separate examples of inequalities in the use of health services by social class.

Meltzer and Hochstim (1970) used a sample of Californian households to compare clinical records with household survey data. They found that only 54 percent of chronic conditions reported in the survey appeared in the clinical records of these households.
According to Khan (1979)\textsuperscript{22} 87 percent of the malnourished children in India (Punjab) had illiterate mothers. Even in Nepal, one notes that the average years of schooling of mothers whose children were nourished was only 0.3, compared to two years of schooling mother of well-nourished children. The malnourished children's father had higher levels of schooling, four years of schooling yet the children were found to be malnourished. In Bangladesh wife's literacy increases the number of child survivals by 0.15.

A Scottish Home and Health Department study (1973)\textsuperscript{23} using the Registrar General's Classification of social classes found that there was a gradient across classes in the average amount of time a GP spends per consultation, ranging from 6.1 minutes for social class I to 4.4 minutes for social class V.

Mandakini Khandekar\textsuperscript{24} (1974) had conducted a study in the city of Bombay to differentiate the utilization pattern of health services between low-income group and the middle-income group. Her study was restricted to maternal and child health services. Though she found that middle income group had better knowledge of health service and utilized the health services better than the low income group, she did not come to the conclusion that income was the sole factor in determining such a pattern of utilization of health services. She has analyzed the role of age, family size, education and occupation with income groups and she found that they too played a role in the utilization pattern of the health services. The perception of the need for services offered by maternal and child health centers were positively correlated with education with in each income group. His study among the middle and low income groups revealed that white-collar workers in the low income group better utilized health services than the blue-collar workers of the low income group. His study also on the utilization of maternal and child health service among the middle and low income groups in the city of Bombay showed that the with in each income group education had an impact on the
utilization of various health services. Among the lower income group the more educated ones utilized the services better than other members in the same group. In the middle-income group also the better-educated members utilized services better than other income group members. Among the low-income group, those who paid for health services were the better educated. 1

Cartwright, and O'Brien (1976) 25 concluded from their study that, general practitioners knew more about the domestic situation of their Middle class patients. Although working-class patients had been with them for longer time and discussed more problems and spent longer time in conversation with the doctor. They may also ask more questions and give more information. His study renders conclusive evidence that the middleclass make more use of preventative services. There is also enough evidence to suggest that the middleclass may in relation to a number of services receive better care. 2

Forster (1976) 26 has standardized the GHS data for age and sex. It would seen that differences in the age and sex composition of the various groups do have a significant effect in determining the differences in reported limiting long-standing illness. His study, using GHS data on morbidity and in GP consultation rates, devised “use to need” ratios and showed that these decreased between socio-economic groups I and IV.

Earthrowl and Stacey 27 (1977) analyzed the health services provided in Welsh hospital for children of different social classes. The items of expenditures arising out of a child’s hospitalization were transportation, clothing, toys, food and drink. The data indicated that only on insignificant proportion of higher social classes had problems of transportation, whereas a good number of lower classes had difficulties in paying for transportation to the hospital. Expenditure on other items like clothing, toys, food and drink did not show any difference between social classes. Athreya 28 (1978) pointed out that the demands on the hospitals are
constantly increasing whereas the facilities remain stringent or do not correspond to the increasing demands and that they are starving for funds.

Julian Le Grand (1978) study showed the differences in the utilization of the Health Services by those reporting illness within each group. He explained with an algebraic example.

Suppose \( h_{ij} \) denotes the number of persons in the 'i'th socio-economic group reporting that they suffered from the 'j'th condition. Let \( x_{ij} \) denote the number of units of health service utilization by the 'i'th socio-economic group for the 'j'th condition, and \( C_j \) the cost to the Health Service per unit of utilization for that condition (assumed to be the same for all socio-economic groups). Then the total public expenditure per person reporting ill for the 'i'th socio-economic group is

\[
\frac{\sum_j C_j x_{ij}}{\sum_j h_{ij}}
\]

Now suppose we write the numbers of units of utilization as a proportion of the number of persons reporting illness, i.e.

\[
X_{ij} = k_{ij} h_{ij}
\]

Where \( k_{ij} \) is the number of units of health service utilization per person in the 'i'th SEG reporting the 'j'th condition. Then the total public expenditure per person reporting ill in

\[
\frac{\sum_j C_j k_{ij} (h_{ij})}{\sum_j h_{ij}}
\]

The main hypothesis is that there is more sickness in almost every category among the lower socio-economic groups. In England and Wales, there appears to have existed some, possibly substantial inequality in Health care expenditure per person reporting ill between socioeconomic groups. Ram and Schultz's (1979) study concluded the life expectancy and
utilization of health care services in Indian condition, life expectancy increased from 1951 to 1971.

Hicks (1980)\(^1\) analysed the relationship between literacy and economic growth in 83 countries for the period 1960-1977 and found that an average increase in the literacy rate by 20 percent is associated with 0.5 percent higher growth rate. Hicks further noted that only those economies are rapidly growing that had above average levels of performance in literacy and life expectancy. Sethi\(^2\) (1980) identified the problem areas in the sphere of health as low priority for health consciousness, the poor made to pay for the rich, inequitous health structure and insignificant global commitments. He advocated for decentralized health care and national focus for health programmes. According to Krishnan (1976)\(^3\), even with out significant improvement in industrialization, urbanization and improvement in the standard of living of the people fertility reduction can take place with social developments.

Murali Manohar and Rameshwaram\(^4\) (1981) pointed out that the reasons for the medics not to serve in the rural areas because of their urban culture and commended utilization of indigenous medical facilities and their integration with modern medicine. They advocated for appointment of village health workers on the lines of the Chinese bare foot doctors.

Yesudian\(^5\) (1984) exposed the factors responsible for the poor health status of metropolitan’s cities inspite of spending large amount on health services. He stated that so long as proper planning, organizing and distribution of services do not be any improvement in the situation.

Banerji\(^6\) (1985) gave less emphasis on the role of ecological, social, cultural, political and economic factors in shaping the health care system of the country. He says that vast sum of public funds are spent in establishing expensive and sophisticated hospitals in cities to serve
mainly the privileged classes. Again a disproportionately large segment of the limited resource that are left for preventive services are spent for urban population. He criticizes that existing approaches to the formulation of health strategies in India and gives suggestion for alternative health strategies even with in the existing constraints.

Meera Chatterjee37 (1988) points out that while the framing of a national health policy statement suggests that the ideal of “Health for all” is exposed at the national level, the commitment of the states to implanting this policy may vary widely as it has in the past.

Yesudian, C.A.K (1988)38 conducted a study in Chennai regarding the utilization of government hospitals. Out of 400 sample households he found that 275 households utilized the government general hospital services during the last five years. All the low and very low class households had gone to the general hospital during the last five years. The number of households utilized the government hospital increased with the fall of social class position. And on the whole, the knowledge of departments in the general hospital increased sharply with the rise of social class position. The utilization of the Government health Services by the low and very low classes would be restricted to the outpatient and other few departments. This poor knowledge of the low and very low class respondents might be attributed to their poor educational status. He found that it is not the occupation that is responsible for the perception, but the educational level, that is attached to every occupation influences the perception. Generally blue-collar workers are less educated and hence their ability to perceive their health needs is poor. So he concludes that occupation does not play a vital role in perceiving the health needs. But the occupation can be directly related to ones capacity to consume the health services.

Ravi Duggal39 (1989) after conducting a research study in six villages of Jalgon district and six wards (including two slums) of Jalgon city came to the conclusion that the private
doctor and hospital is the biggest provider of health services in India. His study made the following findings:

1. The private health care services divert a major share of the expendable resources of the people.

2. The government health services also cost a considerable amount.

3. The people using government health service spend twice as much on transport as compared to those using private services, and

4. The amount spent by people on treating their illness is three and half a time more than and in addition to what the government (including municipal bodies) spends.

Duggal and Amin(1989) made a household survey regarding the health status in Jalagaon District of Maharashtra. They found that, i) female suffer higher morbidity than males, ii) the rates are the highest for age group of 60 years and above followed by under 5 years , and iii) the rate of incidence increases uniformly as income level rises. The findings noted above include both rural and urban population.

NCAER (1991) conducted a study to examine the impact of the Indra Gandhi Nahar Project on the health status of the people living in villages under its command area in the three districts of Rajasthan, namely, Ganga Nagar, Bikaner and Jaisalmer. The study focused on the incidence of diseases and their treatment. The study shows that the incidence of water-borne diseases as a proportion of total illness episodes does not increase with higher irrigation development. It is found that nutritional status of the population also has not improved with increase prosperity associated with irrigation. Even in remote rural areas of IGNP the allopathic system of treatment is the most sought after. About 87 percent of reported illness episodes were treated with the allopathic system. This is greater than average level of about 75 percent of all India level estimated in another recent study by NCAER. The use of Public
Health care system for treatment of diseases shows a declining trend with the rise in the prosperity of a region. The survey indicates that only 25 and 15 percent of women are given TT vaccination and special diet during pregnancy. The coverage of children under Universal Immunization Program is estimated to be only 50 percent.

Shiva Reddy's (1991) study examines issues associated with financing of education and health services in India. The primary objective of the study was to analyze the financial aspects of education and health. He found that the increase in finances available to the education and health sector is much less than what should be, namely six percent of gross national product as recommended by the Committee on Health. The available finances are inadequate in meeting and improving the minimum education and health needs.

Cropper (1991) studies relate the investment and demand for health by two models. In the first model the demand for preventive medical care (checkups, dietary, supplements, etc) is derived from the more basic demand for health capital. He found that 'individual desire to increase their stock of health capital in order to decrease the probability of illness', this is because an individual, when ill receives no utility from consumption, and hence investment in health increases expected utility function.

Culyer's study in England and Wales in 1972 there appears to have existed some, possibly sustained inequality in Health care expenditure per person reporting ill between socioeconomic groups. He also developed a model to analyze the demand for the commodity of good health

\[ U = U (\psi_0 H_0, \psi_i H_i, Z_0, Z_n) \]

Where

- \( H_0 \) is the inherited stock of health,
- \( H_i \) is the stock of health in the \( i \)th time period,
- \( \psi_i \) is the service flow per unit of stock,
\( H_i - \phi_i H_i \) is total consumption of health services and \( Z_i \) is total consumption of another commodity in the \( i \) th period.

Shashanka Bhide (1991)\(^{15} \) study examined the health status of people in the command area of Indra Gandhi Nahar Project in Rajasthan. The study is based on a sample survey of the households in the region. The main objective of this paper is to present the main result of the survey of households in the command area. The paper broadly reviews: i) the incidence of diseases in the command area, ii) type of treatment availed by the households, and iii) expenditure incurred by households on treatment of ailments. The results show that there are vulnerable segments in the population where incidence of diseases more than in other segments. The lowest income group have higher incidence of diseases than the middle-income category. The allopathic system of medicine is most commonly used in the command area.

Andrew Green (1992)\(^{26} \) explain the equity concepts in health such as i) equal health, ii) equal accessed health care, iii) equal utilization of health care, iv) equal access to health cares according to need and v) equal utilization of health care according to need. Among these he given the importance of social justice in a concept of equity. It is found that there is higher health service unit cost associated with the young and the old. The antenatal, obstetric and under five age groups are all relatively heavy users of health care, as are the elderly, with their higher incidence rates of chronic illness.

The 42\(^{nd} \) round of the National Sample Survey (1992)\(^{47} \) was devoted mainly to an enquiry on social consumption. The object was to make an assessment of the benefits derived by various sections of the society from public expenditure incurred by the government particularly in the areas of education, public distribution and health care. With this view an integrated survey on Maternity, Child care, Family planning, Utilisation of Public Distribution System, Education and Utilisation of Medical services was conducted during July 1986-
The report provided the result of the survey on Utilisation of Medical Services. The sampling procedure adopted for the survey was a two-stage stratified design. The first stage units were villages in the rural sector and urban blocks in the urban sector while the second stage units were households in both the sectors. The survey was conducted in a sample of 8346 villages and 4568 urban blocks. The survey results showed that on an average about 149 lakh persons were hospitalized in rural India and 26 lakh in urban India in a period of 365 days (Jul 1986-Jun 1987).

Rita Sapru (1992) study reveals the intersectoral partnership for health information, education and communication at the community level will materialize only with the closer inter-departmental collaboration and cooperation at all administrative levels involving exchange of information and coordination for the purpose. The ultimate determinant of developing people to develop themselves will therefore be the pace at which we decentralize decision making powers to organs of local self government both in rural and urban areas.

Tilak (1992) study analyzed the role of education in improving health, nutrition, and in influencing fertility and growth of population, some of which are described in the literature under the broad framework of basic needs, and he describes the role of education in basic needs framework and, analyzing the role of education in improvement of health and nutritional standards of the population and child survival. He also concentrated on fertility and growth of population. He quotes that, provision of health services may not necessarily improve the health of the people, unless people are provided with relevant education and understanding of the services provided. All this in addition to education forming a necessary condition for development program's to take off. He found that education has the major role in the eradication of both under nourishment and preventable morbidity. Wide spread elementary education leads to greater utilization of public health services. The effect of education on
fertility and population growth is also found to be quite significant. Female literacy is found to have a more important effect on child survival and health conditions.

Satia (1993) study suggest that for sustainable population, health and nutrition services, it is necessary to have the following steps: i) provide effective service delivery consisting of village level parents, appropriate structure of health services and suitably located health facilities; ii) have a sound organizational base through rationalized responsibilities and committed middle level management; iii) create people orientation among service providers by work programming, in-service training, supportive supervision, coverage oriented monitoring systems, and functioning logistic support; iv) pay attention to demand creation of activities through understanding beneficiary needs, offering appropriate mix of services, sensitization of the community through social marketing and; v) develop strong community linkages through a mix of community volunteers, special groups, and village health committees.

Mathur (1993) attempted to relate stock of human capital with the process of economic development in India. He observed that at disaggregated level, the interdistrict inequality is much greater in terms of higher order components of the human capital stock. Wishwakarman’s (1993) study highlighted the problem affecting urban health care resulting in inequalities in provision and utilization of primary health care services. Arguing for planning for healthy cities as a goal of synodrised urban, health and environmental policy, he provided information on current thinking on the theme both at the national and international level. He showed the several inequalities in our health system, they are: i) it is very largely curative and clinical and not promotive and preventive, surveillance and improvement of the health status have received a very low priority, ii) within the curative and clinical preoccupation, the emphasis is on quantitative jumps in the number of institutions, equipment and personnel unsuited to the means of the largest number, not seeking improvement in the
quality of the services to make them more sustainable and responsive to the needs of the population which they cannot afford to pay, and iii) a large part of the limited government expenditure on health sector goes towards maintaining expensive, well equipped hospitals manned by highly trained personnel. A large number of people living in rural areas and urban slums do not get sufficient attention from these.

Manonmoney (1991) studied the determinants of health status of Tamilnadu state in terms of three indicators, namely, Crude Birth Rate (CBR), Crude Death Rate (CDR) and Infant mortality Rate (IMR). She used per capita income and public health expenditure at constant price; number of hospitals, dispensaries, primary health centers and bed strength per million-population. She has used time series data for Tamilnadu for ten years between 1981-82 and 1990-91. The study concluded that (i) Services of primary health center has been important in reducing the infant mortality rate and

(ii) Per capita income of people in the state and over all social development schemes improve the health status.

Reddy and Selvaraju (1994) studied the determinants of health status of India in terms of Life Expectancy at Birth by using the data for 15 major states in India for 1990-1991. They hypothesized that LEB was associated with per capita income, per capita health care expenditure, female literacy and percentage of people below the poverty line. Using stepwise regression, data was analyzed. The findings of the study were (i). The effect of income and female literacy on health were positive and significant and (ii). Health care expenditure and income distribution did not have significant influence on health status.

Abusaleh Shariff (1995) studied the determinants of morbidity using the NCAER national level household level survey 1993 data consisting of various aspects of health care utilization like health expenditures, incidence of morbidity and various socio economic
characteristic of the households. By using a multivariate analysis made, the author made four types of estimates viz. (i) incidence of sickness, (ii) by reducing the household level data into a set of individual records and a reduce form multivariate model was used to determine the extent to which individual attributes explain morbidity, (iii) relative risk of morbidity, (iv) determinants of hospital treatment and (v) determinants of the choice of the type of treatment used. As the study was based on household level data the findings tried to explain the role of household income variables based on region and sex. The study concluded that India’s original health transition appeared to be at a stage in which the individual level variables showed a considerable influence on morbidity.

Ghanshyam Shah (1995) study concentrates the health status of Gujarat. In 1994-95 the state allocated merely 2.16 percent of its budget for health. Its expenditure on hospitals and dispensaries per capita has remained lower than the national average since 1961. Its capital expenditure on health is also extremely low and the lowest among all the states and most of the union territories. He found that the public health facilities, managed by the Government are inadequate, weak and inefficient. People have no faith in them: only 13 percent used public hospitals.

Hitesh Gupta (1995) study was about the health care delivery system in Dausa in Jaipur district showed that the condition of the health care delivery system was pathetic. Service delivery was adversely affected due to poor planning and lack of co-ordination at different levels.

Mukerji (1995) study reveals the impact of health and family planning on population transition. He has chosen three variables related to growth of population, five variables related to mother and child health, and four variables related to the acceptance of family planning, i.e., a total of twelve variables have been used to study the effect of later nine variables on
population growth. The main objective of this study were to examine the relationship between mother and child health, health and population growth control through family planning. A major finding was that a poor mother or child health situation along with the higher acceptance of family planning is possible. It can be seen that Jhansi District in Uttar Pradesh had low levels of antenatal care and safe birth practices and low child immunization status. Ghaziabad in Uttar Pradesh had poor antenatal care, safe child birth practice and child immunization but relatively low.

Ravi Duggal, Sunil Nandraj, Asha Vadair (1995) study analyses the Health expenditure across the states. They found that, the better-developed states like Goa, Haryana, Karnataka, Maharashtra, Gujarat, Punjab have a higher per capita expenditure as compared to states of Bihar, Rajasthan, Orissa and Madhya Pradesh. Kerala, in spite of it being a lower level of the socio-economic development scale has a higher spending on health. They also found the expenditures on disease programs as percent of health expenditure across various states shows a declining trend. On an average health administration constitutes 9 percent of the total health expenditure. The major expenditure is on the production of doctors and nurses, with the former being given more importance. Compared to other states, expenditure in Tamil Nadu, West Bengal, Karnataka, Kerala, Maharashtra and U.P along with union government has been high.

Satyasekhar (1995) study examined the relative levels of utilization of health facilities both all India and across states. He pointed out that the methodological anomaly of comprising the NSSO survey and NCAER study which are non-comparable, because the NSSO study provides data only on the incidence of morbidity where as the NCAER study covers prevalence of morbidity and it is well documented in literature that the prevalence rate are significantly higher than the incidence rate.
Yousefi (1995) highlighted the importance of education in improving quality and quantity of human capital or for the provision of efficient decision makers, managers, skilled labour and technicians for industrial development of Iran.

Aikara (1996) study explains the realities of human society are inequality. It has existed in some form or other in all societies. Inequalities mean that certain individuals or groups in a society are in a relatively disadvantageous situation with regard to the access to and possession of various societal resources such as wealth, power, education, health and occupation. There is worldwide concern over inequality. As a result various measures have been taken up by different societies to deal with the phenomenon of inequality.

Bhattacharjee (1996) analysis showed that the Nation has experienced a substantial improvement in both economic and social front along with the demographic changes overtime. Level of socio and economic development are linked directly with overall development. The contribution of social development in declining birth rate and death rate is relatively higher as compared with economic development. Mahbub Ul Haq (1997) study points out that the assessment of the percentage figure of population covered by health care as reported by the UNDP is not a reliable figure as it measures only physical distances from the nearest health center/hospital. But such a distance fails to reveal any information about the actual facilities available for health care and also the quality of such services.

A study sponsored by Indian Council of Medical Research (1998) to monitor reasons for under utilization of health services, concluded that the National health Education Plan (NHEP) has failed to impart correct knowledge about protection against various infectious diseases. This study, conducted by Operational research group (ORG), cites factors like non-availability of proper medicines, bad behavior of workers, long waiting hours at
primary Health Centers, illegal private practice and low morale of medical staff as reasons for the failure of NHEP.

Basibi Bhattacharya (1998) study analyzed the design of West Bengal economy in terms of human development. The human development across West Bengal districts vary sharply and are more in favors of urbanized regions, broadly focused on the overall being. Human development presently assumes importance as several recent studies reveal that income alone is not always a satisfactory measure of welfare, where as human development takes account of income as well as quality of life factors such as health, education, etc. The level of human development of a region reveals how the income is put to use and how people actually live. Emmel (1998) argued that the WHO has adopted a strategy of selective in vertical disease control. Efficiency has been emphasized at the expense of equity. Cost benefit has become the criteria upon which decision about health is made.

Reddy's (1998) paper recognized the need for promotion of male participation in family planning and other issues like the need to promote spacing methods, incentives and disincentives, family planning targets, demographic rules etc. This paper identified the factors that contribute to high population growth and also estimated the percentage of their contribution. He found that incentives may be given to all the sterilization and IUD acceptors. Disincentives to non-acceptors of family planning raise many ethical values. Therefore it is advisable not to apply disincentives to non-acceptors or their children.

Gupta and Anil Gumber (1999) study review's the various initiatives towards decentralization in the formulation of the several World Bank assisted projects in population, health and nutrition with a focus on the problems that may arise in the effective implementation of the policy. They found that the district level and below, the revenue department and zilla parishads play crucial roles in the provision of medical and health
services to the citizens in several days. Panchyat Raj institutions can play important supervisory and monitoring role in preventive and promotive health care programmes.

Biswajit Guha’s (1999) study revealed the social choice for human development in India. His study concentrated on the important indicators of the nature's health care of population such as i) birth of babies attended by trained health personal; ii) babies immunized from all principal child diseases; iii) rate of infant mortality iv) rate of mortality of children under the age of five years; v) rate of maternal mortality vi) rate of population expected to survive beyond the age of 40 years vii) prevalence of malnutrition among the children causing the problem of underweight children; viii) access of the population the facilities are safe drinking water, sanitation, public health center/hospital etc.

Pattanaik (2000) study stressed the women welfare and social development. Women are the vital human infrastructure and their empowerment economic, educational, social and political, would have the pace of social development. Investing in women’s ‘capabilities’ and empowering them to achieve their ‘choices’ and opportunities is the surest way to control the economic growth and overall development.

Grace Maria Antony and others (2001) attempted to study the validity of the Human Development Index which is used widely to measure health inequality and standard of living. Health of the population is directly related to economic efficiency. Educational status, accessibility to basic health services and also on political stability, social and cultural development. HDI is extensively used to measure the standard of living of a country. According to Human Development Report (1998), India HDI is lower than 0.5 and was classified along with less developed countries.

Ramesh Bhat (2001) explained in his study about the public-private partnerships in health sector can bring needed resources while taking care that the vulnerable
groups (i.e.) the poor and rural populations have access to health facilities. The objective of this paper was to discuss and analyze the policy initiatives of selected state governments and the Ministry of health and Family Welfare of the Central Government. They found that, over the period private health sector growth has been considerable in both provision and financial side. The recent health-financing pattern suggested that out of pocket cost on health accounts for about 78 percent of total expenditure on health in the country. Private health expenditure in India is estimated to be about 4.25 per cent of the GDP. Insurance coverage mechanisms are negligible and most of this expenditure is out of pocket. Private health care expenditure in India has grown at the rate of 12.5 percent per annum. For each one-percent increase per capita income, private health care expenditure has increased by about 1.47 percent. The data also suggested that at present about 80 percent of 390,000 qualified allopathic doctors registered with Medical Councils in India and 650,000 providers from other systems of medicine are working in the private sector. This obviously shows the dependence on private sector. Utilization studies also show that one third of inpatient and three-fourths of outpatient utilizes private health care facilities.

Sathish B Agnihotri (2001) study examined the relationship between the male and female infant and child mortality rates. The analysis considers a hypothetical reference population where the male and female children are identical in all respects. Analysis of the time series data on the infant and child mortality data for India and 16 of its major states revealed two broad patterns. The first, the male mortality rates decline faster and faster and are accompanied by high levels of residual female mortality. The second pattern showed a faster decline in mortality of the girl children with low or negative residual mortality rates for them. Surprisingly this pattern is seen in a group of states known for the general bias, relative prosperity and practice of infanticide or foeticide through pre natal care.
Economic development, improvements in literacy and a better employment situation are also believed to have the same effect on fertility. There is a positive association between indicators of economic development and fertility reduction. An important argument in support of the inter-linkage between economic development and fertility production was provided by the demand theory developed initially by Becker (1991) and carried forward by the other economists of the household economics. The demand theory has heavily emphasized on various socio-economic indicators of the development as factors responsible for bringing changes in fertility behavior at the micro level. The major socio-economic variables identified in the demand theory are the level of family income and the opportunity cost of the mother's time.

The major socio-economic factors identified in the demand theory are the level of family income and opportunity cost of the mother's time. Further extending the logic the demand theorists have argued that the large families in the over populous developing countries are the result of high demand for children in these countries (1994).

The role of contraceptive innovation and the diffusion of the knowledge regarding contraception have been highlighted by Carlson (1996). While the economists have stressed on the demand side arguments, sociologists have explored the supply side factors of the fertility differences among different societies (Easterlin 1978).

Among the supply side factors those well recognized are the infant-mortality rate, the female age at marriage, duration of lactation, birth interval, mother and child health etc. Mausumi Manna (1998) quotes that, the fertility behaviour in different regions in India identify infant mortality rate, female literacy, female labour force participation, female age at marriage, improvement in mother and child health etc. Dyson's (1996) view with respect to the performances of the states in fertility reduction is that, in the 1980's population growth rate
declined in Kerala, Tamilnadu, Punjab and Gujarat. There might have been a population
decline, although in lesser extent in Harayana, Orissa and Karnataka.

Savitri (1994) conducted a micro study in Tamilnadu to observe that the
development of transport and communication in recent years has increased the rural urban
linkage and female labour force participation in the state, both contributing positively to the
fertility decline. According to Zacharia (1995) in Tamilnadu effective administrative policy
towards population control despite changes in the political parties in power is the factor behind
the fertility decline. Mutharayappa. (1997) study stated that, there is sufficient evidence that
son-preference in India is quiet strong. According to the NFHS data, the ideal family for the
respondent women consisted of 50 percent more sons than daughters. Also women were more
likely to practice family planning if they had two sons than if they had two daughters.

The National Family Health Survey conducted a survey in 1992-93. The main
objective of the survey was to collect reliable and up-to-date information on fertility, family
planning, mortality and marital and child health. The households covered in the survey
included 500,492 residents. The survey found that, contraceptive use is approximately higher
in the urban area (51 percent) than in rural area (31 percent) and is also higher among literate
women (52 percent) than among illiterate women (34 percent). Contraceptive use is higher
among Buddhists, Jains and Sikhs (51-63 percent) than among Hindus and Christians (42-48
percent) and the use rate is lowest among Muslims (28 percent). The sterilization rate is
highest around (60 percent) for women with either 2 sons and 1 daughter or 3 sons. The public
sector, predominantly Primary Health Centers and Government and municipal hospitals, is the
most important source of contraceptives, supplying 74 percent of the current users of modern
methods. Over 85 percent of all sterilizations are done at a public health policy. The
Government is also source of supply for 63 percent of IUD users but only 31 percent of pill users and 15 percent of condom users (1996).*

Niranjan and Rama Rao (1995) study to find out the impact of socio-economic and biological variables on the utilisation of Maternal and Child Health Care services in Andhra Pradesh, India. For analyzing determinants of antenatal care, logistic regression technique was adopted to analyse the determinants of immunization. The findings of the study clearly indicated that, among the background characteristics of the respondents, educated level of the respondents is positively associated with the use of MCII’s services. Religion is found to be significant in the utilisation of health care services. The utilisation care services were found to be poor in low caste and rural and agricultural respondents.

Dow (1996) studied the health care behaviour in the Cote d’Ivoire. On the basis of the data 185 round of Living Standards Measurement study survey collected by the World Bank and the Ivorian Government, he found that the monetary fees for curative services in 1985. But there is considerable variation in the distance and time to travel to the facilities. One implication of this is that preventive and curative care (time) prices of highly correlated, implying that it is possible that the long run elasticities could be either smaller or larger than the short-run responses. According to him focusing attention on the effects of health care for healthy in addition to the sick may have important pay-offs.

People only demand curative health care when they are sick. This simple observation has led many empirical researchers and policy analysts to ignore ‘healthy’ people when evaluating the determinants demand for health care and the effects of health care policy changes. Individuals can in the long run adjust health input mixes to affect the probability of becoming sick. Thus commonly estimated quantities such as price elasticities may be biased or only valid in the short-run, if estimate on is conditioned on health status. Economist and policy
makers in the past decade have increasingly looked to health care demand studies that estimate price elasticites. Proposals to raise public health care user fees in developing countries have been made-Akin et al. (1987)\textsuperscript{88} and Lancet (1988)\textsuperscript{89}. The potential effects on the poor have raised controversy according to Jimenez (1995)\textsuperscript{90}, and price elastic ties are a key empirical input to this debate. Although most health care demand studies only analyse the currently sick. Ellis and Mwabu (1991)\textsuperscript{91} have shown that the effect of demographic characteristics on who become sick may be different from the effects of it on who demands care.

Grossman's (1972)\textsuperscript{92} contribution, numerous models have been formulated to emphasis different aspects of health production process. Akin (1985)\textsuperscript{93}, Behrman and Deolalikar (1988)\textsuperscript{94} and Strauss and Thomas (1995)\textsuperscript{95} have reviewed these in the developing country. The distinct feature of this model is the focus on the trade-offs between curative and preventive inputs, in addition to the usual trade-offs between health and other consumption. This highlights different pathways through which health care prices may affect health care consumption. The main implication for empirically estimating input demands is that health itself is endogenous, and the level of healthiness in the population will change when health care prices change.

Sindelar and Thomas (1991)\textsuperscript{96} study concern over conditional estimate is that health indicators used to condition the sample are often self-reported. They find that self-reported morbidity only the tenuously related to objective measures.

Wolfe and Behrman (1984)\textsuperscript{97} supported the hypothesis that such reporting biases were solely correlated with an observable such as income, the by itself would not lead to biased estimates of short run price effects. However more generally the problem is one of observed attitudes towards both illness and care seeking behaviour. They find that women's childhood backgrounds affect both their adult health and health care utilisation. Such attitudes
may be rooted in one's personality and be unlikely to change as income changes. If so, then income marginal effects estimated from conditional cross-sections will be biased.

The treatment of correlation between sickness and demand unobservable in nested multinomial logit models is reviewed here based on establish results in the literature, McFadden (1981)\textsuperscript{98} shows that when the joint probability distribution

$$f(Sick, Med) = f(Med / Sick) f(Sick)$$

is decomposed into its marginal and conditional probabilities, each of this two component probabilities in turn has as MNL form. This is convenient, allowing each to be separately estimated. This will also hold if the true model is a nested MNL (NMNL), allowing for correlations between choices within each of this separate components ($\varepsilon_{ws} = 0, \varepsilon_{sm} \neq 0$). Thus for example, if the choices for sick people all have common unobserved elements, then it is still possible to estimate $f(Med / Sick)$ as a distinct NMNL.

One estimation option to avoid selection bias when $\varepsilon_{ws}$ is non-zero is a two-step method similar to that in Heckman (1976)\textsuperscript{99}, Dor and Van der Gagg (1993)\textsuperscript{100} report having found no selection bias in conditional health care demand estimation, using a discrete choice version of this procedure. However they do not report how identification was achieved. Relying on functional form has been found unreliable in many applications and which also accepted by Manning, Duan and Roggers (1987)\textsuperscript{101} and in most data sets there are no obvious identifying variables that affect health but not health care demand.

Tilak\textsuperscript{102} study analyses the role of education in improving health, nutrition and in influencing mortality and growth of population. On the basis of experiences of the Asian countries as well as review of the literature concerned, the author finds the significant effect of education on improving child survival, and health conditions in Asian countries. The effect of education of fertility and population growth is also found to be quite significant.
Dreze and Sen (1989)\textsuperscript{10} study stated that education is not only direct importance to living; it can also influence the conversion of other entitlements into human abilities. There is also large evidence to show that children of educated mothers live healthier and have longer lives. The more a mother is educated, higher is the probability of her taking good health care of the family, and her providing better nutritional food. Nutrition is after all an important determinant of survival rates.

According to Tilak (1991)\textsuperscript{104}, a more important indicator of health of a society is reflected by infant mortality. While child mortality rate is a good indicator of mortality, infant mortality is believed to be a more important indicator. That education influences infant and child survival is well recognised. Among the several social economic correlates of infant mortality in India, education is very important. According to Muller (1986)\textsuperscript{105}, besides government expenditure other factors namely education caste status of respondents have also significant barring upon awareness and there by affect access and pattern in utilisation of health care facilities.

Attempts at exploring utilisation aspect of health services in India have been largely limited to micro level studies, while there have looked into various aspect, namely distance of facility from patients, type of care, availability of facility, cost of treatment, quality of care, awareness about existing facility as well as other socio-economic aspects of patients in a particular regional setup owing to the micro nature of such studies it is not possible to get an overall picture at either state, regional or national level. In this connection studies by Yesudian (1980)\textsuperscript{106}, Khan and Prasath (1988)\textsuperscript{107}, Purohit and et al (1992)\textsuperscript{108} can be cited as noteworthy.

Purohit and Siddique (1994)\textsuperscript{109} attempted a macro study on the utilisation of Health Services in India. Their study found that in high expenditure states disparity is
observed only among urban respondents who paid for health services in private institutions. It is observed that males in rural upper fractiles among low and medium expenditure states had utilised more of in-patient facilities in contrast females from rural upper fractiles of high expenditure states had availed of more in-patient facilities. Ability to pay for services had considerable influence in availing health services both in public and private sectors. A cursory glance at comparative figures for average payments made to government and private institutions reveals that, except rural OPD in medium and high expenditure group, upper fractiles paid more than twice their counterparts. Further it is observed that though there was a marginal difference between stays days of upper and lower and fractiles in either of wards in government or private hospitals, the upper fractiles generally spent around twice or more during the hospital stay.

Study by James (1999) attempted to study the levels, trends, and pattern in fertility both at the state and district level. It also investigated the factors behind the decline in fertility, using Sample Registration System and National Family Health Survey data, the study concluded that fertility has been declining at a slow pace in Andhra Pradesh for at least two decades. Female literacy and health status of the people are the two influential variables in reducing fertility.

A study by Bhat and Rajan (1990) found female literacy as one of the strongest variable in explaining fertility decline in Kerala. This effect is even without significant improvement in industrialization, urbanization and improvement in the standard of living of the people, fertility reduction take place with social development.

India's maternal mortality ratio is estimated at 555 per 100,000 live births [Mari Bhat et al 1992]-about 50 times higher than that of many industrialized nations and six times as high as that of neighboring Sri Lanka [UNICEF 1991, Acasdi and Johnson 1990].
Within a global perspective, it is estimated that India accounted for 19 percent of all live births worldwide, and for as much as 27 percent of all maternal deaths. Comparative data on maternal mortality are limited but what is available underscores wide regional disparities. For example, the maternal mortality ratio (maternal deaths as proportions of births) is almost twice as high in the four large northern states (823 per 100,000) as in the rest of India (457). Maternal deaths account for about 1 percent of all deaths and 2 percent of all female deaths annually—but this translates into over 10 percent of all deaths among women of reproductive age and 13.2 percent among rural women in 1987 [UNICEF 1991]. A large proportion of this deaths—up to two thirds by some accounts—are preventable [Agarwal et al, 1982; Bhaskar Rao, 1980; Panat and Mehendale, 1987; Roy Chowdry et al, 1982; Mitra and Khara 1983; Sinha 1986; Bhatia 1988].

Little evidence is available on the levels and patterns of infertility in India. Evidence from the 1981 census (Ministry of Health and Family Welfare, 1990) and a village level study in Maharashtra (Bang et al 122) suggest that infertility may be more prevalent in India (6-7 percent) than in other developing countries (2-3 percent, Sai and Nassim 1989). Factors underlying infertility include, among other things, women's poor health and nutrition status, which can lead to repeated miscarriages and foetal wastage, unhygienic obstetrics and abortion procedures and even such debilitating diseases as tuberculosis.

According to Jejeebhoy 1997, women's poor reproductive health in India is affected by a variety of socio-cultural and biological factors. Underlying poor reproductive health among Indian women is their poor overall status on the one hand and an inadequate delivery system to cater to the needs of secluded, shy and devalued women on the other. Thus efforts to improve women's education raise enrollment and attendance rates of girls in school and reduce the drop out rate on the one hand and enhance women's income autonomy on the
other are the fundamental, in the long run, for improvements in women's and family health, no
less important are improvements in the quality and breadth of services catering to reproductive
health needs.

Arumugam's (1996) study concentrated the importance of health in the
development context and the need for studying determinants of health status. He has studied
the health status by using morbidity and nutritional status as bases rather than IMR, CDR and
LED as indicators. He also attempted to study the health status of India treating morbidity and
nutritional status as indicators by using the National Family Health Survey data. He found
that mere growth of per capita income in India has no significant effect on the health status of
the population. The significance of other variables strengthens the view that the government
should raise female literacy, per capita expenditure on health, poverty alleviation programme,
the nutritional status of children, reducing morbidity by improving Health, Sanitation, Water
Supply and Preventive steps to check spread of diseases by vaccination.

Dey (2001) study attempted to understand the health system in India, the
challenges it faces today, its deficiencies as well as its potentials and the future trends. He
found that the concept of disease treatment model as the goal of health system has been
replaced by health promotion child built and disease prevention by pro-active interventions.
There has been a shift of focus from hospital based curative care to community – based
primary health care as the means of achieving health. The concept of three tier system of
health care that is, community – based primary health care and hospital – based secondary and
tertiary care has been accepted as the main frame work of the health system.

The above paragraphs present a detailed review of literature on various on
various aspects of health in India and abroad. It may be noted most of the studies were macro
studies and micro level studies are very few in number. Even among these studies an intra-
district study based on composite index based on income, education and occupation are very scanty. The present study attempts to bridge this research gap.
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