Chapter 2

Review of literature

2.1. Introduction

Literature in the field of health economics is mostly normative in nature consisting of studies on welfare aspects of medical care, what public health policy ought to be or studies being based upon the value judgments in health care. Positive studies based on econometric techniques, empirical evidence, and other quantitative techniques are less extensive and more exotic. Moreover, most of the positive studies have been directed at the evaluation of health care technologies. These include cost benefit analysis, cost effectiveness analysis, and cost utility analysis. All these techniques need adequate knowledge and information about the available alternative health care technologies (Hutton 1994, see also Drumond et al. 1997). However, the problem of health services utilisation has been dealt with by scholars in many different ways as presented in the following sections.

2.2. Health services utilisation

Among the economists, Martin S. Feldstein (1967a) began his work with one set of explanatory variables: availability factors. In his model for aggregate planning, he included demographic characteristics, income, cost, etc. Another noted economist, Paul J. Feldstein (1979) included the factors like incidence of illness, cultural-demographic characteristics with the economic ones. Sociologists and anthropologists on the other hand have presented a very elaborated and systematic classification of the explanatory variables (see Andersen 1968, Kroeger 1983, Andersen 1995). Though it seems that their models are biased to sociological approaches, scope for applying econometric tools and techniques (in those models) have not been ignored. In the present study we have decided to follow a framework, which has been modified after Kroeger (1983), where a broad categorisation of factors includes the following:

- Characteristics of the disorder and their perception (need factors),
- Characteristics of the subject (predisposing factors), and
- Characteristics of the service (enabling factors).

2.2.1. Characteristics of the disorder (Need factors)

Type, stage and intensity of illness, number of spells, duration of illness episode, identification of the disease, and aetiological considerations affect utilisation of health services. Pathak et al. (1981) found that higher the severity of perceived morbidity, the higher the degree of utilisation of services in a rural area of Nagpur in India. Germano (1986) showed a varied pattern of utilisation for different types of illness in their different stages in a rural set up in Kenya. In the Solenzo Medical District in Burkina Faso, Sauerborn et al. (1989) found that most of the seriously ill patients overcame the barriers of cost and access to use professional health service. In their study, severity of disease is one of the most important determinants of health seeking behaviour. Sodani (1997, 1999) found significant positive association between duration of illness episode and demand for health care in TSP region of Rajasthan in India. Study by Dunlop et al. (2000) on Canada's universal health care system demonstrated positive relationship among health need (measured by perceived health status and number of health problems) and the use of primary care services. Table 7 presents findings of studies in this category in very brief.

Table 7. Characteristics of disorder and their perception

[Stage and intensity of illness: 1, Number of spells: 2, Duration of illness episode: 3, Identification of the disease: 4] ⇒ Utilisation of services

Author	Year	Place	Findings			
			1	2	3	4
Pathak et al.	1981	Nagpur, India	√	-	-	-
Germano	1986	Kenya	√	-	-	√
Sauerborn et al.	1989	Africa	√	-	-	-
Sodani	1997	Rajasthan, India	-	-	√	-
Dunlop et al.	2000	Canada	-	√	-	√

√: The issue is addressed, - : otherwise

The quest of prohibiting the causes of disease also plays important role in choosing a particular type of care or system of medicine. Kroeger (1983) has presented a detailed review on aetiological concept and type of disease in Africa, Asia and Latin America. In

Africa, the dichotomy between magical-supernatural and physical-empirical diseases was found to be related to different folk strategies of treatment. In India, preference for modern health care would depend on particular illness. In rural India and Taiwan, people with mental illness resorted more particularly to traditional healers. In Latin America, illness deemed to possess supernatural causes were treated by folk specialists, while others, such as infections were treated at home. In some cases, patients went to doctors to gain relief from the symptoms and to the folk healer to remove the cause of the disease.

2.2.2. Characteristics of the subject (Predisposing factors)

'Characteristics of the subject' is to mean background characteristics of the morbid persons and their households. These are also termed as 'predisposing factors' in literature. Predisposing factors are those, which are supposed to make an individual susceptible towards a specific action or behaviour or experience. Different factors in this category are following.

- Family characteristics (age, gender, household size, marital status)
- Social Structure (education, employment, ethnicity)
- Culture
- Assets / Affordability of a household (land, livestock, cash income)

2.2.2.1. Family characteristics: Age, gender, household size, and marital status are very important determinants of utilisation of health services. Feldstein (1979) argued that although population characteristics may not affect each of the components of medical care in the same manner, they are important in explaining variations in the use of medical services. According to him, as illness is an unexpected occurrence, it may be considered as a random event, but it has a fair degree of predictability with respect to age and gender. As age increases, incidence of illness increases and morbidity patterns change. The need for medical care also differs among men and women. So, the pattern of utilisation of health care will also vary with age and gender. The relationship between age and use of medical services, however, is not simply linear nor is the same for each type of medical services. As age-specific death rates show U-shaped curve in developing countries and J-shaped curve in developed countries (see Bhande and Kanitkar 1999), pattern of utilisation of care is also supposed to show similar relationship with age. This aspect of U-shaped age-utilisation relationship has been addressed by Aday (1972) and

Faizi (1996). Pathak et al. (1981) found that utilisation varies in different age groups and the difference between various age groups is statistically significant. From their study it can be observed that utilisation initially increases in the younger age groups, but decreases drastically in the older age groups. From Sodani's study (1997), the U-shaped relationship can be checked in both rural and urban areas for all the three districts in the TSP region of Rajasthan. However, in his multiple regression analysis most of the linear and log-linear models show significant positive coefficients (sometimes negative but not significant) meaning that expenditure on health care increases with age.

Marital status and size of the household also affect utilisation of health care. Single persons generally use more hospital care than married persons do (Feldstein 1979). Married women in the reproductive age group, on the other hand, are likely to demand more medical care.

Size of household affects utilisation of health care in two ways. In large families, the interaction with the social network may be more intensive than in small ones. In rural Korea, the size of family is one of the most significant factors in governing the use of services (Koreger 1983). A larger family has less income per capita (although not necessarily proportionately less) than does a small family with the same income (Feldstein 1979). So, demand for medical care may be less in larger families. Study by Yesudian (1989) in Madras, India also supports the fact that larger families have difficulties in utilising health care. Table 8 shows glimpses of studies in this category.

Table 8. Family characteristics

[Age: 1, Gender: 2, Family size: 3, Marital status: 4] ⇒ Utilisation of services						
Author	Year	Place	Findings			
			1	2	3	4
Aday	1972	USA	√	-	-	-
Feldstein	1979	Canada*	√	√	√	√
Pathak et al.	1981	Nagpur, India	√	-	-	-
Kroeger	1983	Germany*	√	-	√	-
Yesudian	1989	Madras, India	-	-	√	-
Faizi	1996	Bihar, India	√	-	-	-
Sodani	1997	Rajasthan, India	√	-	-	-

*√: The issue is addressed, - : otherwise, * Conceptual studies*

2.2.2.2. Social Structure: Impact of education, employment and ethnicity towards utilisation of services is universally acceptable. According to Pathak et al. (1981), education of a person is an important determinant of values, beliefs, attitudes and goals. Since these factors influence behaviour, education influences the use of health services through similar mechanism. Better education leads to a better understanding of one's environment including disease and processes related to it. Occupation of an individual also affects utilisation of health care as it is related to income. A daily wage earner is likely to save less from his or her limited income and has fewer funds to meet accidental expenditure on health services utilisation.

Abu-Zeid, and Dann (1985) conducted a pilot study on health services utilisation and cost in Islamia, Egypt, which revealed low utilisation pattern for the maternal and child (MCH) services and for the health services of the primary health care units (PHCUs) in general. Low socio-economic status and educational level have been among the main reasons behind low utilisation of these services. Garg (1985) found significant positive association between education and utilisation of modern medical care. Amin et al. (1989) used data of two surveys conducted in 1976 and 1987 in the Companiganj area of rural Bangladesh. The study found that the preference for formally trained modern practitioners was positively, and the preference for informally trained modern practitioners was negatively associated with the socio-economic status as reflected in the household's education or occupational status.

Elo (1992) investigated the hypothesis that whether female schooling influences the use of maternal care services in Peru. The findings are found consistent with the hypothesis. Becker et al. (1993) examined the determinants of use of maternal and child health services in Metro Cebu, the Philippines. They have considered four dependent variables in the maternal and child health care category and a set of nineteen independent variables from the socio-economic, demographic characteristics and accessibility to health care. For all health care outcomes higher parental education, and particularly maternal education, was associated with increased utilisation of services in both urban and rural areas. With education, employment status, ethnicity and religion also play important role. Respondents in the higher caste groups are more likely to use health care as compared to their scheduled caste / scheduled tribe counterparts. Trakroo (1993)

examined health-seeking behaviour of scheduled caste population in rural areas of Meerut district in Uttar Pradesh, India. He found that non-scheduled caste mothers utilised the maternal and child health services better than scheduled caste mothers. Using data from National Family Health Survey-I, Gobindasamy and Ramesh (1997), found positive relationship between mother's schooling and utilisation of maternal and child health (MCH) services across cross-cultural settings in India. In their bivariate analyses, in the country as a whole, only half of births to illiterate women received ante-natal care, compared with 79 percent of births to literate women with less than middle-school education and more than 90 percent of births to women with at least middle school education. Similar or stronger differentials by maternal education were observed for tetanus toxoid injections, iron folic acid tablets and utilisation of delivery care services. In the multivariate analyses it has been observed that education is one of the many indices of socio-economic status that has strong positive relationship with utilisation of various maternal health care services. Positive relationship has also been found between mother's education and utilisation of child health care. For India as a whole and also for north India work-status (two categories: working and not working, the latter being the reference category), caste (two categories: scheduled caste / tribe and non-scheduled caste / tribe, the latter being the reference category) and religion (three categories: Hindu, Muslim and other, the first being the reference category) were found as significant determinants of utilisation of all types of maternal health care services. Kavitha and Audinarayana (1997) examined how utilisation of some selected antenatal, natal and post-natal services are affected by different socio-economic and demographic variables in rural areas of Tamil Nadu, India. The study found women's education to be the crucial factor, which has shown a significant and positive effect on antenatal check-up, use of iron and folic acid tablets and place of delivery.

Celik and Hotchkiss (2000) investigated how different socio-economic factors affect women's use of maternal health care services in Turkey. In their study with other socio-economic factors, educational attainment, ethnicity (three categories: Turkish, Kurdish and others), have positive and statistically significant impact on the use of prenatal care and birth delivery assistance (Kurdish women are less likely to use prenatal care). Occupation of the household head has no significant impact on use of care. Dunlop et al.

(2000) found that Canadians with low education are less likely to visit specialists than those with higher education. Matsumura and Gubhaju (2001) examined how women's status and household structure affect the utilisation of maternal health services in Nepal. They have considered three types of dependent variables: prenatal care from modern source, place of delivery (home vs. health facility) and professional assistance from modern source and a set of independent variables related to women's status and household structure. They have estimated logistic regression models for the above three dependent variables for both urban and rural areas. Additionally, as majority of the population in Nepal live in rural areas, separate models were fitted for women only in rural areas. In the prenatal care model, of the individual level characteristics education level of women is the only variable that has a positive and significant relationship with prenatal care. In the case of delivery model, education and occupation of women have positive and significant association with the place of delivery. In the professional assistance model in rural and urban areas education, work status and job type; and in the rural area education and work status have significant influence to receive modern assistance at delivery. Important studies in this category are shown below.

Table 9. Social structure

[Education: 1, employment: 2, ethnicity: 3] ⇒ Utilisation of services					
Author	Year	Place	Findings		
			1	2	3
Pathak et al.	1981	Nagpur, India	√	√	-
Abu-Zeid, and Dann	1985	Africa	√	-	-
Garg	1985	India	√	-	-
Amin et al.	1989	Bangladesh	√	√	-
Elo	1992	Peru	√	-	-
Becker et al.	1993	Philippines	√	-	-
Trakroo	1993	Merut, India	-	-	√
Gobindasamy and Ramesh	1997	India	√	-	-
Kavitha and Audinarayana	1997	Tamil Nadu, India	√	-	√
Celik and Hotchkiss	2000	Turkey	√	-	√
Dunlop et al.	2000	Canada	√	-	-
Matsumura and Gubhaju	2001	Nepal	√	√	-

√: The issue is addressed, - : otherwise

2.2.2.3. Culture: Basu (1990) has done one longitudinal study with focus on cultural background as a variable affecting the level and kind of utilisation of existing health care services in Delhi. The study has been conducted in a resettlement slum in Delhi during 1985-86 taking two groups of population with two different cultural backgrounds. One group has origin in eastern Uttar Pradesh and another group has in Tamil Nadu. The hypothesis has been that cultural or regional identity has an important bearing on the knowledge, attitudes and practices relevant to the use of health care facilities. The study found that important cultural differences exist in the medical services sought for childbirth and in the treatment of morbidity in children of different ages and sexes.

2.2.2.4. Affordability of a household: Very few studies have examined the relationship between family income or wealth and utilisation of health care. Studies on health care expenditure, in general, found that families with higher incomes have greater expenditures for medical care. However, the percentage of income spent on medical care declines as income increases meaning that income elasticity of demand is less than one (Feldstein 1979). Sodani (1997) has taken household income and number of living rooms as a measure of household wealth. He has estimated linear and log-linear models for each of the three districts in the TSP region of Rajasthan. He has found mixed results. Sometimes the coefficients of income and rooms are positive and sometimes negative. Positive signs convey the affordability of the household. Affluent households spend more on health. The negative signs indicate that economically better placed households spend more on good health habits and also take early care of the ill members, therefore the expenditure on illness gets decreased.

Celik and Hotchkiss (2000) found that household wealth (owning a car, having a flush toilet and having a modern floor) was positively associated with the use of prenatal care and birth delivery assistance but their effect was statistically significant with the acceptance of birth delivery assistance. Dunlop et al. (2000) found that Canadians with low income are less likely to visit specialists than those with moderate and high incomes. Important studies are shown below.

Table 10. Assets / Affordability of a household

Assets / Affordability of a household ⇒ Utilisation of services			
Author	Year	Place	Findings
Feldstein	1979	Canada*	Income elasticity of demand is less than one
Abu-Zeid and Dann	1985	Africa	Positive relationship
Sodani	1997	India	Mixed results
Celik and Hotchkiss	2000	Turkey	Positive relation with having a car, flush toilet and modern floor
Dunlop et al.	2000	Canada	Positive relationship

* *Conceptual study*

2.2.3. Characteristics of the service (Enabling factors)

Characteristics of the service are nothing but the health service system factors or factors in the supply-side economics of health care, which have important bearing regarding the use or non-use or acceptability of different types of care. Five possible facets of the one health service system are following.

- Availability of health facilities
- Accessibility to health care
- Appeal (opinion and attitudes towards traditional and modern healers)
- Quality of care
- Cost or price of care.

2.2.3.1. Availability of health facilities: In Feldstein's (1967a) formulation, one hospital's production function takes the shape of a Cobb-Douglas production function where output is measured in terms of cases treated or number of hospital admission, and inputs are measured in terms of physical quantities of items used by hospitals such as medical and paramedical stuff, plant and equipments, drugs and bandages, etc. He estimated production functions for different input specifications and also compared the results with those obtained from other alternative estimation methods. However, we find one section important where he estimated production functions for hospitals of different size. He has fitted five production functions for four size quartiles and for all hospitals taken together with five availability factors: nursing, medical, beds, drugs and dressings and housekeeping. The results were very important for policy implications. For all the production functions elasticity coefficients of medical inputs, beds and drugs and

dressings are positive, meaning that hospital output increases with respect to changes in inputs. The coefficient of medical inputs rises substantially with hospital size. This implies that additional expenditure on medical stuff is more effective in large hospitals than in small ones. The elasticity of output with respect to beds falls markedly with increased hospital size. All the production functions show decreasing returns to scale, meaning that output would increase proportionately less than the increases in input. Feldstein (1967b) also developed a 'complete-system of econometric models' to observe conveniently how the health care system responds to differences in bed availability, demographic characteristics, income, etc.

Frost and Francis (1979) explained variability in hospital admission for British National Health Service by availability of beds with district level data for 17 districts. There were three independent variables in their model: available beds, consultant, and population. They have concluded that estimated elasticity of actual and potential admissions with respect to available beds was not significantly different from one, with none of the elasticities for the other explanatory variables proving significant.

Planning Commission, Government of India (1999) has done one evaluation study on functioning of community health centers in eight states in India: Bihar, Haryana, Madhyapradesh, Maharashtra, Orissa, Rajasthan, Tamilnadu, and Uttar Pradesh. The Commission has estimated several econometric models and ultimately accepted one considering its statistical soundness. It has found that total number of doctors in a CHC (Coefficient: 0.46) and percentage of specialists present in CHC (Coefficient: 0.06) are positively related with utilisation rate of CHC services. Table 11 summarises findings in this category.

Table 11. Availability of health facilities

Availability of health facilities ⇒ Utilisation of services			
Author	Year	Place	Findings
Feldstein	1967a	U. K.	Utilisation increases with manpower, plant and equipments, and drugs.
Feldstein	1967b	U. K.	Utilisation increases with availability of bed.
Cuttani	1976	India	Positive relationship.
Frost and Francis	1979	U. K.	Elasticity of bed is not significantly different from one.

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Amin et al.	1989	Bangladesh	Availability of drugs increases utilisation in public health facilities.
Sauerborn et al.	1989	Africa	Availability of drugs is an important service related determinant.
Vogel and Stephens	1989	Africa	Availability of pharmaceuticals is important.
Government of India	1999	India	Utilisation increases with number of doctors and specialists.

2.2.3.2. Accessibility to health care: Increased distance between residents and health care providers is commonly thought to decrease the utilisation of health care. This barrier effect of distance is assumed to be greater for those with reduced access to transportation, and for those living in sparsely populated areas where distances between residences and facilities are large (Nemet and Bailey 2000). Studies on health services utilisation in general have found a negative (distance-decay) relationship between remoteness of a health facilities and utilisation of services. Anthropologists on the other hand, argued that low degree of geographical accessibility of modern health services is supposed to be a major argument for the use of traditional resources in health care delivery (Kroeger 1983).

Rao et al. (1972) argued that introduction of public transport systems will reduce the cost of traveling to towns, and thereby increase the number of people utilising medical and health care facilities in South India. Ramachandran and Shastri (1983) found that there are no significant differences in the distance traveled for treatment among various occupation groups in Karnataka, India. However, large farmers have a tendency to receive treatment from farther places than other groups, and artisans tend to get treatment within villages. Airey (1989) examines the effects of road improvements on in-patient catchments for two mission hospitals in Kenya. The study utilised records of two hospitals for 1983 (before the improvement of road) and 1986 (after the completion of improvement). The study found strong distance-decay (negative) relationship in both 1983 and 1986. He has estimated a negative exponential function, which suggests that per capita utilisation declines at a rate of about 2 per cent per kilometre for both the hospitals. However, there was no significant impact of improvement of road network on pattern of

utilisation. Rao and Richard (1989) found that the distance from the town has been shown to be a very important factor in the utilisation of medical care services.

Sodani (1997, 1999) found positive relationship between distance covered by a patient to reach one health facility and health care expenditure. Planning Commission, Government of India (1999) found that area coverage of a CHC and mean distance of PHCs from the CHCs are negatively related to utilisation.

Mooney et al. (2000) investigated whether lengthy travel distances may explain why relatively few veterans in the United States use VA hospitals for impatient medical / surgical care. They have considered four categories of independent variables: veteran characteristics (number of veterans per postal zip code area by age and eligibility), density of eligible veterans (per square mile according to different income categories), access to facilities (distance to VA and non-VA alternative in miles) and characteristics of most non-VA alternative (has medical resident, member of the Council of Teaching Hospitals and number of beds). The study found that use of VA care decreases with increase in travel distance only up to about 15 miles, after which use is relatively insensitive to further increases in distance. Major findings in this category are as follows.

Table 12. Accessibility to health care

Accessibility to health care ⇒ Utilisation of services			
Author	Year	Place	Findings
Rao et al.	1972	India	Introduction of public transport is positively related with utilisation
Ramachandran and Shastri	1983	Karnataka, India	No significant relationship between distance travelled and utilisation
Freeman et al.	1983	Africa	Inverse relationship
Airey	1989	Africa	Utilisation declines at a rate of about 2 % per kilometres (negative relationship)
Rao and Richard	1989	India	Distance from town is an important factor
Government of India (GOI)	1999	India	Area coverage of a CHC and mean distance between PHCs and CHCs are negatively related with utilization
Sodani	1999	India	Positive relationship with expenditure
Mooney et al.	2000	U. S. A.	Distance-decay relationship up to 15 miles

However, recent theoretical developments in the geography of health set the stage to discuss a more nuanced relationship between distance and health care utilisation. Nemet and Baily (2000) think that the implication that human behaviour is recursively bound up with how individuals use places and derive meaning from these interactions. Distance then may take different meaning to different individuals. It is important to consider how an elderly population 'construct' the barrier effects of distance in experience of rural life. They have operationalised the idea by working out activity space for each individual. In order to do so they have considered trips to groceries, etc. and followed the method developed by Lefever (1926). The study found statistically significant association between utilisation and location of physician relative to activity space. They have concluded that variation in utilisation rates seems more closely linked to a broader web of spatial relations – the activities of daily life - than any marker (distance).

2.2.3.3. Opinion and attitudes towards traditional and modern healers: As we have kept one separate section to analyse patients' preference for a type of care or system of medicine, appropriate review on opinion and attitudes towards traditional and modern healers or system of medicine is presented in that section.

2.2.3.4. Quality of care: The notion of quality of care, which has been characterised as a social construct or a multifaceted concept, takes different meaning. These meanings vary across actors, professionals, managers, governments, users, among others and in relation to the type of care under consideration as well as to the social and technological context in which the care is delivered. Among these approaches, the analysis of user perception of quality offers a useful complement to those evaluations conducted from the point of view of professionals or public health authorities (Haddad et al. 1998).

According to Donabedian (1980), the doctor-patient relationship particularly in the areas of patient's access to information about their health care, in some quarters the patient's satisfaction with availability and accessibility of services is considered a valid indicator of the quality of the medical care. The importance of doctor-patient information exchange has been boosted up by Schoenbaum (1998). He feels that the art of medicine is equally important as the science of it. The science of medicine is what determines the process most likely to help a patient recover from a clinical condition. One facet of the art of medicine is enhancing the ability of physicians to establish trusting relationships with

patients, relationships that will enhance compliance with scientific practices and lead to better outcomes. Probably many physicians simply find it easier to order a test or treatment than to have a 'difficult' discussion with the patient. ICPD, Cairo has also recommended increased access to quality reproductive health services (UNFPA 1995). The recommended indicators of quality of care include: provider-client information exchange, provider competence, interpersonal relations, and mechanisms to encourage continuity of medical care.

Quantitative studies solely on quality of care have a distinct platform in literature. Quality of care as a component in studies on health services utilisation is less known. We have reviewed one study in the first category where Qatari and Haran (1999) tried to find out the determinants of user's satisfaction with primary health care settings and services in Saudi Arabia. They have considered 10 components of service quality and their constituents: environment structure, waiting area structure, waiting time, consultation time, activities, privacy measures, confidentiality measures, attitude, explanation and perceived outcome. They found that waiting area structure (satisfaction with situation, space, furniture, set-up, cleanliness, privacy, availability of drinking water, availability of bathrooms, availability of health education materials), confidentiality measures and environmental structure (satisfaction with building conditions, cleanliness, set-up, staffing, furniture, technical facilities, working hours, working shifts) were the areas that caused more concern to service users.

In the second category, in Dhar's study (1979), patients gave suggestions for improving general cleanliness of the hospitals, cleanliness of linen and improving water supply to bathrooms. Boscarino (1996) investigated the research question that whether perceived overall quality could influence hospital occupancy. The study did not find any satisfactory result. Moreover, the study found that there might be positive and negative biases associated with patient's perceptions. The study concluded that researcher should use quality indicators with caution. Table 13 shows the concerned areas, which affect utilisation of services.

Table 13. Quality of care

Quality of care ⇒ Utilisation of services			
Author	Year	Place	Findings
Dhar	1979	India	Important factors are: general cleanliness, that of linen and improving water supply in bathrooms.
Donabedian	1980	U. S. A.	Doctor-patient relationship is important
UNFPA	1995	U. S. A.	Four points are: provider-client information exchange, provider competence, interpersonal relations, and mechanisms to encourage continuity of medical care.
Boscarino	1996	U. S. A.	There might be positive and negative biases associated with patient's perceptions.
Schoenbaum	1998	U. K.	Art of medicine is equally important as the science of it.
Qatari and Haran	1999	Saudi Arabia	Waiting area structure, confidentiality measures and environmental structure were the areas that caused more concern to service users.

2.2.3.5. Costs of Care: The price of a service and use of that service are, according to economic theory, inversely related: as price is reduced, purchase or use of the service will increase. Knowledge of price elasticity of demand for medical services is, therefore, of great importance. Cost of care is divided into three parts: the reduction in market income caused by disease, the reduction in longevity caused by disease, and, the reduction in psychological well being caused by disease, often labelled 'pain and suffering,' even when there is no reduction in market income. The reduction in market income has at least four sub-components: the cost of medical treatment, the loss of labour market income from an episode of illness, the loss of adult earning power from episodes of disease in childhood, and the loss of future earnings from premature mortality (WHO 2001). Studies, in general, take the following components: doctors fee, hospital admission fee, cost of drug, cost of medical test, cost of surgery as direct cost and cost of special diet, cost of transport, tips, rituals, monetary loss of earnings to patient due to illness and loss of earnings to accompanying persons for providing support as indirect cost (Weisbord 1960, Vinni 1983, Sodani 1997). However, the effect of price or costs towards utilisation of health services has not been explored so much in developed and in developing countries because of the complexity of the concept in health care. In many developed countries, part or the entire price is paid by the third party payer or by the government on

patient's behalf. Any estimate of price elasticity of demand should be based upon the net or out-of-pocket price paid by the patient. Insurance coverage represents a movement down the patient's demand curve, which increases the quantity of services demanded. Health insurance may have positive impact on utilisation but elasticity of demand for health care with respect to health insurance does not confront to the price elasticity of demand (Feldstein 1979). Many African nations have adopted the recommendation of the World Bank on increased cost recovery for financing publicly provided health services and gradually introducing user fees (Shaw 1995). However, utilisation dropped in many instances after user fees were introduced. When quality improvements were coupled with the introduction of user fees, utilisation increased after fees were raised (Reerink and Sauerborn 1996).

Studies on impact of cost or user fees on utilisation are sparse at national level and also of the studies that have been done, the findings are mixed. Many experts in medical care have generally assumed that prices affect medical service use insignificantly (Yoder 1989). Yoder have presented seven different studies in health demand and utilisation in developing countries at sub-national level and come to the conclusion that in general the price of services does not matter, having a minimal (if any) effect on the decision to seek health care. In the Philippines and Malaysia, it was found that price had a minimal effect on the demand for health services. In Kenya, however, it was found that cash price is a deterrent to health care use. In another study in Mali, it was found that price elasticity of demand is – 0.017, which suggests that there would be little or no change in the expenditure pattern as a result in changes in price, holding other things constant.

Yoder (1989) has also presented results of his study conducted in Swaziland where he has shown that price (hike in fee structure) is well sensitive to utilisation of care. In Swaziland, health care services are provided by government and church missions through not-for-profit health facilities. User fees at government health facilities were far below than those of mission hospitals. In October 1984, government introduced a new fee structure mainly to equalise the fees charged by the two sectors. He has compared average patients' attendance rates (in health facilities) of October-December 1983 and October-December 1984 and at the second stage attendance rates of January 1984 and September 1985. In the first year, after the revision of fees structure, attendance in government facilities reduced by 32.4 percent and in the second

year 38.5 percent. On the contrary, attendance in mission facilities has increased by 10 percent in the first year and 1 percent in the second year. The instance of government facilities clearly indicates a negative relationship between user fees and utilisation. If government and mission facilities are taken together then from January 1984 to September 1985 average attendance rates has decreased by 17 per cent. Utilisation increased in mission health facilities at the cost of that in government health facilities perhaps due to better quality of care in the former than in the latter.

Freeman et al. in Calabar, Nigeria (1983), Sauerborn et al. in Burkina Faso (1989), Celik and Hotchkiss in Turkey (2000) found respectively that cost of travel; cost of travel and drugs; health insurance as important determinants of utilisation of a care.

2.3. Morbidity

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO 1961). The term morbidity, meaning the state of illness or disability in a population, is a departure from the above ideal health condition. Though death is clearly a well-defined event, illness is not. But it is state somewhere between perfect health and death whose identification depends upon both the criteria used and type of observation applied to them. Morbidity measures are of two types: self-perceived morbidity and observed morbidity. The objective and scope of the study require a measure of the first type.

Self-perceived morbidity refers to measures, which are perceived and reported by an individual, usually in response to enquiries regarding illness. Murray and Chen (1992) grouped self-perceived morbidity into four categories: symptoms and impairments, functional disability, handicap, and health service use. Morbidity surveys are found to be dependent upon the perception and reporting of symptoms and impairments by individuals. Results from such surveys are the most common form of morbidity data in developing countries. Surveys on functional disability include questions on individual's ability to carry out specific functions and tasks or on restrictions of normal activities. Handicap, as self-perceived functional disability within a specifically defined context, attempts to measure the significance of a functional disability to an individual in a specific social setting. Because data on functional disability and handicap are rare in

developing countries, levels of health service use are employed to estimate morbidity burden of a community (Murray and Chen 1992).

For more than three decades, researchers have examined the links between demographic and socio-economic changes and systematic shifts in disease and mortality patterns. Omran (1971) who first used the term 'epidemiologic transition', projected the view that in progressing from high to low mortality levels, all population experience a shift in the major causes of illness and disease. Whereas infectious diseases and nutritional and reproductive health problems predominate in high mortality populations, chronic and degenerative diseases predominate in low mortality populations. Since Omran, a number of writers have sought to refine or extend the notion of the epidemiologic transition. A broader notion of the 'health transition' has been introduced to account for response of the organised health system to long-term changes in the health condition of a society. Some writers have challenged the view of the epidemiologic transition as a universal theory of unidirectional change, emphasising heterogeneity in the pace or quality of the transition in different settings (Salomon and Murray 2002).

India is in the midst of an epidemiologic transition and has an epidemiological profile of a poor as well as an affluent country (Sundar 1995, Peters et al. 2002). Important 'causes of disease' studies in India at National level are based on self-perceived morbidity method. Twenty-eighth (28^{th}) Round National Sample Survey of India (NSS 1980) was dedicated on morbidity. The survey depicts that one in three Indians fell ill annually, with similar rates in urban and rural areas. Among the States, Kerala has the highest rate of reported morbidity though it was the most demographically advanced state. Citing this example and another one from USA (which shows that self-perceived morbidity in USA is several times higher than that of rural Kerala and the Indian national average) Murray and Chen (1992) has put question on validity and reliability of 'self-perceived' method. National Council for Applied Economic Research (NCAER) did a Household Survey of Medical Care in India in 1990 (Sundar 1995). The study shows prevalence rates of morbidity for one-month reference period as 106.7 and 103.0 for rural and urban areas respectively. The figures for West Bengal were 82.0 and 81.5 in the rural and urban areas respectively. This study also shows highest rates of morbidity in Kerala. The figures (for Kerala) are 194.8 and 183.9 in rural and urban areas respectively. High

morbidity in Kerala may be due to high perception of illness of the educated and highly health conscious people of the State or may be burden of disease is really very high in that State.

Inspiration (2002) has presented incidence rates of 12 major diseases in rural areas of Cooch Behar district in West Bengal in major four seasons: summer, rainy, spring and winter. If we add the seasonal figures to get annual rates, we get very high incidence rates for few diseases like Fever (171 per cent), Diarrhoea (160 per cent), Acute Respiratory Infection (64.2 per cent), Measles / Chicken Pox (48 per cent), Skin disease (34.2 per cent), and Malaria (32.01 per cent) among the sampled population.

2.4. Patient's preference for a care & Cognitive Structure

2.4.1. Patient's preference for a care

Individual preference or appeal towards a particular type of care or system of medicine is an important determinant of utilisation of health services. Each system of medicine represents more or less a distinct stage in the development of healing art in the progress of human civilisation. In India, various systems of medicine (such as Allopathy, Ayurveda, Homoeopathy, Unani, Siddha and Folk) run parallel. Though ultimate aim of individual is healing of disease or alleviating the pain, human behaviour in illness and their acceptance of mode of treatment varies (Srivastava 1976).

According to Reddy (1966), factors, which determine utilisation of modern medicine in developing countries, are lack of facilities of transport and communication and lack of awareness of modern medicine. Indigenous system of medicine has profound hold on villagers socially and psychologically. According to Rao (1972), the reasons for thriving of indigenous system of medicine are the non-availability of manpower, equipment, medicine (drugs) and physical facilities required for modern medicine. Srivastava and Bhandari (1974) studied utilisation pattern and demand for CGHS (Central Government Health Scheme) ayurvedic dispensaries in Delhi. They found that average daily attendance of ayurvedic dispensary had been on increase from 1967 to 1973. The reasons for choosing ayurvedic system were 'lasting cure', 'no ill effects', 'more effective', and 'tried allopathy earlier'.

Chopra (1980) argued that community responses to systems of medicine in illness depend upon cause of disease, effectiveness of treatment and time spent on cure of a disease. The popularity of allopathy was based on the understanding that it gives faster relief and also had greater efficacy in cure of most diseases. People often resorted to a combination of system of medicine. Hans (1980) studied perception and utilisation of ayurvedic medical care by rural community in Aligarh, Uttar Pradesh. He reported that great importance is attached to ayurvedic institutions despite the availability of the allopathic services through primary health centres. The reasons for preferring ayurvedic system were 'slow but lasting cure', 'faith in the system', 'no side reaction', and 'inexpensive medicines'. Forty-three percent of the respondents consider ayurvedic to be effective for children. Reasons for choosing homoeopathy were also similar. Eighty percent of the respondents used Homoeopathy for selective illness. According to Banerjee (1981), the analysis of social, economic and political determinants of the body of knowledge of the indigenous systems of medicines in India is of crucial importance. Such an analysis places the indigenous systems of medicines in an entirely different perspective. It is very unfortunate that the bulk of social scientists who have worked in the field of health culture of the rural populations in India, have been over-enthusiastic in discussing the superstitious health beliefs and practices of these people, and they have not paid adequate attention to the powerful social, economic, and political forces which had been instrumental in causing decay and degeneration of their health culture. According to him in rural India a very unflattering image of the Primary Health Centres lead people to go to the registered medical practitioners and quacks. When they proved ineffective, then depending on the economic status of the individual and the gravity of illness, villagers actively sought help from government and private medical agencies in the town and cities. Nandan et al. (1982) in their study in a development block in Agra, Uttar Pradesh found that majority of people relied on traditional practitioners. Modern medicine was less in vogue due to high cost and technology and less number of practitioners. The traditional practitioners make significant contributions to health care of the community.

Chopra (1991) studied the perception of patients under Central Government Health Scheme (CGHS) towards Indian System of Medicine and Homoeopathy (ISM & H) in

Delhi. She found that a lot of beneficiaries of CGHS specially educated and high-income group do utilise ISM & H. However, for maternal and child health, and family welfare (MCH & FW) services they all rely on allopathy. They are not aware that these services can be obtained from doctors in ISM & H also. Hence, they did not ask for these services. Dar (1995) did one study on common health problems among male adolescents and health services utilisation by them in an urban slum in Delhi. He found that majority of the adolescent males preferred private clinic, rests preferred clinic run by NGOs (non governmental organisations) and few preferred chemist shop, and one told about his father who was a Hakim (Unani practitioner). The respondents were of the opinion that if services were available at free of cost, they should be tapped first.

Study by Sundar (1995) found that in both rural and urban areas the utilisation of private health facilities is highest for acute illness. In the rural areas, the utilisation of public health facilities is very high for accidents and injuries. In both rural and urban areas, with an improvement in the income status of the household, the utilisation of the public health facilities comes down and the utilisation of the private health facilities goes up. Chhabra and Saraf (1997) examined the reasons behind taking admission in tertiary level health care facility (among reproductive health care seekers) in rural Central India. They have interviewed 1120 women over 6 months. The study found that illiterate people seek care for economic reasons, rich people for referral cases. Other important reasons were reputation, availability of desired expertise, appropriate health care insurance benefit, etc. Table 14 summarises important findings in this category.

Table 14. Opinion and attitudes towards traditional and modern healers

Appeal (opinion and attitudes towards traditional and modern healers)			
Author	Year	Place	Findings
Reddy	1966	India	ISM has profound hold on villagers socially and psychologically.
Kakar et al.	1972	Punjab, India	Indigenous practitioners dominate because they provide medicines (drugs) according to local customs, beliefs, and demand.
Rao	1972	India	Thriving of ISM is due to the non-availability of modern medicine.

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Srivastava and Bhandari	1974	Delhi, India	The reasons for choosing Ayurvedic system were 'lasting cure', 'no ill effects', 'more effective', and 'tried allopathy earlier'.
Chopra	1980	India	Allopathy is popular as it gives faster relief and also had greater efficacy in cure of most diseases. People often resorted to a combination of system of medicine.
Hans	1980	Aligarh, India	The reasons for preferring Ayurvedic system were 'slow but lasting cure', 'faith in the system', 'no side reaction', and 'inexpensive medicines', effective for children. Reasons for choosing Homoeopathy were also similar.
Nandan et al.	1982	Agra, India	Majority of people relied on traditional practitioners. Modern medicine was less in vogue due to high cost and technology and less numbers of practitioners.
Chopra	1991	Delhi, India	Beneficiaries were not aware that maternal and child health services can be obtained from doctors in ISM & H also.
Dar	1995	Delhi, India	Adolescent male preferred private clinic.
Sundar	1995	India	Utilisation of private health facilities is highest for acute illness and that of public health facilities is very high for accidents and injuries.
Chhabra and Saraf	1997	India	In a tertiary level facility (reproductive health care seekers) illiterate people seek care for economic reasons, rich people for referral cases, reputation, availability of desired expertise, appropriate health care insurance benefit, etc.

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2.4.2. Patients' or households Cognitive structures

The trend to sketch respondent's cognitive structure in qualitative research is a very recent phenomenon. Literature in this field is very limited. Majumder (2000) did an exploratory study to analyse cognitive structure of male and female respondents with respect to the question of good qualities that a spouse should have. The study used free-listing technique to collect information. Verma et al. (2001) studied male sexual health problems in a slum population in Mumbai. They have used 'Free-Listing' technique (where respondents are free to express their opinion in descending order according to importance) to collect the local vocabulary used for the study items. Mondal (2003) has also used free listing technique to study the reproductive morbidity in Bardhaman district of West Bengal. Free-listing technique is particularly useful to get culturally relevant

items (vocabulary) and to delineate the boundaries of a semantic or cultural domain. The technique can also be used to make inferences about patients' cognitive structure by computing 'salience' or importance of a particular opinion from the order of recall and the frequency of recall.

2.5. Research gaps

Important research gaps and scope for further research are highlighted as follows.

2.5.1. Dichotomy between economic and non-economic factors

There has been a dichotomised classification of the factors as economic ones and non-economic ones. Economists were of the opinion that economic factors only are relevant instruments of public policy and have more immediate value for forecasting. Non-economic factors are also important but less useful for policy purposes as they are not subject to sudden change (Feldstein 1979). Social scientists who belong to the other group have greatly acknowledged importance of economic as well as non-economic factors to understand the problem of low level of health services utilisation. If we closely look at the studies based on the former view, we can see that by and large those were conducted in developed countries with the consideration that there is only one system of medicine, namely allopathy in a very well organised set-up. In India, six different systems of medicine run parallel with many other unrecognised traditional ones. However, the dichotomy between economic view and non-economic may lead us to test whether non-economic factors are important predictors of utilisation of services and policy related instruments in Indian societies.

2.5.2. Technical and non-technical studies

Studies on health services utilisation, as reviewed in the present study, may again be classified into two broad categories. We may call one group as 'technical' to accommodate conceptual studies and those based on mathematical or econometric models. The other may be called 'non-technical' for all descriptive studies and those based on simple statistical comparisons. Though the present review of literature may not be exhaustive, if we look at the volume of technical studies across regions, we can see that majority of them were conducted either in developed nations or in Africa. If we

count the number of non-technical studies we can see that most of them were conducted in India. Although the shortfall in technical studies in India calls for immediate action, we should find some other valid reasons to do that. As the developed and developing African nations have already gained experience from empirical studies, the question at this stage is that whether the results can readily be implemented in Indian context or whether we should expedite to follow a similar path. Peters et al. (2002) put a note of caution that experience gained from the latest policy changes in North America and Western Europe cannot be simply adopted in India whose demographic and institutional realities are so different from those of high-income countries. We feel that appropriate localisation of global concepts would provide us with meaningful and reliable apparatus for a deeper insight into the problems. For example, we have mentioned earlier that many African nations have already introduced user fees in public health facilities or gradually introducing it. As a consequence of it technical studies on utilisation gained importance in Africa to examine the effect of cost and other relevant factors on utilisation of care. In India too the need for charging user fees is being greatly acknowledged. In some States including West Bengal, fees structure in secondary and tertiary levels has been revised. However, we are unaware of any effort in our country (if any) in pre-reform or post-reform period (after 1991) or in the recent past, which addressed the issue.

2.5.3. Efficacy of technical and non-technical studies

Feldstein (1967b) projected the view that crude statistical comparison of means, etc. is less useful for planning purposes. He advocated a 'complete-system of econometric models', which would answer the question – 'how do differences in variable x affect some other variable(s) in the health care system?' Very few studies in India meet Feldstein's proposition.

2.5.4. Gaps in technical studies in India

Adverting to technical studies in India, we see that Sodani (1997, 1999) estimated demand functions for a region in Rajasthan for all types of illness considering 11 independent variables from different categories. The dependent variable in that study is total expenditure (direct and indirect costs) on health care per patient. However, as the sources of seeking care (or systems of medicine) are not homogenous in nature and cost of a treatment varies according to sources of care and system of medicine, in strict sense

the estimated demand functions are not likely to reflect true picture. We feel that demand functions should be estimated according to type of care or system of medicine. Other technical studies (mainly by demographers) such as Gobindasamy and Ramesh (1997), Kavitha and Audinarayana (1997), considered maternal and child health related issues. Basu (1990) addressed the issue of culture only. GOI (1999) evaluated the functioning of the CHCs incorporating availability and geographic factors only. Moreover, none of the technical studies in India examined the effect of cost or price on the pattern of health care utilisation. Except Sodani (1997, 1999), others have not incorporated affordability factors also in their study. Large-scale sample surveys in recent past, such as Rapid Household Survey - Reproductive and Child Health Project, Phase I & II, National Family Health Survey – II have collected some information on type of house, toilet facility, source of drinking water, type of fuel used for cooking and lighting, household consumer durables, etc., to compute a index of standard of living. However, coefficient of this type of index in no way reflects income elasticity of demand for medical care, as many of the above factors are independent of a household income.

If we look at the sampling design of the study done by Inspiration (2002) in Cooch Behar, we find that 60 villages have been covered in the district and 10 households have been selected from each village. Of the 10 households, 7 have been selected purposively such that each has at least one infant, 1 household has been selected purposively such that it has one adolescent. Rest 2 households have been selected randomly. In such a sampling design the possibilities of biases cannot be ruled out. Moreover, as the study used 1-year recall period, it has aggravated the chances of misreporting.

2.5.5. Hospital records Vs Patients' perception

The framework developed by Feldstein (1967a, 1967b) is fully and the study by GOI (1999) is partially based on hospital records. As 'patient's illness' does not coincide with the 'doctor's disease' (Herzlich and Pierret 1985), inferences of those studies are likely to lose credibility in mixed socio-economic and cultural set-up.

2.5.6. Activity space Vs simple geographical accessorily

Nemet and Baily (2000) introduced a new concept of 'activity space' of a potential patient over the simple geographical accessibility to health care. The concept can hopefully be used in Indian contest after appropriate localisation of it as normal out-of-

door trips to market place, nearest towns, etc. in the present socio-economic set-up. Moreover, simple geographical distance may be meaning less for studies based on small sample size or small geographical area either because of respondent's inability to measure the distance or because of his or her ignorance about the availability of some facility or simply because of common sources or care for all. Incorporation of the concept of activity space may however, minimise all these shortcomings.

2.5.7. Aetiology and patients' cognitive structures

Importance of aetiological considerations and appeal towards a type of care or system of medicine has been recognised greatly by the medical sociologists, anthropologists, and doctors. In India the issue has been addressed mostly by the medical specialists while pursuing their post-graduate degree in social and community medicine. Studies on these issues are restricted in counting frequencies of patients expressing various opinions. However, to move a step further, one can use modern qualitative anthropological techniques to sketch patient's (or in true sense household's or respondent's) cognitive structure with respect to their choice of a type of care or system of medicine. Though there is no appropriate masterpiece or model to follow, the work of Verma et al. (2001) on male sexual health problems in a slum population in Mumbai may be helpful in this regard. The authors have used various anthropological techniques to get culturally relevant items (vocabulary), and computed 'salience' or importance of a particular opinion in people's mind.

However, it is to be mentioned that salience has been computed (in the above study) combining the frequency of an item with its 'average rank' in individual lists. Methodological question is that, whether the process of computing average rank is a valid action. Each individual list expresses one preference ordering where items are in ordinal scale. Characters in ordinal scale have identity and order only. They are not additives. So, computation of average rank is a meaningless operation. In such a situation it is necessary to develop a method, which will be free from such shortcomings.

2.5.8. Harmonising quantitative and qualitative approaches

One disadvantage of quantitative studies is that though they tell very precisely about 'what' or 'how much', they do not explain 'why'. Usually researchers try to find the clue (of 'why') from outside the models or studies. As a part of positive body of thought,

though econometric models provide value-free predictions, their meaningful interpretations very often incorporate prejudice or some sort of imagination of the researchers. If a study is designed to have both quantitative and qualitative sections, the former will give reliable estimates on 'what' and 'how much' and the latter will explain 'why'. One section will be a true complement of the other.