CHAPTER-2

LITERATURE REVIEW

2.1 Introduction:

In this chapter a comprehensive review of literature has been carried out. The review of literature is divided into two parts. First part represents the theoretical literature where various theories on healthcare utilisation behaviour are explained. Afterwards, the role of health insurance on healthcare utilisation behaviour and health expenditure is discussed. The second part describes empirical literature on factors determining healthcare utilisation behaviour and later on, the role of health insurance on healthcare utilisation and health expenditure (financial risk protection).

2.2 Theoretical Literatures:

2.2.1 Healthcare Utilisation Behaviour:

Several theoretical models of healthcare utilization have been proposed, of which the health belief model (Hochbaum, Rosenstock and Kegels in 1950’s), behavioural model (Anderson, 1968), and economic model (Grossman, 1972) are well known and widely used.

Health Belief Model:

It was developed by social psychologists Hochbaum, Rosenstock and Kegels. While working in the U.S. Public Health Services in the 1950’s, they created the model in reaction to an unsuccessful free tuberculosis screening program. The crux of the HBM is to evaluate health behaviour of individuals through examination of perceptions and attitudes towards disease and negative outcomes of certain actions. The model is based on assumption that the existence of three notions at the same time lead to change in behaviour which are (a) Perceived susceptibility and severity, (b) Perceived threat, and (c) Perceived benefits and barriers.

The figure-2.1 shows the theoretical proposition of Health Belief Model which includes three main necessary elements for behaviour change, namely; (a) individual perceptions, (b) modifying factors and, (c) likelihood of action.
**Individual Perceptions:**

Individual perceptions have two sub-components namely; (i) Perceived Susceptibility and (ii) Perceived Severity. These two components shape the individuals perceptions about state of health and consequently his/her health seeking behaviour.

(i) *Perceived Susceptibility:* This refers to a person's subjective perception of the risk of acquiring an illness or disease.

(ii) *Perceived Severity:* This refers to a person's feelings on the seriousness of contracting an illness or disease (or leaving the illness or disease untreated).
(a) **Modifying Factors:**

Modifying factors are individual characteristics, including demographic, psychosocial, and structural factors. These factors can affect perceptions (i.e., perceived seriousness, susceptibility, benefits, and barriers) of health-related behaviours. Age, sex, race, ethnicity, and education are included under demographic variables. Psychosocial variables include personality, social class, and peer and reference group pressure. Structural variables comprise knowledge about a certain disease and preceding contact with the disease. The HBM puts forward that modifying variables affect health-related behaviours indirectly by affecting perceived seriousness, susceptibility, benefits, and barriers.

Under susceptibility factor, individual recognises that his/her behaviour could show the way to a specific disease. Perceived threat takes the notion one step forward by investigating just how possible it is that the disease could be developed. The threat of disease can be enhanced by the environmental factors. Similarly, individual possessing certain demographic characteristics such as race, ethnicity, and socioeconomic status can be put further at risk. For instance; individuals living in poverty would be more vulnerable to a disease if they could not meet the expense of health care.

Finally, under modifying factors, cues to action are factors for which an individual recognizes that he could be in danger by severe disease. Cues to action factors like; education, symptoms and media information about the disease encourage the individual to set off a decision to modify behaviour.

(b) **Likelihood of Action:**

An individual will measure the benefits and the barriers to taking action and determine if it is worth it, when he becomes aware of the potential for developing a disease if his behaviour does not change, he will weigh out.

(i) **Perceived Benefits:** It denotes an individual's perception of the effectiveness of various actions available to reduce the threat of illness. S/he would accept the suggested health action if it is perceived as beneficial after evaluating the perceived susceptibility and perceived benefits of the prevention method.

(ii) **Perceived barriers** - This refers to an individual's conclusions on the hindrances to perform a prescribed health action. S/he measures the worth of the actions
against the perceptions that it may be expensive, uncertain (e.g., side effects), painful, laborious, or obstinate.

In crux, HBM postulates that a person’s perception affects the individual’s state of readiness to take an action. His or her perception is shaped and influenced by health beliefs about vulnerability to a particular health threat and the consequences of the health problem. This state intermingles with modifying factors such as demographic, socio-psychological and structural variables, and the perceived benefits of the health services lead to the likelihood of service utilization.

Though the model has been widely used for explaining and predicting health-related behaviour, it had got lots of criticisms. Janz and Becker (1984) criticized the model on the basis that it attempted to predict health-related behaviours by representing individual differences in beliefs and attitudes. However, it did not account for other factors that influence health behaviours. For instance, habitual health-related behaviours of a smoker might become relatively independent of his conscious health-related decision making processes. According to Christopher J (2010), the theoretical constructs that constituted the health belief model were broadly defined. But, how do these constructs of the model interact with one another is not clear. Therefore, Glanz et al., (2008) stated that different operationalization of the theoretical constructs could not be comparable across studies.

**Behavioural Model:**

Behavioural model by Andersen otherwise is known as health services utilization model. It is one of the frequently used models for analysing dynamics of patient utilisation of healthcare services. This model is also widely used to understand the disparities in utilisation of health services in different systems of healthcare. It was initially developed in the late 1960s to understand why families use health services. It was used to define and measure equitable access to healthcare and to support in developing programmes and policies to endorse equitable access (Andersen, 1995).

Figure-2.2 exhibits Andersen’s original model of health seeking behaviour. In this he emphasised three sets of predictive factors: predisposing, enabling and need factors. It predicts that a sequence of factors establishes the utilisation of health services. These are (i) predisposition to use services, (ii) ability to use services and
(iii) need to use services. His first study highlighted on the family as the unit of analysis. Therefore, several family-level variables were used. In his later versions of the model he focused on the individual as the unit of analysis (Andersen & Newman, 1973).

![Figure 2.2: The Initial Behavioural Model](Adapted from Andersen, 1995)

It is argued under the predisposing factors that a family’s or individual’s likelihood to use health services can be predicted from a set of personal characteristics which exist before the illness. Andersen (1968) categorized them into three sets: (i) family composition, (iii) social structure and (iii) health beliefs. Some of the specific variables like; age, sex, family size, ethnicity and social class, designate the position of the family in the social order. This in turn persuades their lifestyle and their physical and social environments.

The enabling factors are the factors which include material resources, income, having health insurance and the availability of health services. These factors enable a family/individual to access services. These are very much essential. Enabling factors are pre-conditions since a predisposition will not necessarily translate into utilisation if the ability to access services is lacking.
Lastly, in order to use health service, there must first be a need to use that service. According to Andersen (1968), there are two types of need factor: illness variables and response variables. The family/individual essentially recognise that there is an illness along with that they must also respond appropriately in order to access services.

Later on, structural model for health care utilization, a model for health care utilization have been proposed by Anderson and his colleagues (Anderson and Newman, 1973). Three sets of factors have been proposed which influence utilization of healthcare (see figure-2.3). The factors related to society and system are hypothesized to influence individual determinants which directly impose on service use. The current state of knowledge as well as people's attitude and beliefs about
health and illness are included in societal determinants. The factors operate either directly to influence the individual determinant or indirectly through their influence on the system factors. System factors include health services resources and organization of health services. On the other hand, it is the individual determinants that are directly related to health services utilization. As described in Anderson model, individual determinants of health services utilization are further sub divided into three main categories, namely (i) predisposing factors (ii) enabling factors (iii) need factors.

This model is widely used by the researchers and has also undergone several versions. The model also got criticism for several reasons. It has been criticized for not paying an adequate amount of attention to culture and social relations. However, Andersen argued that this social structure was included in the predisposing characteristics component. Wolinsky and Johnson (1991) highlighted the overemphasis of need and at the expense of health beliefs and social structure. Another limitation of the model pointed by Wilson et al. (2005) is its' emphasis on health care utilization or adopting health outcomes as a dichotomous variable, like; present or not present and treatment taken or not. It ignores various choices for healthcare provider including self-care.

**Economic Model:**

The “economic model”, however, postulates that the variables such as price and income interact with a set of other socio-demographic and need variables to generate the demand for health care which is represented by health care utilization. The most important characteristic in the economic model is the hypothesis that individuals produce a commodity called ‘health’ by combining their time and other inputs purchased from the market (one of the inputs could be medical/health care). So, the demand for health care is derived from a more basic demand for health (Grossman 1972). Hence, it is called derived demand since healthcare services enter into the utility function indirectly through health capital. In other words, the model considers health as a fundamental commodity, which implies that demand for health takes the place of the demand for healthcare, thus making the demand for healthcare a derived demand. Grossman advocates that health is both consumption and an investment commodity. This implies that individuals are both consumers and producers of health. When health is considered consumption good, it is presumed to yield direct
satisfaction and utility. When considered an investment good, it yields satisfaction to consumers indirectly through increased productivity, fewer sick days, and higher wages. Investment in health is costly as consumers must trade off time and resources dedicated to health.

Grossman’s model has been criticised for on many accounts. For example; a key criticism of the model is that it fails to take into account the uncertainty of the future health status and the uncertainty of the effects of investments in health production. It assumes health care is a constant life time investment and also ignores insurance markets in its analysis. It assumes that consumer has perfect information about the marginal efficiency of capital (MEC) of health care, interest rates, depreciation for both present and the future.

Unlike above three major models, Christianson (1976) stated that demand for healthcare services was made in stages. In the first stage, individual realises his/her medical problem and takes a decision on whether to seek care or not. In the second stage, if the option is to seek care, then he/she decides on where to seek the care. In the final stage h/she decides on how many number of visits to make to a particular or number of facilities. As a result this process calls for studies to utilise discrete choice models in a sequence and later a continuous model. However, Christianson’s work is not very distinct from above three models since at different stages of demand for healthcare an individual depends upon his or her belief (HBM model), need (Behavioural Model) and income level and price of healthcare (Economic Model).

2.2.2 Healthcare Utilisation and Health Expenditure: The Role of Health Insurance

The supposition on the impact of health insurance on healthcare utilisation and health expenditure implies that health insurance eliminates financial barriers to access healthcare and covers the cost of care after a health shock. It facilitates to smoothen up household or individual’s consumption, reduce asset sales and new debt. This in turn enhances the quantity and quality of care sought and improves health outcomes.

It is argued that insurance lowers (or avoids) the cost of treatment at the point of treatment as a result healthcare utilisation increases. Theoretically, insurance induce an increased consumption of health care since it acts as a price reduction effects while demanding healthcare (Grossman, 1972). Empirical evidence also shows
that individuals react to the change in price of healthcare (Besley, 1989). According to Nyman (2001), the HI is likely to generate not only ‘price reduction effects’ but also ‘income transfer effects’. His new theory suggests that the difference between the payoff and the premium is a transfer of income from those who remain healthy to the persons who become ill. Hence, insurance-induced health-care utilisation is positively related to the gap between the premium and payoff.

The most notable theoretical development on the impact of health insurance is the problem of “moral hazard”. According to Pauly (1968 and 1974) and Zeckhauser (1970) ‘Moral Hazard’ refers to the likely malfeasance of an individual making purchases that are partly or fully paid by others. It is like to occur when members of a HI plan use services more frequently than they would have had they not been the members. There exist two types of moral hazard. One is called as ex-ante and other as ex-post. Ex-ante moral hazard refers to the case of the reduced consumption of preventive care, and changes in life style, which increase the probability of an individual falling ill, and experiencing a more severe illness. Ex-post moral hazard refers to the increased consumption of health services, and the use of more expensive services, once an illness has occurred.

Health insurance can also encourage unnecessary health-care utilisation. Arrow (1963) in his seminal paper emphasised the special characteristics of the health-care market where the agency problem, both, between the doctor and the patient and between the doctor and the health insurance, and the physician’s behaviour concerning demand inducement were highlighted. These features show the way to moral hazard problem in both sides. One is from consumer side another from providers’ side. Consumers insured under health insurance scheme have a propensity to demand more health care since they do not have to pay the full cost for treatment (termed as consumer moral hazard). In the case of providers, they have an incentive to render more or unnecessary care than might be medically appropriate (provider-induced moral hazard). As a result, according to Ekman (2007), this will escalate the cost of healthcare due to increase in financial insecurity. However, Siegelman (2004) argues that adverse selection in insurance markets could be a possibility, but, it is often not a serious problem. This is because health insurance schemes operate for large groups of randomly selected individuals.
2.3  Empirical Literatures:

2.3.1  Determinants of Healthcare Utilization Behaviour:

Most of the empirical examinations on the determinants of healthcare utilisation behaviour are based on the micro econometric utility maximisation principle. Grossman’s derived demand model of healthcare has been widely used. However, in recent years some of the limitations in theoretical and empirical model specification of Grossman have been tailored and various sophisticated econometric techniques have been employed to empirically estimate the demand for health care in various developing countries case. The followings are some of the empirical literature reviewed which are having significance for the proposed study.

Heller (1982) analysed the factors responsible for the demand for health care services in Peninsular Malaysia. The author tried to determine the sensitivity of households’ demand for outpatients and inpatients care to changes in various vital variables like; time costs and financial resources, income and households’ behaviour of seeking traditional medical practitioners as opposed to modern health facilities. In this study, he used a logit model, and estimated using the Two-Stage Least Squares (2SLS) method after transforming the dependent variable. He found that demand for health services, as measured by number of visits, was very inelastic to economic variables such as cash price, cost in time and income. Individuals were found to react to the relative prices of alternative sources of health care.

Theoretical and empirical frameworks were developed by Mwabu (1984) for analyzing choices of health care facilities by households in Kenya during episodes of illness. The study found the evidence that education, quality of health care facilities and religion were statistically significant factors influencing the choice of facility. Two important economic variables such as time and money costs were found to be marginally affect the demand for medical care.

A model of demand for primary health care in the developing world was developed by Akin et al. (1986). The main objectives of the study were to look at medical facility use, expenditure patterns and to provide an analysis of the demand for medical services. Various econometric models were used depending upon the nature of the dependent variables. For instance; conditional probit model was used for infant immunization, tobit for prenatal care and multiple logit for estimation of
outpatient and delivery services. Economic variables were found to be statistically insignificant. They argued that poverty and costs had little influence on demand for health care. However, variables like education, urban residence and perceived seriousness of the illness affected utilization patterns significantly.

Mwabu et al. (1991) investigated the effect of the pricing reforms to health care demand in Kenya. They verified the hypothesis that user-charges had a negative outcome on demand for health care. They used both the data when user-charges were in place and when the government had suspended it. They used a utility maximization model for this study. They found evidence that user-charges discourage the utilization of health facilities. In a study on demand for health services in rural Tanzania, Sahn et al. (2003) found that there was a substitution effect presence in healthcare market. As prices of public services rose, there was substantial increase in demand for private services. A decline in the probability of using public clinics or public hospitals was resulted while doubling the price of them. Similarly, while doubling the price of private clinics was accompanied by a large increase in the use of public clinics. While examining in the case of Ghana, Lavy and Quigley (1993) found that the price elasticity for both inpatient and outpatient visits were negative and significant. However, the degree is higher for inpatient visits than for outpatients.

Poor and non-poor individuals behave differently to the varying prices of healthcare. Studies by Dor and Van De Gaag(1988), Mwabu et al. (1993), Akin et al (1995) found that the poor were not affected any differently from the non-poor to the increased prices of health services. Contrasts to these above studies there studies showing that the magnitude of the price effect varies with changes in an individual’s welfare status. Especially, studies by Getler et al. (1987) and Lindelow (2002) found that the demand were more elastic for the lowest or poorest quintile and inelastic for the top quintile. For that reason, increases in user charges would be regressive policy on the part of the government since the poor are more adversely affected than the non-poor. Lindelow (2002) examined the demand for health care using a multinomial logit model based on the 1996/97 household survey data of rural Mozambique. He showed that the price was an important determinant of choice. In his study, he defined prices as the composite user fees and time costs associated with consultations at different providers to examine the effect of price
elasticity of health care. He advocated that the abolition of poverty, independent of development in physical access to health care and education, would have only a negligible effect on health care choices.

Kenkel (1990) and Hsieh and Lin (1997) in their studies emphasised the role of information on the demand for medical care. Kenkel (1990) using probit results indicated that more informed consumers are likely to visit a physician than their counterpart. Thompson et al. (2003) pointed out that lack of adequate health information affected health care utilization at various health facilities which was especially between rural and urban sector in Kazakhstan. They found this evidence while analyzing health-seeking behaviour of rural and urban households.

A study by Glick, et al. (2000), investigated on utilization patterns and demand determinants for education and health services in Madagascar. They used nested logit models in their estimation and found that cost of treatment (price) had negative and significant effects on hospital care. They assumed household expenditures per capita as proxy for income variable to study its effect on choice of care. They found that it had strong effects on choice of care. The richer individuals were found more likely to seek care from private doctors, private clinics and private pharmacies than the poor. Availability of vaccines in hospitals and availability of malaria medicines increased demand at these facilities.

Quality of health care is assumed as one of the key determinants of choice of health care provider. Studies have used different indicators of quality such as; total expenditure per person in the population served (Akin et al., 1986); presence of well functioning diagnostic equipment such as X-ray machines and number of medical staff (Mwabu et al., 1993); drug availability and physical infrastructure (Ellis et al., 1994). The findings indicated that the availability of essential inputs such as drugs and medical staff was positively associated with the use of medical services. There were strong positive quality impacts on demand for health care (Hallman, 1999). Availability of drugs and supplies and; staff composition had important positive effects on demand for public and private care services while use of traditional healers was increased if the practitioner had recently attended a health training session. Similarly, study by Hutchinson (1999) found the evidence that the presence of a doctor at a health unit,
availability of antibiotics and general upkeep of a facility had a positive impact on whether the poor utilized the nearest modern health facility or not. Utilization will be very low if people including the poor perceive services provided were of low quality (Wills, 1993; Audibert and Mathonnat, 2000).

Studies on healthcare utilization behaviour in India are mostly based on maternal and child healthcare. Demographic, socio-economic, cultural and community level factors like availability and accessibility of quality health services are the major factors that determine maternal and child healthcare utilization (Navaneetham and Dharmalingam, 2002; Kesterton, 2010; Stephenson, 2002; Bhatia and Cleland, 1995). However, some of the Indian studies that have highlighted the issue of demand for healthcare in general without taking consideration of specific care (like; maternal and child care) are presented below.

The study by Majumdar (2006) is based on primary survey data collected from Sadar sub-divisions of Cooch Behar and Jalpaiguri districts of North Bengal (West Bengal, India). He used logit model to estimate the probability of utilising health care from modern sources and found that demographic factors like age and family size have been found important determinants of utilisation of care. The regression analyses indicate that children in the 5-14 age groups are by and large neglected. He suggested that special care must be taken to raise the rate of utilisation of care for morbid children in the 5-14 age groups. Probability of utilisation is seen higher in small families. The demand for public health facilities is tremendously high as compared to that of private health facilities in rural areas of the districts suggesting that privatisation or plan of leasing out the primary health care system to private operators will not be a good idea for policy maker.

A study by Peters et al. (2004) investigated the impact of a health systems development project in Uttar Pradesh, India, on utilization of health services and patient satisfaction for the poor and lower caste members. The main objective of the study was to examine the impact of quality improvement on utilisation. Their study was based on a quasi-experimental design to compare changes in new outpatient visits and patient satisfaction at project and non-project health facilities. They found that there was a consistent increase in mean monthly outpatient visits at all levels of
project sites compared to controls, indicating that the project has improved overall utilization levels.

The study of Gupta & Dasgupta (2002) was based on 1994–95 NCAER HDI data on rural India to explore the possible effects of an increase in user fees on demand for health care. A system of equations using both nested and non-nested multinomial logit framework was estimated, and arc price elasticities were calculated. The estimates revealed very low values of these elasticities in the government sector as well as for private qualified providers. Also, the elasticities were income-sensitive, indicating that the poor are more price-sensitive. They suggested that there might be some scope to levy user fees in the government as well as private sector facilities.

Borah (2006) using mixed multinomial logistic (MMNL) model based on the 42nd round NSS data investigates the determinants of outpatient health care provider choice in rural India. He used MMNL model on account of modelling of unobserved heterogeneity that results from unobserved or unrecorded factors such as quality of care, tastes and attitudes, waiting times, etc. It is argued by him that the MMNL model provides a very general framework for incorporating both observed and unobserved heterogeneity. It allows for flexible substitution patterns between alternative health care providers. NSS data does not provide the prices of alternative providers that an individual did not visit. Thus he imputed these prices by the multiple imputation technique. His study results show that price and distance to a health facility play significant roles in health care provider choice decision. When health status is poor, distance plays a less significant role in an adult’s provider choice decision. The price elasticity of demand for outpatient care varies with income. He pointed out that low-income groups were more price-sensitive than high-income ones. Furthermore, outpatient care for children is more price-elastic than that for adults. This reflects the socio-economic structure of a typical household in rural India, whereas an adult’s health is more important than that of a child for the household’s economic sustenance.

2.3.2 Role of health insurance on healthcare utilisation and health expenditure:

In recent years, there is a growing concern over the role of health insurance on healthcare utilisation and financial protection. This is because of the fact that health
insurance is seen as a mechanism to improve utilisation in healthcare services and to provide protection to catastrophic health expenditure mainly in low and middle income countries where health insurance penetration is very low. Therefore, most of the studies reviewed are focused on the developing countries case. The potential for moral hazard or the overuse of medical care is a view that opponents of subsidized health insurance often hold. In our view however, given the lack of access and other constraints that poor vulnerable households face, the likelihood of demand side moral hazard seems unlikely. To date, evidence is weak on the matter however, so it is not possible to prove one way or the other.

Preker et al. (2002) studied the effectiveness of community health insurance in meeting the cost of illness reviewing various macro level as well as micro level studies from Asia and African regions. Micro-level household data analysis indicated that community financing improve access by rural and informal sector workers to needed health care and provides them with some financial protection against the cost of illness. Macro-level cross-country analysis supported to the hypothesis that risk-sharing in health financing matters in terms of its impact on both the level and distribution of health, financial fairness and responsiveness indicators. Some of the policies prescription provided by them out of that study were (a) increased and well-targeted subsidies to pay for the premiums of low-income populations; (b) insurance to protect against expenditure fluctuations and re-insurance to enlarge the effective size of small risk pools; (c) effective prevention and case management techniques to limit expenditure fluctuations; (d) technical support to strengthen the management capacity of local schemes; and (e) establishment and strengthening of links with the formal financing and provider networks.

Arhin (1995) in assessing the viability of rural health insurance as an alternative to user fees found that the scheme in Ghana removed a barrier to admission. This in turn led to earlier reporting of patients and increased utilization among the insured.

Yip and Berman (2001) analyzed the Egyptian School Health Insurance Programme (SHIP), which aimed to increase access and equity in access to health services. They used Two Part Model and data from a survey of over 10,000 households and found that insured children had a higher probability of seeking outpatient care than the uninsured. This was found to be more pronounced in particular those in the lowest
income quintile. On an average, children under SHIP scheme are 34 percent more likely to visit a provider as compared to the ‘not in school’ children, and 9 percent more likely than the ‘in school/without SHIP scheme’ sample. They also showed that SHIP was able to reduce out-of-pocket health expenditures by one half for the middle-income group, but only marginally for low and high-income groups. One limitation of the study was that the effect of illness severity was not controlled for within the regression analysis.

In Vietnam, analysing VLSS data by Trivedi (2002) concludes that health insurance has a strong positive effect on the use of outpatient services at public hospitals, and that income elasticity of demand is positive. However, the analysis is unable to distinguish between compulsory and voluntary insured patients. Waters (1999) assesses the impact of the General Health Insurance scheme for formal sector workers and a separate scheme for agricultural workers in rural communities, both in Ecuador. He finds that being insured has a strong, positive, and highly statistically significant effect on the use of curative services, but no statistically significant effect on the use of preventive services. He also concludes that the scheme increases access to health care for its members but has a negative impact on equity overall. The primary reason for this is that insurance coverage tends to be for those already in employments, and for whom access is already relatively good.

Harman and Nolan (2001) examined the probability of having had a hospital in-patient stay in the past year. The econometric approach adopted involves estimating jointly a simultaneous linear probability model of insurance demand and service utilization. In first stage an equation is estimated to model the demand for insurance that provides the correction for endogeneity of the service utilisation. In second stage treating insurance as exogenous, the probability of having had a hospital stay found to be 3 percent higher for those with health insurance. When insurance is treated endogenously, these effects approximately double.

The effect of health insurance on treatment seeking behaviour has been examined by Jowett et al. (2004) using household survey data conducted in three provinces of Vietnam. A multinomial logit model has been used to analyse decisions regarding both the type of provider sought and type of care received. To take into account the potential selection bias, insurance status is treated both exogenously and
endogenously. The major findings of their study suggest that insured patients are more likely to use outpatient facilities and public providers and this effect is particularly strong at lower income levels.

Study by Ataguba and Goudge (2012) using propensity score matching investigated the impact of private insurance via membership of a medical scheme in South Africa on health-care utilisation. They found in their study that insurance coverage increases the use of private health services as would be expected but there is no significant effect on the use of public services.

The impact of the subsidized regime component of a national health insurance program in Colombia is examined by Trujillo et al. (2005). Using propensity score matching (PSM) techniques, the authors find the intervention to significantly increase utilization of medical care by the poor and uninsured individuals.

The impact of the contributory regime component of the same Colombian insurance scheme has been examined by Giedion et al. (2007) using an instrumental variables (IV) approach. They find that for most of their access and use indicators, health insurance has a positive causal impact on access.

Chen et al. (2007) found Taiwan’s National Health Insurance scheme to increase utilization of inpatient and outpatient care among the elderly. The effect was more pronounced among the low and middle-income groups. They made use of the econometric technique of difference in differences (DD) to address issues of endogeneity and found that one year after the establishment of the health insurance scheme, previously uninsured elderly people had increased their use of outpatient care by nearly 28 percent while previously insured elderly people increased their use by over 13 percent. Therefore the difference in difference change was an increase of nearly 15 percent, which could be exclusively attributed to the National Health Insurance scheme.

Wagstaff et al. (2007) estimated the impact of a national rural health insurance scheme in China and found that the scheme increased utilization of both inpatient and outpatient care by 20-30 percent. However, the scheme had no impact on utilization among the poor. Yip et al. (2008) used a combination of difference in
differences and Propensity Score Matching to find that the China health insurance program increased utilization by 70 percent.

However, in a recent study, King et al. (2009) examine the impact of the randomly assigned Mexican universal health insurance program Seguro Popular. As discussed above, randomized health insurance is rare. The phased rollout of the program provides an experimental design for a study of a program aimed at reaching 50 million uninsured Mexicans. The study shows that the program has no significant impact on the use of medical services. On the other hand, they do find strong financial protection impact.

The Health Card Scheme (CAM) in Burundi studied by Arhin illustrated that in the month preceding the study, of the households who held valid CAM cards, 27.9 percent had incurred out-of-pocket expenses for medical consultations and/or drug purchases, while of those households without valid cards, and the corresponding figure was 39.85 percent. The mean expenditure per treatment was also lower for scheme members (Arhin, 1994). A study by DeRoeck et al. (1996) found that the Ecuador Seguridad Social Campesino (SSC) rural health facility significantly increased financial protection for its members: out-of-pocket expenditure for health care of SSC members were only one-third those of non-members. Study by Ekman (2007) mentioned that insurance is found reduce out-of-pocket spending in Jordan.

Study by Sepehri et al. (2006) estimated the effect of insurance on out-of-pocket health expenditures using the Vietnam Living Standards Surveys for 1993 and 1998 and appropriate models for panel data. Their findings they advocated that health insurance reduced health expenditure. Health insurance found to reduce out-of-pocket expenditure between 16 and 18 percent and the reduction in expenditure was more pronounced for individuals with lower incomes. At mean income, the effect of health insurance is to reduce health expenditures between 28 and 35 percent. They also mentioned some of the methodological issues in their study while seeing the effect of HI on OOP expenditure. Their findings suggested that health insurance reduces health expenditure when unobserved heterogeneity is accounted for.

Studies by Carrin et al. (1999), Jütting (2001) and) found financial protection is marginal or limited, while, Ranson (2001) has found no evidence of an effective
protection effect. Most importantly the findings suggest that most schemes fail to cover the least well-off groups in the catchment areas.

There is an increasing emphasis on the promotion and development of community based health insurance to meet the poor and informal sector workers HI need in India, while there is a little evidence about its effectiveness. Study by Aggarwal (2010) evaluated the impact of India’s Yeshasvini CBHI scheme on health-care utilisation, financial protection, treatment outcomes and economic well-being using propensity score matching techniques. She found that the scheme has increased utilisation of health-care services, reduced OOP spending, and ensured better health and economic outcomes. However, she has highlighted the methodological limitation on her study while emphasising difference-in-difference method would have better option, had the requisite data available to see the changes between ‘programme participant’ and ‘non-programme participant’ households before and after the programme’s implementation.

A study by Devadasan et al. (2007) in their study taking two CBHI schemes (ACCORD and SEWA) into consideration found that these schemes are able to protect their members against catastrophic health expenditure, but only to a limited level. However, this protection can be further enhanced if some design changes are incorporated. To begin with, the upper limit of the benefit package needs to be raised. To keep the premiums affordable, donors or the government would need to directly subsidise the premium, especially for the poorer sections of society.

2.4 Summary:

In this chapter an extensive survey of relevant theoretical and empirical literatures has been carried out. A summary of a range of theoretical as well as empirical literatures under different themes are provided in tabular form in Appendix-2A. Among various theoretical literature on healthcare utilisation health belief model and Andersen’s behavioural model are two models widely used theoretical models based on socio-psychology and behaviour of the consumer whereas Grossman’s demand for health model is widely used as an economic model for empirical purpose. All of these model have been undergone several criticisms and modification accordingly. In empirical literatures, demand for healthcare or utilisation of healthcare is treated as derived demand healthcare services enter the
utility function indirectly through health capital. Indirect utility function has been widely used to describe individual health seeking behaviour. Depending upon the nature of dependent variables various econometric techniques like logit, probit, MN Logit, and OLS have been used. Most of the empirical literatures are found to be using discrete choice model since the choice set is of discrete in nature.

The results of the empirical studies have differed in several ways. A statistically insignificant positive relationship between income (wage rate) and the demand for health care have been found in some of literatures. Prices have also been insignificant in some studies. These are not in line with economic theory. There are no general conclusive results with respect to the relation between various socio-economic, supply side independent variables and health seeking behaviour.

As far as theoretical literatures on the role of health insurance and healthcare utilisation and financial risk protection is concerned insurance plays the role of price reduction and income transfer effects which leads to increased consumption of health care. The theory of moral hazard has been given serious consideration in both theoretical and empirical literatures of healthcare utilisation.

From the empirical survey of literatures it is found that there are confounding evidences on the role of health insurance in providing financial protection and facilitating healthcare utilisation; some studies are found positive while others negative impacts. Though most of the studies confirm higher probability of healthcare utilisation with insurance than without of it; the impact on reducing out of pocket expenditure is very much ambiguous. Hence, it is worthy to investigate the same in Indian case where there is a dearth in literature in this respect.
**Appendix-2A: Summary of Review of Selected Empirical Studies**

**Table-2.1: Determinants of Healthcare Utilization behaviour**

<table>
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<tr>
<th>Sl no.</th>
<th>Author, country</th>
<th>Data</th>
<th>Estimation technique</th>
<th>Dependent variables</th>
<th>Explanatory variables</th>
<th>Major findings</th>
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</thead>
</table>
| 1.    | Heller (1982), Peninsular Malaysia | Cross-section | Logit and two-stage least squares regression | Number of outpatient and inpatient visits | Price of the healthcare services, relative price of alternative sources of medical care, income, time cost; travel time and treatment time, | • Highly inelastic to the cash price and to the cost in time of utilization  
   • Also inelastic with respect to income  
   • Responsive to the time spent on utilization, with high travel and treatment time causing reduced demand for services |
| 2.    | Akin (1986), Bicol Region of the Philippines | The Bicol Multipurpose Survey, 1978 | Conditional Probit, Tobit, multiple logit | Adult Outpatients, Child outpatient, prenatal care, Delivery type, well baby care, immunization for newborn | Cash price, transport cost, transport time, waiting time, attendant physician, drug cost, insurance, asset value, age, sex, residence, education, serious illness, mother’s home | • Economic variables were found to be statistically insignificant, implying poverty and costs have little influence  
   • Education, urban residence and perceived seriousness of the illness played greater role |
| 3.    | Sahn et al (2003), Tanzania | Tanzania Human Resource Development Survey | Nested multinomial logit model | Choices of care | Age, education, household size, marital status, illness length, gender, log of consumption, adequate doctor quality, good doctor quality, price of the services of various providers | • As prices of public services rose, there was substantial substitution into private services.  
   • Doubling the price of public clinics or public hospitals resulted in a decline in the probability of their use of 0.10.  
   • While doubling the price of private clinics was accompanied by a large increase in the use of public clinics. |
<p>| 4.    | Kenkel, a survey of | Two-stage | Use of healthcare, Education, Occupation, | | | • more informed consumers are likely to visit a |</p>
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</table>
| 5.    | Ellis et al., (1994), Egypt | Household survey conducted in Cairo, Egypt in 1992 | Multi-stage discrete choice model | Utilization of inpatient and outpatient health services | Age, sex, education, income, insurance, price of services, | • More affluent consumers prefer the higher cost, higher quality private and charitable hospitals.  
• Age, sex, education, and insurance are also found to strongly impact the use of medical services.  
• Drug availability and physical infrastructure affects the utilization |
| 6.    | Hallman (1999), Philippines | Cebu Longitudinal Health and Nutrition Study A series | nested logit model | Choice of providers | Distance, price of various health services, number of personnel, Doctor ratio, Nurse ratio, ORT availability, | • Distance to care is important for reducing demand  
• user fees that show no significant effects on the use of modern public or private services.  
• Availability of drugs and supplies and; staff |
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| 7.    | Majumdar (2006), India | primary survey data collected from Sadar subdivisions of Cooch Behar and Jalpaiguri districts of North Bengal (West Bengal, India) | Logit model | Utilization of healthcare in modern healthcare facilities | Socio-economic and demographic variables | - that demographic factors like age and family size have been found important determinants of utilization of care  
- Probability of utilization is seen higher in small families  
- The demand for public health facilities is tremendously high as compared to that of private health facilities in rural areas of the districts |
| 8.    | Peters et al. (2004), India | Primary survey data, baseline and follow up data | Quasi-experimental design, Multiple linear regression model | Utilization of outpatient facilities, user perceptions/satisfaction, and economic status | Socio-economic and demographic variables | - A consistent increase in mean monthly outpatient visits at all levels of project sites compared to controls, indicating that the project has improved overall utilization levels.  
- Improve quality of care can have positive impacts on utilization and on patient satisfaction |
| 9.    | Gupta &Dasgupta (2002), India | NCAER HDI data, 1994-95 | Nested and Non-Nested Multinomial Logit, arc price | Choice of Providers | Socio-economic and demographic variables, fees per service, quality of services (facility open | - price elasticities were found to be very low for both government and private qualifies facilities  
- Elasticities were income-sensitive, indicating that the poor are more price-sensitive. |
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</table>
| 10.   | Borah (2006), India | 42nd round NSS data | Mixed Multinomial Logistic | Outpatient health care provider choice | Socio-economic and demographic variables, price of the service, quality of services | - There may be some scope to levy user fees in the government as well as private sector facilities  
  - price and distance to a health facility play significant roles in health care provider choice decision  
  - When health status is poor, distance plays a less significant role in an adult’s provider choice decision  
  - price elasticity of demand for outpatient care varies with income, with low-income groups being more price-sensitive than high-income ones  
  - outpatient care for children is more price-elastic than that for adults |
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Preker et al. (2002), Asia and African regions</td>
<td>conducted a literature survey based on 45 published and unpublished reports and conference proceedings completed after 1990</td>
<td>Effectiveness of community financing schemes in resource mobilization, financial protection, inclusiveness</td>
<td>Micro level household data reveals that community financing improve access by rural and informal sector workers to needed health care and provides them with some financial protection against the cost of illness</td>
<td></td>
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<td>3.</td>
<td>Trivedi (2002), Vietnam</td>
<td>Vietnam Living Standard Survey (VLSS) 1997-98 data</td>
<td>Logit, Fixed effect logit</td>
<td>self-prescribed use of pharmaceutical drugs, the use of government hospitals, commune health centers, and private health in addition to outpatient services at public hospitals</td>
<td>Health insurance has a strong positive effect on the use of outpatient services at public hospitals • Income elasticity of demand is positive</td>
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<td>4.</td>
<td>Waters (1999), Ecuador</td>
<td>Ecuador Living Standards Measurement Survey (1995)</td>
<td>Bivariate Probit used to curb endogeneity effect of explanatory variables</td>
<td>Probability of having health insurance and seeking health care</td>
<td>Individual level: age; sex; education; severity of illness; and wage level Household level: quintile of adjusted per-capita consumption; number of persons in the household; main language spoken; distance to the closest health centre; region of residence; and level of urbanization Community level: an index for the price of health care; and a series of variables reflecting characteristics of health facilities in the community (presence of a health centre, presence of a hospital, presence of doctors, and availability of drugs)</td>
<td>• General Health Insurance (GHI) programme covers workers in the formal sector, is found to have a strong positive association with the use of curative health care after correcting for selection bias, but no significant effect on the use of preventive care • Seguro Campesino Social (SSC) programme, directed at farming populations, has positive but insignificant associations with both curative and preventive care</td>
</tr>
<tr>
<td>5.</td>
<td>Wagstaff et al.</td>
<td>National Health</td>
<td>A combined method of both</td>
<td>Inpatient and outpatient visits</td>
<td>Socio-economic characteristics of</td>
<td>• The scheme has increased outpatient and inpatient utilization (by 20-30%), but has had</td>
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<td>40</td>
<td>(2012), China</td>
<td>Service Survey (NHSS) panel data</td>
<td>Propensity Score Matching and Differences-in-Differences</td>
<td>households and its head, distance to closest facilities, health insurance, GDP per capita in county, regions</td>
<td>no impact on out-of-pocket spending or on utilization among the poor.</td>
<td></td>
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<tr>
<td>6.</td>
<td>Kings et al. (2009), Mexico</td>
<td>Primary survey; baseline survey (August, 2005, to September, 2005) and follow-up survey 10 months later (July, 2006, to August, 2006)</td>
<td>Experimental design, estimated average causal effects non-parametrically</td>
<td>Utilization of health services (inpatient and patient services)</td>
<td>- the program has no significant impact on the use of medical services</td>
<td></td>
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<td>7.</td>
<td>Ranson (2001), India</td>
<td>cross-sectional cohort study of both SEWA and non-SEWA holders</td>
<td>Case control sample design, logit model</td>
<td>Inclusion of the poor, hospital utilization, and expenditure</td>
<td>Socio-economic characteristics of households and individuals, possession of SEWA insurance scheme, characteristics of hospitals</td>
<td>- Membership in SEWA was not significantly associated with increased frequency of hospitalization</td>
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<td>Sl no.</td>
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<td>Dependent variables</td>
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<tr>
<td>8.</td>
<td>Aggarwal (2010), India</td>
<td>4109 randomly selected households in villages in rural Karnataka, (Yeshasvini and non Yeshasvini scheme holders)</td>
<td>Propensity score matching techniques</td>
<td>Utilisation of health-care services and out-of-pocket spending</td>
<td>Socio-economic characteristics of households/ individuals and head of the household, community level facility index</td>
<td>• Scheme has increased utilization of health-care services</td>
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</tbody>
</table>
### Table-2.3: Financial Risk Protection: The Role of Health Insurance

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<tr>
<th>Sl no.</th>
<th>Author, country</th>
<th>Data</th>
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<th>Explanatory variables</th>
<th>Major findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Arhin (1994), Burundi</td>
<td>Primary survey data based on Qualitative and Quantitative information (Focus group discussions, a household survey, and a retrospective outpatient survey)</td>
<td>Descriptive statistics</td>
<td>Recurrent costs of outpatient drugs consumed by participating households</td>
<td></td>
<td>• the households who held valid CAM cards, 27.9% had incurred out-of-pocket expenses for medical consultations and/or drug purchases, while of those households without valid cards, and the corresponding figure was 39.85% • mean expenditure per treatment was also lower for scheme members</td>
</tr>
<tr>
<td>2.</td>
<td>Ekman (2007), Jordan</td>
<td>Jordan HealthcareUtilization and Expenditure Survey (JHUES) collected in 2000 with a sub-sample of around 8,300 individuals</td>
<td>Econometric techniques (two-part model)</td>
<td>outpatient care utilization (two-week reference period); inpatient episodes and its related spending</td>
<td>Socio-economic characteristics of households/individuals/household head, insurance coverage, self-assessed health information</td>
<td>• the effect of insurance on the outcome indicators differ substantially across the various programs • insurance is found to increase the intensity of utilization and reduce out-of-pocket spending</td>
</tr>
<tr>
<td>3.</td>
<td>Sepehri et al. (2006), Vietnam</td>
<td>Vietnam Living Standards Surveys for 1993 and 1998 used as panel data with information on 17 450 individuals</td>
<td>Tobit and Truncated regression models</td>
<td>Expenditure on health care</td>
<td>Severity of illness, income, insurance status, age, education, and marital status</td>
<td>• Out-of-pocket health expenditures are influenced by a wide range of variables, including income (approximated by consumption expenditure</td>
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<td>Sl no.</td>
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<td>4.</td>
<td>Carrin et al (1999), China</td>
<td>household survey in 14 counties based on experimental design</td>
<td>Descriptive statistics</td>
<td>Expenditure on health care, reimbursement rate</td>
<td>Counties, income groups</td>
<td>Health insurance is found to reduce out-of-pocket expenditure between 16 and 18% and the reduction in expenditure is more pronounced for individuals with lower incomes</td>
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<tr>
<td>5.</td>
<td>Ranson (2001), India</td>
<td>cross-sectional cohort study of both SEWA and non-SEWA</td>
<td>Case control sample design, logit model</td>
<td>Inclusion of the poor, hospital utilization, and</td>
<td>Socio-economic characteristics of households and</td>
<td>'Rural cooperative medical systems' (RCMS) had reduced the risk of paying health care bills that would otherwise be a burden on families. Burden of health care costs on families was reduced, more so in some counties than in others, but this reduction has been modest. The research results indicate that there is ample room for improvement.</td>
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<td>Sl no.</td>
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<td></td>
<td></td>
<td>holders</td>
<td></td>
<td>expenditure</td>
<td>individuals, possession of SEWA insurance scheme, characteristics of hospitals</td>
<td>● Most importantly the findings suggest that most schemes fail to cover the least well-off groups in the catchment areas</td>
</tr>
<tr>
<td>6.</td>
<td>Aggarwal (2010), India</td>
<td>4109 randomly selected households in villages in rural Karnataka, (Yeshasvini and non Yeshasvini scheme holders)</td>
<td>Propensity score matching techniques</td>
<td>Utilization of health-care services and out-of-pocket spending</td>
<td>Socio-economic characteristics of households/individuals and head of the household, community level facility index</td>
<td>● scheme has reduced OOP spending and hence able to protect them from risk of catastrophic expenditure</td>
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<tr>
<td>7.</td>
<td>Devadasan et al. (2007), India</td>
<td>Primary data collected from hospitals registered under ACCORD and SEWA for those individuals registered under these schemes</td>
<td>Reviewed the insurance claims registers by the customer of At both ACCORD and SEWA and identified all the scheme members who were hospitalized between the period April 2003 to March 2004, and who registered this hospitalization with the scheme</td>
<td>total bill amount and amount paid out-of-pocket by the patient</td>
<td>Socio-economic characteristics of households/individuals of those who suffered illness</td>
<td>● these schemes are able to protect their members against catastrophic health expenditure, but only to a limited level</td>
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</tbody>
</table>