

2.1 Introduction to Literature Review

Various research studies related to burden of disease and its impact on utilisation of healthcare services and out-of-pocket healthcare expenditure by the households have been conducted in India and rest of the world separately or combining any of these two. Further, all the earlier works or studies were primarily focused on identification of the factors affecting either morbidity pattern, or utilisation of healthcare services or out of pocket healthcare expenditure by the households in different urban and rural settings. Literature on research combining all these three aspects together and their related issues is less extensive and less known. More specifically, study relating to impact burden of disease on both utilisation of healthcare services and out of pocket healthcare expenditure by the households in any purely urban area or corporation city is limited or rare. This chapter makes an attempt to review the earlier exclusive and important studies related to the research problem. The chapter deals with two vital aspects of research: one is theoretical background and the other one is review of empirical studies conducted on the related issue. In addition, the available literature and studies are grouped into three broad areas according to the concerned research problem. They are presented as follows:

1. Review of literature related to epidemiological profile or morbidity pattern of the people.
2. Review of literature related to impact of burden of disease on utilisation of healthcare services by the households.
3. Review of literature related to impact of burden of disease on out-of-pocket healthcare expenditure by the households.

2.1.1 Theoretical Background of the Study

2.1.1.1 Theoretical Background of the Epidemiological Transition

In his pioneer work ‘social system’, Parsons (1951) probably first, made an attempt to relate functional aspect of health services and social aspects of the illness experience, and introduced a new thought, called ‘medical sociology’. This medical sociology further transformed into sociology of health and illness, which mainly focuses on the social aspects of health-related issues. In his theory, he highlighted how the institution of medicine contributes to a functioning of social system and how illness impacts the social system. In sick role theory, Parsons (1951) opined that, “illness is a state of disturbance in the ‘normal’ functioning of the total human individual, including both the state of the organism as a biological system and of his personal and social adjustments. It is thus partly biologically and partly socially defined”. However, disease and illness are not synonymously used in the sociological literature. While on the one hand, disease is the unwanted biological process or condition disturbing the individual, on the other hand, illness is considered as the experience and the social or psychological impact of the disease on individual (Cockerham and Scrambler, 2009). This ‘state of illness or disability in a population’, can also be termed as morbidity, where people are in between ‘ideal health condition’ and ‘death’ (Majumder, 2006b).

However, morbidity measurement is more significant over the mortality measurement to assess the burden of disease. It is argued that age specific or cause specific mortality measures represents only a part of overall burden of disease or illness and to some extent, this measurement underestimates the actual burden of disease of the community (Kroeger, 1983). In this context, Johansson (1992) provided functional definition of morbidity and measures of morbidity. He classified two types of morbidity measures. One is self-perceived morbidity and other is observed morbidity. Self-perceived morbidity focuses on the self-assessment of pain and suffering by an individual while the later focuses on the assessment or diagnosis of any health abnormality by the clinicians or other professionals. However, the commencement or the continuation of the treatment by and large depends on ‘perceived seriousness of the disease’ by the sick person, not on the clinically diagnosed impairments, as viewed in Health Belief Model

by Rosenstock (1974). Further, Murray and Chen (1992) argued that self-perceived morbidity is influenced by cultural background and socio-economic dynamics of the patients. In addition, Murray and Chen (1992) classified the self-perceived measures of morbidity into three categories: symptoms or impairments, functional disability and handicap, and health service use. Symptoms or impairments can be defined as the happening of indication of ill health in a given period of time. On the other hand, functional disability represents the incapability of an individual to perform a particular task or impediment to accomplish the normal activity, but handicap indicates the functional disability of an individual in a specific social circumstances. Though the data relating to symptoms of different diseases of the people can easily be available through household level survey, but the availability of functional disability and handicap data at the individual level or at the population level is quite impossible, rather, scarce in most of the developing countries including India. Under this circumstance, levels of health service use or extent of health facility utilisation by the people may be applied to assess the health status or morbidity pattern or epidemiological profile of the people of any area (Salomon and Murray, 2002). Majority of the studies (Majumder, 2006b, 2014; Ghosh and Arokiasamy, 2010; Duraisamy, 1998, 2001) carried out in India in this field have employed the self-perceived morbidity measurement.

Parsons (1951) threw light upon sociological issue such as how people with chronic illness manage their personal experiences such as duration of the disease and uncertainty with the disease. But, the epidemiological shift marked attention of the social scientists, demographers, anthropologists, economists and other professionals, when acute illnesses were apparently displaced from the society and chronic diseases were emerged as the major cause of mortality. This shift in causes of mortality in the developed countries is known as 'epidemiological transition' (Omran, 1971). Every society in the modernisation process has to pass through three successive stages of transition : a) the age of pestilence and famine representing high but fluctuating mortality and average life expectancy at birth 20-40 years, b) the age of receding pandemics indicating rapidly declining mortality and average life expectancy at birth 30-50 years, and c) the age of degenerative and man-made diseases indicating disappearance of infectious diseases and emergence of chronic degenerative diseases and average life expectancy at birth increases up to 70 years (Omran, 1971, 1982). It was also observed that while on the one side, decrease in infectious diseases results in reduction in child and maternal mortality and

on the other side, and increase in life expectancy results in aging population with increasing mortality from chronic degenerative diseases (Barret et al., 1998). Later, two other stages (Olshansky and Ault, 1986; Rogers and Hackenberg, 1987) were added to original model of 'epidemiological transition' by (Omran, 1971). The fourth stage is the 'age of delayed degenerative diseases' whereby degenerative diseases like cardiovascular diseases and cancers remain as chief cause of mortality, but improvement in medical technology increases the life expectancy of elderly people suffering from those non-communicable diseases (Applin et al., 1999). The fifth stage is known as the 'age of emergent and re-emergent infections' where both old and new infectious and parasitic diseases again emerge as the cause of morbidity and mortality in the society (Smallman-Raynor et al., 1999). To support the transition theory, four different models were proposed: the classical or western model belongs to England and Wales and Sweden; the accelerated transition model belongs to Japan; the contemporary or delayed model belongs to Chile and Ceylon; and the transitional variant of delayed model belongs to Taiwan, South Korea, Singapore, Sri Lanka, Hong Kong, Mauritius (Omran, 1971, 1983). But, epidemiologic transition model does not fit with Latin America, because, on one side, the countries were experiencing re-emergence of malaria and dengue fever and on the other side, the countries were having burden of infectious as well as chronic degenerative diseases (Frenk et al., 1989). By applying 'protected polarized model' in Accra, a sub Saharan African Country (Mensah and Aikins, 2010) found that (1) mainly, poor communities were experiencing communicable or infectious diseases; (2) wealthy communities were experiencing the increasing prevalence of non-communicable diseases as the chief cause of morbidity and mortality and (3) the arrival and increased impact of the HIV/AIDS epidemic. The study also found that during 2001 onwards, circulatory diseases were the main reasons of mortality, followed by infectious and communicable diseases, diseases of the respiratory system and neoplasm, chronic diseases such as stroke and hypertension, injury and poisoning in the region. Further, Barret et al. (1998) argued that the theory is restricted to a particular set of historical circumstances. Others (Weisz and Gryn, 2010) opined that theory is not concerned with disease but the transition from high birth rate to low birth rate and their causes and consequences. Further, the model does not include mortality trends that result from accidents, suicide, homicides and other injuries (Martinez and Leal, 2003). Studies so far done on the epidemiological transition theory at national or the regional levels, focused on the morality or

cause of death and their trends in different societies in different time periods, empirical research or study on changes in morbidity pattern in the country is very limited (Pathak et al., 1981; Riley, 1989; Majumder, 2006b, 2014; Ghosh and Arokiasamy, 2010). The present study addresses the morbidity pattern of population according to modalities of Global Burden of Disease Study as recommended by World Health Organisation (WHO) and study tries to show how disease pattern changes as the demographic and socio-economic characteristics of the people change.

2.1.1.2 Theoretical Background of the Utilisation of Healthcare Services

Healthcare is considered as one the facet of social study because various social factors directly or indirectly influence the sick person in his different stages of sickness and treatment process. Probably, the first theory of healthcare utilisation is the Parsons' (1951) sick role theory, which shows how patient's health seeking behaviour is influenced by socialisation patterns, considering the normative values of a culture or subculture. Later on, adopting psychological approach, Mechanic's (1978) general theory of help seeking explains how individuals recognise their illness and make decisions regarding the choice of source of care to get cure from illness or diseases they are experiencing. Further, in his 'stages of illness and medical care' theory, Suchman (1965) points out five stages of individual's decision making process through which utilisation of health care facilities are determined: 1) the individual's symptom experience; 2) the individual's conjecture of a sick role; 3) medical care contact; 4) the assumption of a dependent-patient role via acceptance of professional health care treatment; 5) the individual's recovery from illness. In this tradition, health belief model (Rosenstock, Strecher and Becker, 1988) emphasises on the individual health seeking behaviour towards the available healthcare facilities when he or she perceives himself or herself as sick considering four variables: 1) perceived susceptibility to disease; 2) perception of illness severity; 3) perception of benefits versus costs; 4) promptness to action.

Besides all these theories and models, two other major frameworks such as Andersen and Newman model (1973) and the Kroeger's model (1983) attempted to explain the healthcare services utilisation of an individual from the behavioural aspect. On the one side, Anderson and Newman (1973) argue that utilisation of healthcare services is a function of three factors viz. 1) predisposing factors comprising of socio-cultural characteristics such as social structure, health beliefs and demographic profile 2) enabling factors represent family attributes and community

resources such as personal or family income, health insurance, a regular source of care, travel, extent and quality of social relationships and 3) need factors comprising of illness characteristics, perceived health status, and expected benefit from treatments. According to Anderson and Newman (1973), two types of need are found in healthcare. One is perceived need and other one is evaluated need. Perceived need is felt by the individual in the form of want, but when perceived need is turned into demand, it becomes evaluated need, that is, utilisation of healthcare services. The model emphasises more on the need factors, as it is the most immediate reason for health service use by an individual. It is expected that an individual first perceive or recognise the disease as serious considering the presence of other factors such as predisposing and enabling factors and then takes decision whether or not to utilise the healthcare services (Fosu, 1994). Therefore, it is argued that perception regarding illness or the likelihood of its outcome by the individual or his family is a must to seek any health facility. In their works, (Rosenstock, 1966; Greenlick et al., 1968) have shown that health status or illness levels of the individual has significant effect on utilisation of healthcare services. Further, Cockerham (1982) finds that social network has significant influence on the utilisation of health care services. In addition, need for healthcare services represent the perceived health status, which is measured by severity of disease, the number of disease symptoms and the duration of the disease (Fiedler, 1981). The higher is the severity, the higher is the utilisation of healthcare services (Pathak et al., 1981; Fosu, 1994) and the more is the number of disease episode, the more is the healthcare utilisation (Fosu, 1994).

Later on, Andersen's revised behavioural model incorporates three important issues regarding health service use: type of available healthcare service, the purpose of the healthcare service and frequency of healthcare service use (Andersen, 1995; Andersen & Newman, 2005). Finally, the model depicts the direct relationship between health behaviours and health outcomes of the individuals (Andersen, 1995). On other hand, Kroeger model (1983) views that utilisation of healthcare services mainly depends on some behavioural factors such as patient characteristic, disorder characteristics, patients' perception and service characteristics. Disorder characteristics reflect the severity and nature of the disease. Patient's perception comprising of the perceptions about expected benefits of treatment, perceptions about disorder type and perceptions about cause of the disease. Service characteristics mainly focus on cost of healthcare services which patient or his or her family incurs during illness. It is also important

to discuss a particular illness experience (i.e. illness episode) and associated healthcare or medical care. It is assumed that as number of illness episode increases, use of healthcare services is likely to increase (Solon, 1967; Richardson, 1971). Further, Kroger (1983) categorised healthcare service providers into four groups: modern care, traditional healers, drug sellers and self-medication or no treatment.

However, Individual health behaviour can better be understood by the Grossman's model of demand for health (Grossman, 1972) which is based on the neoclassical paradigm of rational consumer and constrained utility maximisation theories. This model opens up a new avenue of empirical research in the field considering the broader social and cultural aspects in a variety of low- and middle-income countries. The model views each individual is a producer as well as a consumer of health. Also, the demand for healthcare services is derived demand because it is derived from demand for good health. Further, healthcare is a consumption good as well as investment good. As consumption good, it provides direct satisfaction and utility, and as an investment good, it provides satisfaction to consumers indirectly through increased productivity, fewer sick days, and higher wages. Further, the model views that health always depreciates over the life time. Therefore, to maintain the same health status all over the time, an individual needs to increase the investment in his or her health by following healthy lifestyle such as proper diet, regular exercise, balanced recreation etc., or by increasing the utilisation of health care services or medical services. Therefore, if individual desires good health, then demand for health care services increases, in other words, utilisation of healthcare services increases (Grossman, 1972). Also the Grossman model and its extensions shed light into the individual's decision to seek medical care. Later on, Acton (1975) and Christianson (1976) pointed out the alternative treatment choices (allopath, homeopathy, traditional, etc.) and type of health care (public, private or else) in healthcare decisions, which were initially ignored in the Grossman model. But in his model, Jacobson (2000) viewed family as the producer of health and all members of the family have common preferences over the healthcare. The model shows that production of health is not determined by the individual's income but by the family's combined resources. Later on, by synthesising both the practical and the theoretical viewpoint of medical sociology, Cockerham (2007a, 2007b) tried to explain or predict the health - related social behaviour through the utilisation theory. Later on, medicine was symbolised as the sociological interest in the area of health (Cockerham, 2009). In this tradition

(Rosenstock 1966; Greenlick et al., 1968) showed that health status or illness levels of the individual has significant effect on utilisation of healthcare services. In addition, morbidity rate may vary according to illness perception and reporting behaviour of the individual (Kroeger, 1988). This reporting behaviour indicates the health seeking behaviour or in other words, pattern of healthcare service utilisation by the individual or by the community as a whole.

Till date, most of the empirical studies based on behavioural model of utilisation of healthcare services focused on the impact of predisposing factors and enabling factors on health services utilisation while less attention has been paid to the impact of need factors such as perceived illness, severity of diseases, and duration of diseases on utilisation of healthcare facilities. Present study tries to explain how healthcare utilisation pattern is affected by the burden of disease of the people (which is indicated by type of disease, nature of disease, severity of disease, duration of disease etc.) in the light of their demographic and socio-economic characteristics.

2.1.1.3 Theoretical Background of Healthcare Expenditure

Ensuring good health to everybody at affordable cost is one of the important goals of the government of all countries of the world. But there is theoretical debate regarding the necessity of government intervention in healthcare market (Culyer 1972, 1976). It is often argued that on efficiency and equity ground as well as to controlling the market failure government intervention is necessary in healthcare sectors. However, Abel-Smith (1963, 1967) found that gross domestic product (GDP) is the key determinant of healthcare expenditure of any country. Later on, many studies (Kleiman, 1974; Newhouse, 1977; Gerdtham et al., 1992; Hitris and Posnet, 1992; Hansen and King, 1996; Gerdtham and Lothgren, 2000; Karatzas, 2000) also showed that amount of healthcare expenditure (both private and public) depends on GDP of the country. Further, it is also recommended that every country should spend at least 5 percent of their GDP on healthcare facilities to achieve better health outcomes of the people (Savedoff, 2007). But, in many developing countries including India, government finance in health sector is very less or limited (Lee and Mills, 1983). This less or limited government spending on healthcare forces economically disadvantaged households to seek healthcare facilities from private sources with significant detrimental effects of out-of-pocket healthcare expenditure (OOPHE) (Doorslaer, 2006; Xu et. al, 2011). Economists are also concerned with the impact of

high healthcare costs imposed on the government, patient, patient's family and relatives, the local community, as well as on the other agencies (Lee and Mills, 1983). The distribution healthcare services should be based on 'need' rather than individual demand (Fuchs, 1966); based on 'medical need', not on the 'economic status' (Lindsay, 1969 ; Prinja et al., 2012). However, out-of-pocket healthcare expenditure is defined as 'payments not covered by medicare, private health insurance (PHI) or any other similar sources. It includes private health insurance premiums, any payments to doctors, dentists and other health practitioners (excluding Medicare or PHI rebates), co-payments for medicines covered by the Pharmaceutical Benefits Scheme (PBS), non-prescription medicines, other pharmaceutical and therapeutic goods, and hospital and other healthcare costs not covered by Medicare or PHI'(Yusuf and Leeder, 2013).The cost of healthcare falls on an individual not because of his own individual choices but the choices of the others through the tax payment (Culyer, 1971).

Further, the problem of external demands for healthcare emerges as a general problem in health economics and it requires sound public expenditure theory (Culyer, 1971). Further, study on impact of disease on the individual or on family, including their psychological and social factors becomes important. However, in the era of globalisation, introduction of new modern and expensive technology in the healthcare market , raises a crucial question as to who will bear the increasing costs of healthcare services, whether the individual himself or the government or others (Starfield, 1997). It is still unanswered.

2.1.2 Empirical Studies conducted on the issues

2.1.2.1 Empirical Studies on Burden of Disease of the People

Health status, in other words, burden of disease at the individual level or at population level of any area can be understood by analysing the epidemiological profile or morbidity pattern of the people of that particular area. This epidemiological profile or morbidity pattern varies between the countries, within the country, between the different regions and between different socio-economic and demographic groups etc. (Sundar, 1995; Duraisamy, 1998; 2001; Majumder, 2006b). Murray and Lopez (1996) showed that communicable diseases accounted for more than half of the burden of disease in India, but majority of the people in India are mainly

suffering from non-communicable diseases (Kapilalakshmi, 2000). Recent studies indicate that India is passing through an epidemiological transition with a decline in communicable diseases and an increase in chronic non-communicable diseases which accounted for more than 50 percent death in 2005 (Reddy et al., 2005) and 53 per cent death in 2008 (Bloom et al., 2013; Sharma, 2013). This transition leads to a growing burden of non-communicable diseases (NCDs) like cardiovascular diseases (CVD), diabetes, cancers and injuries (Report on causes of deaths in India, 2001-2003. Office of the Registrar General of India, Government of India, 2009), though the country already has substantial burden of communicable, maternal and child health disorders (Gersh, 2010). Studies (Frenk et al., 1989; Boutayeb, 2006) showed that India is experiencing double burden of diseases i.e. the co-existence of communicable and non-communicable diseases among the people.

Gersh et al. (2010) highlighted the different sphere of epidemiological transition occurring across the globe. However, epidemiological transition rate in developing countries is very fast compared to the other developing as well as less developed countries in the world (Reddy et al., 1998). Moreover, earlier research on this particular issue was not given due importance in developing countries including India. The evaluation of burden of disease in India is complex as the information in this field in the country is very rare or limited (Murray and Lopez, 1996). But, in recent years few social science researchers in their studies (Sundar, 1995; Duraisamy, 1998; Krishnaswami, 2004; Majumder, 2006b, 2014; Joshi et al., 2006; Ghosh and Arokisamy, 2010; Sharma et al., 2013; Brinda et al., 2015) highlighted the different issues of morbidity pattern or epidemiological profile of the people of India in urban and rural settings.

In another study in Dakshinpur, a low income re-settlement colony of Delhi, Sundar (2000) revealed that due to unpleasant environment and unhygienic living conditions people experienced high incidence of diseases like tuberculosis, respiratory tract infection, worm infestation, and diarrhoeal diseases. The study indicated that less concerned about the health issues and too much dependence on traditional system of medicines lead to increase different types of communicable diseases in urban slum. But in a study in the slum areas of Mumbai, Surender (2000) showed that gastroenteritis, typhoid, malaria, measles, and hepatitis and tuberculosis were the major diseases among the people, and particularly, women and children were suffering from malnutrition, anemia and underweight problems. But in his study, Yesudian (1984) revealed that due to overcrowding, inadequate housing condition, inadequate

safe drinking water, lack of drainage and others, urban slum dwellers of Bombay city (now Mumbai) are at higher risk of being suffered from different communicable diseases. Besides these, in urban areas people suffer from both communicable and non-communicable diseases due to environmental degradation (Khandewala, 1996).

Duggal and Sucheta (1989) found higher morbidity among the youngest and oldest age groups in Jalgaon district in Maharashtra. Further, people in rural areas reported higher morbidity than in urban areas. People in the slum areas and in remote villages reported higher morbidity than in other areas. Reported morbidity prevalence rate was higher among the richest class than the poorest class and reported acute and minor illnesses were higher among the well-off classes than the other counterpart.

National Council for Applied Economic Research (NCAER, 1992) conducted a household survey in rural and urban areas of major states & union territories of India with the aim of understanding the nature and type of illnesses suffered by family members and others. The study revealed that in almost all the states morbidity prevalence rate was higher for the males than for the females in all age group people due to the under-reporting of illness by females and lack of medical attention during illness, and the lower-income group people were more vulnerable to various diseases. Fever, respiratory diseases and gastrointestinal infections were the common illness treated irrespective of gender and place of residence. But in another study, it is found that prevalence rate of illness for the rural and urban areas was 106.7 and 103 per thousand of population, fever was common illness among both adults and children, accounted for 30 percent in rural areas and 25 percent in urban areas. The study also found that prevalence rate of cardio vascular diseases for per thousand adult males was 4.5 and for per thousand adult females was 3.1 in the rural areas. Particularly, in the urban areas this prevalence rate was 9.0 for adult males and 7.7 for adult females (NCAER, 1995).

Dhanalakshmi and Moorthy (1993) explored the socio- economic and demographic factors such as size of the household, type of family, occupation of the husband and surviving children etc. in determining the morbidity pattern of the household members in Andhra Pradesh. The study highlighted that infant or child morbidity is comparatively higher for the large family size, joint and extended families than the small and nuclear families.

George et al. (1994) analysed the incidence and prevalence of morbidity of 770 sampled households in rural and urban areas of two extreme districts of Madhya Pradesh. Households

were classified on the basis of the landholding of the main earner, the level of per capita consumption, and the educational level of its members. The study revealed that during the monsoon the morbidity prevalence rate and incidence rate were 365 and 195 respectively, while during winter the morbidity prevalence rate and incidence rate were 256 and 108 respectively. Higher prevalence rate for acute diseases was found in urban areas than in rural areas. In all age groups, except for 25 to 44 years old, male respondents registered higher morbidity than that of female respondents.

Using (NCAER, 1995) household survey data on self-reported morbidity, Sundar (1995) showed that the morbidity prevalence rate for the reference period of one month in rural area was 106.7 and in urban area was 103.0 per thousand population in India. The survey results indicated very high morbidity rate for old age-group in both rural and urban areas. Further, study revealed that the prevalence of communicable and acute diseases have inverse relationship with households' income, while it has direct relationship with the prevalence of chronic diseases. However, based on the National Sample Survey Organisation (NSSO) data of 1986-87, Duraiswamy (1998) analysed the age and gender specific morbidity prevalence rates of different socioeconomic and demographic groups in rural and urban Tamil Nadu. The study highlighted that younger age group were more susceptible to communicable diseases and non-communicable diseases were mostly prevalent among the elderly persons. In addition, males were found to be more vulnerable to different types of diseases as compared to the female counterparts. On the other hand, during the same year, Nandraj et al. (1998) analysed the pattern of morbidity of the women living in a congested area of Greater Mumbai city. The study covered 430 households and the data were collected by interviewing the women. The result revealed that the monthly prevalence rate of disease for females was 571 per thousand and the majority of them related to menstruation and other reproductive illness. The findings indicated a strong relationship between women's work lives and their health status.

In another study, Madhiwalla et al. (2000) found higher morbidity among women than men, morbidity rate for male and female were 307 and 812 per thousand respectively. Females were mainly suffering from different types of fever and respiratory illness, followed by reproductive illness, aches and pains and weakness. Further, reported morbidity rate was higher among the women staying alone in the house, belonging to scheduled caste and unskilled non-working, despite healthcare facilities are available in the area.

One estimate by World Health Organisation (WHO) was that disease burden of India due to communicable diseases would be 24 percent, due to non-communicable diseases, it would be 57 percent and due to Injuries it would be 19 percent in 2020 (World Health Report 1999). It was also projected that nearly 50 million people above the 30 years old would be suffering from hypertension, out of which 20-25 percent would be from urban area and 8-13 percent would be from rural area. It was categorically highlighted that accidents and injuries are the leading cause of morbidity and mortality of the young age group people (i.e. 15- 34 years old) in India (Gupte et al., 2001). However, World Health Report states that India ranks fifth in the world's share of diseases, third in diarrhoea, TB, respiratory, and other infections and parasitic diseases, peri-natal conditions; fifth in nutritional deficiencies, diabetes, Cardio Vascular Diseases; a quarter of maternal ill health and second largest number of HIV/AIDS cases after South Africa (World Health Report, 2011).

Some of the reports published at national and state level may also provide some lights upon the disease pattern or epidemiological profile of the people of the state or the country as well, Report of the National Commission on Macroeconomics and Health (NCMH), Ministry of Health & Family Welfare, Government of India, 2005 revealed that communicable diseases such as HIV, TB, malaria, diarrhoea, acute respiratory infections, maternal and peri-natal conditions contributed about 50 percent of India's disease burden in 1998. Report categorically mentioned that cancers, cardiovascular disease (CVD), diabetes, respiratory conditions (like asthma and chronic obstructive pulmonary (COPD) and mental health disorders are the major non-communicable diseases (NCDs) in the country. Diabetes contributed nearly 0.7 percent of India's disease burden in 1998 and it was expected to rise from 2.6 crore in 2000 to about 4.6 crore by 2015, particularly, among the urban people. In addition, report projected that prevalence rates of CVD is likely to increase from about 2.9 crore in 2000 to 6.4 crore in 2015 with higher dominance in rural areas in all age groups people. Further, cancer accounted for nearly 3.3 percent of the total disease burden and shared about 9 percent of all deaths. Commission also projected that cancer cases will increase by about 25 percent from 2001 to 2016 and it will kill about 6,70,000 people in 2016. Report also highlighted that at the lower end 6.5 percent of Indians suffered from mental disorder and this percentage will continue to rise. It was estimated that about 1.49 crore chronic cases of COPD and nearly 2.5 crore cases of asthma prevailed in the country during 2001 and these diseases are projected to increase by

around 50 percent by the year 2016. Finally, commission also pointed out that with other diseases, the country has substantial burden of accidents, and intentional and unintentional injuries and it accounted for 16.7 percent or more of total disease burden of the country.

But the Annual Report to ‘the people on health’, Ministry of Health and family Welfare, September 2010, Govt. of India stated that about 1.9 million out of global 9.2 million TB cases occur in India every year which contributes to about one-fifth of the world’s TB cases. It was estimated that HIV infected person in the country was about 2.5 million, accounting for third highest cases in the world. In India, every year more than 1.5 million people become the victim of malaria, half of them were falciparum category and more than 300 million children below 5 years old suffer from acute diarrhoea. Further, filaria infected people in India was about one-third of world and considerable number of leprosy cases were seen in the country. Report pointed out the issue of outbreak of dengue and chikungunya in different parts of the country. It was also estimated that more than 300 million people are at risk of being affected by Acute Encephalitis Syndrome (AES) / Japanese Encephalitis (JE). The report also has recognised the presence of non-Communicable Diseases such as obesity, diabetes, hypertension, cardiovascular diseases, stroke, asthma, mental disorders, cancer, degenerative disorders, and other old age related problems. Further, the report showed that communicable diseases, maternal, peri-natal and nutritional disorders etc. caused overall 38 percent deaths; non-communicable diseases caused overall 42 percent deaths and injuries and ill-defined constituted about 10 per cent deaths in both rural and urban areas. However, majority of ill-defined cases were found among the older ages, particularly, among 70 years and above population group. In rural areas, about 41 percent death occurred due to communicable, maternal, peri-natal and nutritional conditions and 40 percent deaths occurred due to non-communicable diseases. Deaths occurred due to injuries were about 10 percent in both rural and urban areas. Therefore, the report indicates that India has considerable burden of both the communicable and non-communicable diseases and injuries. The report also highlighted the dominance of communicable diseases in rural areas and dominance of non-communicable diseases in urban areas of the country. Therefore, different morbidity and mortality pattern exists in the rural and urban areas of the country.

Further, the report on caused of deaths in India, Office of the Registrar General of India, Govt. of India, 2010, mainly focuses on the burden of non-communicable diseases and injuries

in the country. The report revealed that prevalence of diabetes cases was rising at a higher rate, particularly, among the marginalised and the lower income groups in both urban and rural areas of the country during 2001-2003. Diabetic cases among the urban population were around 5–15 percent, among the semi-urban population about 4–6 percent, and among the rural population it was nearly 2–5 percent in the country during the same period. Also, 25 percent of urban and 10 percent of rural population were suffering from hypertension. Prevalence of Chronic obstructive pulmonary (COPD) among men was 2–9 percent in north India and around 1–4 percent in south India. High use of tobacco was considered as the one of the reason for high prevalence of cancer as well as Cardio Vascular Disease in the country. Further, report showed that road traffic injuries and deaths are increasing in the country and it caused more than 100,000 deaths, 2 million hospitalisation cases, and 7.7 million minor injuries every year. This accident cases were was found among the young male population aged between 15 and 45 years old.

In addition, Report of the Working Group on Communicable Diseases for 12th Five Year Plan, 2011 stated that India has ‘Triple burden of diseases’ like unfinished agenda of communicable diseases, emerging non-communicable diseases and re-emerging infection diseases. Annual risk of TB Infection in the country reduced from the national average of 1.5percent to 1.1percent during 2002-03 to 2007-10. Report also showed that though malaria cases declined from 2.08 million in 2001 to 1.50 million in 2010, burden of it cannot be ignored. In urban areas malaria cases increased from 7.79 percent in 1996 to 13.8 percent in 2010 and contributed 19.42 percent deaths of the country. During 2006, India experienced an outbreak of dengue fever with 12,317 cases and 184 deaths from 18 States/ UTs (270 districts). During 2010, reported dengue cases and deaths from 27 States and UTs (403 districts) were 28292 and 110 respectively. Chikungunya was considered as another endemic of the country. Further, report showed that during 2008, out of total 95,091 Chikungunya cases of the country, reported cases from Karnataka, Kerala and West Bengal were 49 percent, 26 percent and 19 percent respectively. Further, clinically suspected Chikungunya cases in 2009 were 73,288 and in 2010 were 0.48 million. Reported Japanese encephalitis cases and deaths due it were 5149 and 677 respectively. Further, 250 Lymphatic Filariasis (LF) endemic districts were identified where nearly 600 million population were at risk of LF in the country. However, in West

Bengal, about 130 million people were at risk of kala-jar. The report highlighted that state of Bihar contributes 70-80 percent of the total disease burden in the country.

But the Report of IPD, 2009 showed that people of West Bengal, particularly the poorest section of the society, experienced very high burden of communicable diseases such as diarrhoea, tuberculosis, malaria, HIV and AIDS etc. On the other hand, the state was also experiencing high incidences of some non-communicable diseases like diabetes, lung disease, stroke, heart disease, cancer, mental illness. Moreover, incidence of accidents and death due to accident were 31.24 and 25.55 respectively. Therefore, the report clearly indicates that the state of West Bengal is experiencing triple burden of disease which is serious matter of concern for the policy makers of the state.

On the other hand, the diseases which were thought to be disappeared are still present in the state, such as prevalence of leprosy. One study, entitled 'Clinico-epidemiological study of leprosy in an urban area of West Bengal at Naihati municipal area, Roy et al. (2010) highlighted that reported prevalence of leprosy cases were 9.9 per thousand population and out of the total of reported cases, 53 percent were new cases during same year. Study pointed out that slum dwellers are more vulnerable to be exposed by leprosy cases compared to other areas of the town. Further, result of the NATCOM and Indo-UK project revealed that environmental factors, the parasite development rates, the vector population, and the prevailing socio-economic conditions etc. are responsible for malaria in India. The central and eastern Indian states such as Madhya Pradesh, Jharkhand, Chhattisgarh, Orissa, West Bengal and Assam were found to be endemic of malaria. Further, It was anticipated that malaria will continue in Orissa, West Bengal and southern parts of Assam, bordering north of West Bengal i.e. Darjeeling district and may become malaria prone area (Bhattacharya et al., 2006). However, state level report, Annual administrative report, 2010-2011, Health & Family Welfare Department, Government of West Bengal (GOWB), pointed out that major water borne diseases in the state are acute diarrhoeal disease including cholera, other diarrhoea, dysentery, enteric fever, viral hepatitis (A&E). Annual report also highlighted that though many positive initiatives undertaken, tuberculosis (TB) still is a public health threat in West Bengal and every year nearly 5000 TB patients die in the state.

In his analysis, Krishnaswami (2004) analysed the morbidity profile of the people of Kerala with the data collected from 200 households of eight panchayats of the state during the

reference period of 15 days. It was estimated that morbidity prevalence rates for acute illness and chronic ailments were 58 and 63.53 per thousand respectively. The morbidity rate for acute illness for the age group 0-4 and for the age group 5 and above were 163.93 and 46.95 per thousand respectively. Females in the age group 15-44 had higher morbidity both in acute and chronic diseases. Similarly, people aged above 60 years old, irrespective of gender, have higher tendency of both in acute and chronic diseases. Morbidity due to water-borne diseases, respiratory diseases and non-specified fever were found 5.27 percent, 38.43 percent and 48.04 percent respectively. Morbidity among children aged 0-4 due to respiratory diseases was found higher compared to all other age groups. It was further observed that non-communicable diseases such as diabetes, blood pressure, asthma, rheumatism, and heart ailments accounted for 72.48 percent. Mental disorders and cancer accounted for 2.58 percent and 2.38 percent of total morbidity respectively. In addition, other diseases such as tuberculosis, pulmonary and non-pulmonary, accounted for 2.96 per cent of the total chronic morbidity, with morbidity rate of 1.86 per thousand population. But the incidence rate for acute illness was estimated to be 47.60 per thousand for a period of 15 days and 1158 per thousand per year.

In a similar study, Majumder (2006b) analysed the epidemiological profile and health seeking behaviour of the people in Cooch Behar and Jalpaiguri districts of West Bengal. The sample consisted of 440 households or 2342 persons spread over the rural and urban areas of those two districts. The primary data was collected through interview with a detailed questionnaire, and the reference period for the study was five months preceding the date of interview. The study found that the annual average period prevalence rate of disease for the two districts were 0.348 and 0.480 respectively. It was also found that people experienced 325, 158, and 483 illness episodes in the rural, urban, and the combined area respectively. In rural areas, percentage of communicable and non-communicable diseases, and injuries were about 58, 30 and 12 respectively and those of in urban areas were 16.5, 54.4, and 29.1 respectively. The study indicated higher burden of communicable diseases in rural areas and non-communicable diseases and injuries in the urban areas. However, a regional level study on disease burden, Joshi et al. (2006) made an attempt to find out the causes of mortality of the people residing in East and West Godavari in Andhra Pradesh. The study was confined to 45 villages of that concerned area. Data were collected through ongoing mortality surveillance system and verbal autopsy method. The study revealed that death due to circulatory system diseases were 32

percent, because of injuries and external causes were 13 percent, infectious or communicable and parasitic were 12 percent, for neoplasm were 7 percent and respiratory diseases were 5 percent. The study indicated that though various types of diseases and incidences of injury exist, majority of the people of rural India die due to non-communicable diseases with chronic condition.

Findings from the self-reported descriptions and symptoms based study by Dror et al. (2008) in five resource-poor locations in India revealed that 54 percent individuals suffered from various types of fever including malaria, 22 percent suffered due to respiratory tract infections, 13 percent suffered from digestive disorders, 21 percent had cardiovascular diseases, 20 percent had musculoskeletal & connective tissue disorders, 9 percent had asthma, 4 percent had diabetes mellitus, 3.6 percent had met with accidents and remaining 14.3 percent were suffering from “undetermined” health problems. Moreover, study categorically mentioned that while young are more exposed to acute illness (85 percent), adults are more exposed to chronic diseases (i.e. more than 50 percent). This study also indicates the considerable burden of diseases in the country.

With the aim of determining the prevalence of ischemic heart disease (IHD) and associated risk factors among the people aged 40 years and above in the urban areas of Siliguri Municipal Corporation of Darjeeling district, Mandal et al. (2009) carried out a study considering some socio-demographic and other basic variables such as age, sex, occupation, addiction, food habit, physical activity, body mass index, blood pressure, and electrocardiogram change. The study revealed that out of 250 individuals, 11.6 percent had IHD and 47.2 percent had hypertension, prevalence of IHD was higher among males (13.5 percent) than among females (9.4 percent). Further study showed that prevalence of IHD increases with the increase of age, smoking, blood pressure, body mass index. The study also indicated the possibility of prevalence of other types of diseases, as the region is experiencing rapid demographic change, urbanisation etc. But after few years, in a similar type of study on morbidity pattern of elderly in a Singur block of Hooghly district of West Bengal, Karmakar and Chattopadhyay (2012) showed that about 80.4 percent males and 79.4 percent females perceived themselves sick due to several health problems. Periodontal disease, dental caries, cataract, osteoarthritis, hypertension, constipation, anemia, refractive error and upper respiratory infection etc. were found common health problems among the studied group. Analysis showed that 13.1 percent

were suffering from acute diseases, 76.9 percent were suffering from chronic diseases and 10 percent were suffering from both acute and chronic diseases. Problem of gastrointestinal system, eye, cardiovascular and musculoskeletal system, respiratory were 67.2 percent, 49.5 percent, 46.1 percent and 29.9 percent, 29.2 percent respectively. It was further reported that 15.7 percent elderly persons were suffering from skin and subcutaneous tissue diseases. Among the studied population, 9.8 percent had problems in genito-urinary system, 4.9 percent problems in nervous system, 5.4 percent had ENT problems and 24 percent elderly were suffering from some unknown diseases. The study indicated that old age group people, mainly, suffer from non-communicable diseases compared to communicable diseases.

In another study, Taylor (2010) highlighted the four leading chronic diseases in India. These are cardiovascular diseases (CVDs), diabetes mellitus, chronic obstructive pulmonary disease (COPD) and cancer, and prevalence rate of these diseases are projected to increase in the near future. Further, Sharma (2013) estimated that CVDs accounted for 24 percent death, chronic respiratory accounted for 11 percent, cancer accounted for 6 percent and diabetes accounted for 2 percent deaths in India. However, inadequate diet, overweight, abdominal obesity, hypertension, smoking among men and deficiency of Vitamin D are viewed as the leading factors for these non-communicable diseases in India. Cost-effective holistic approach was recommended to control and prevention of these diseases (Sugathan, 2010). But Naidu et al. (2012) argued that lifestyle changes and rapid urbanisation are responsible for the increase in the prevalence of communicable (TB) and non-communicable (cancer) diseases in Tirupati city of the state of Andhra Pradesh.

Analysis of Ghosh and Arokisamy (2010) revealed that during 1995-96, morbidity prevalence rate was 65 per thousand in the rural and 64 per thousand in the urban areas of West Bengal. It was also found that females experienced higher morbidity rate than males in both rural and urban areas; children aged 0-4 years and adults above 60 years were more vulnerable to the diseases compared to other age groups; and adult people mostly suffer from non-communicable diseases. Significant seasonal and regional variations were also found. Further, it was found that prevalence of acute diseases was higher among the poorer individuals and chronic disease was higher among the richer groups. While younger age groups were found to be suffering more from communicable diseases or fevers, respiratory and other infectious and parasitic diseases, aged people found to be suffered more from non-communicable diseases like

cardiovascular disease, cancer, tuberculosis, genitourinary and digestive diseases etc. On the other hand, in their study, Desai et al. (2010) found very high prevalence of minor illnesses such as cough, fever, diarrhoea etc. and major illnesses such as hypertension, heart diseases, diabetes etc. among Indian population. Further, they found higher prevalence of minor illnesses among the poor, uneducated and scheduled tribe community people than the other counterparts.

Using the District Levels Household and Family Survey (DLHS-3) data by International Institute of Population science, Mumbai, Department of Planning, Department of Health and Family Welfare, Government of West Bengal, Census of India (2001, 2011), Hati and Majumdar (2011) found that in West Bengal approximately 7 percent children suffered from diarrhoea and 25 percent suffered from acute respiratory infection during the last two weeks preceding the DLHS-3 survey. It was also found that in suburban capital centric districts such as Howrah, North 24 Pargana, etc. had lesser incidence rate of diarrhoea compared to the distant districts such as Paschim Medinipur, Cooch Behar etc. Further, the study found that hospital admission percentage was highest in Bankura with nearly 7 percent followed by Nadia, Darjeeling and Birbhum. Districts such as Howrah, Purba Medinipur, South 24 Pargana, and Uttar Dinajpur were found to have low prevalence of diseases and low hospitalisation cases. The study indicated that due to high population density across the districts of West Bengal, existing health infrastructure is not capable of meeting the demand for health facilities and thereby reduces the health service quality and increases the risk of mortality and morbidity in the state.

Further, in a study of changing spectrum of cancer epidemiology and cancer cluster of West Bengal population, Chatterjee (2011) found that cancer frequency was below 7.71 percent during 2003 to 2006, and it was increased to 14.15 percent in 2007 and 21.88 percent in 2009. Further, incidence rate of cancer was higher among the females than male counterpart. Study also revealed that cancer prevalence rate was higher in polluted urban areas than the rural areas. Breast cancer, cervix cancer and ovarian cancer among females were found to be most threatening to the people of West Bengal. The study indicated higher prevalence of cancer cases among the population.

In across-sectional study, Sharma et al. (2013) focused on co-morbidity associated with non-communicable diseases among the 400 elderly persons aged 60 years and above residing in rural and urban areas of Shimla hills during 2010-2011. Study revealed that out of total 400

persons, 15.3 percent elder persons were suffering from one disease, 125.5 percent from two diseases, 19.7 percent from three diseases, and 23.5 percent from four to six diseases. The average number of morbidity in urban and rural areas was 2.45 and 2.20 respectively. It was also observed that average number of morbidities was higher among the women, widows and married elder persons respectively. Further, results revealed that musculoskeletal problem (55 percent), hypertension (40.5 percent), anemia (16.5 percent), cataract and dental problems (30 percent) were common health problems among the older persons in the study area. On the other hand, based on Global Burden of Disease, 2004 study, Bloom et al. (2013) revealed that the burden of infectious diseases including communicable, maternal, peri-natal, and nutritional diseases accounted for 37 percent and non-communicable diseases (NCDs) accounted for 53 percent of all deaths in India. They argued that people of the country are more vulnerable to NCDs, particularly, the aged people are at risk of various types of NCDs such as cardiovascular diseases, different types of cancer, chronic respiratory diseases, diabetes and mental disorder. Study found that people mostly suffer from cardiovascular disease, followed by mental health disorders and respiratory diseases. The study mainly stressed on the mortality of non-communicable diseases, it did not explicitly address the morbidity pattern owing to NCDs.

Two recent studies are worth mentioning here. One such study carried out by Pati et al. (2014) on multi-morbidity due to Non-Communicable Diseases (NCDs) in India considering the socio-economic and demographic characteristics of the people. The background characteristics included in the study were age, gender, caste or tribe status, marital status, education, location, state, economic position of household, wealth/assets, and possession of health insurance etc. The study used the cross-sectional survey data from the WHO Study on Global Ageing and Adult Health in India, 2007, covering nationally representative sample of six states, namely, Assam, Karnataka, Maharashtra, Rajasthan, Uttar Pradesh and West Bengal. Total sample size was 12,198, comprising of people aged between 18 to 49 years and aged 50 years and above. The study was focused on the prevalence of NCDs, namely, angina, arthritis, asthma, cataract, diabetes (excluding diabetes associated with a pregnancy), stroke, chronic lung disease, hypertension and depression. The study estimated that 28.5 percent respondent had at least one NCD, and 8.9 percent had multi-morbidity. Another important study conducted by Lee et al. (2015) on the same issue in six middle-income countries, namely, China, Ghana, India, Mexico, Russia and South Africa. Analysis was based on nationally

representative cross-sectional data taken from World Health Organisation (WHO) Study on Global Ageing and Adult Health. The analysis was done on the basis of 39,213 respondents from those six countries aged 18 to 49 and aged above 50 years. The study found higher prevalence of multi-morbidity in urban areas compared to rural areas in all countries excluding India and Ghana. In India, majority of the multi-morbidity cases found among the rural people.

Thus, from the above studies conducted in different parts of the country as well as in rural-urban settings, it is clear that the country has considerable burden of disease among the people. But regional level study, particularly, in a corporation city, having cosmopolitan culture, high population pressure, continuous immigrants, overcrowded, huge population movement, increasing slum, border area and no structured healthcare institution exists like other cities in the country. Present study will reveal the fact of the burden of disease or epidemiological profile of the people of such city. The study will also show how disease prevalence changes as the demographic and socio-economic characteristics of the people change in that particular study area (i.e. SMCA).

2.1.2.2 Empirical studies on Impact of Disease Burden on Utilisation of Healthcare Services

The health seeking behaviour of a community reflects how healthcare services are utilised by them. This utilisation of healthcare services has been widely investigated in developed as well as developing countries in different rural and urban setups. As far as utilisation of healthcare services is concerned, a number of factors have been identified by researchers from different disciplines (such as medical sociology, medical geography, health planning and demography, epidemiology, anthropology, social sciences) which affect the use of healthcare facilities directly or indirectly. These factors are mainly broadly categorised into three groups: predisposing factors, enabling factors, and need factors (Anderson and Newman, 1973). Predisposing factors indicates the socio-cultural characteristics such as social structure, health beliefs and demographic profile. Enabling factors represent family attributes and community resources such as economic status, personal or family income, possession of health insurance, a regular source of care, place of residence etc. But need factors comprise of illness characteristics, perceived health status, and expected benefit from different alternatives of treatments (Anderson and Newman, 1973). Thus, literature shows that utilisation of healthcare services is mainly influenced by demographic characteristics (such as age, gender, education level, place of residence), socio-economic characteristics (such as religion, caste, occupation,

income level, source of income, social status etc.) and other characteristics include such as culture, attitude and beliefs of the individual or households. However, more specifically, behavioural model emphasises more on the need factors than the others factors, as it is believed that the most immediate reason for health service use by an individual or a community is perceived need for good health (Anderson and Newman, 1973). It is reasonably thought that an individual should first perceive or recognise his or her health problem or experience the symptoms about the disease as serious, considering the presence of other factors such as predisposing and enabling factors, and then he or she decides whether to utilise the healthcare services or not (Fosu, 1994). Therefore, perception of illness or the possibility of its detrimental effects may also influence the utilisation of healthcare services. It can be argued that if all these characteristics are favourable to the individuals or the household, utilisation of healthcare services will increase.

Empirical studies conducted so far on the utilisation of healthcare services at the individual level or at the community level in developed and developing countries including India are concerned with the identification of the variables which directly or indirectly affect the health seeking behaviour in a variety of social settings. In other words, majority of the studies showed that how predisposing and enabling factors affect the health service utilisation patterns of the individual or the households. The present study makes an attempt to understand the impact of disease burden, which is indicated by type of disease, nature of disease, severity of disease and duration of disease on utilisation of healthcare services. As a part of review, this section will also capture the issues such as the impact of different components of need factor on utilisation of healthcare services under different socio-economic-cultural and rural-urban break ups.

Along with the other factors, perception of the individual regarding different types of disease also affects the utilisation of healthcare services, as it was evident in the study of King (1962), where he revealed that due to lack of perception or awareness, socially backward classes such as less educated and low income group households developed different types of diseases. However, perception of morbidity and social interaction may determine the decision to seek any medical care or healthcare service use and choice of any particular system of medicine. To a greater extent, use of health services depends on the intensity or severity of morbidity. This has been captured in a study by Pathak et al. (1981). Probably, it is the first study conducted in India, on perceived morbidity and associated health seeking behaviour of

the rural people in eight villages and four wards of Saoner town in Nagpur. The information about symptoms, their duration and severity and associated utilisation behaviours were collected through house-to-house visits from 8,876 persons. Out of the total persons, 1,447 spells of sickness were found but utilisation of health services had been analysed on the basis of 1,441 spells. Out of this, only 36.7 percent spells utilised the healthcare services, several reasons were identified for this under utilisation such as age literacy, type of occupation, nature of illness and accessibility of healthcare services etc. (Pathak et al., 1981).

In another study, it was highlighted that because of low level of perception and lack of knowledge regarding the types of disease and nature of disease, severity of the disease, socio-economically backward communities of Bombay city (now Mumbai) paid less attention on seeking any healthcare service for their health problems. Few of them who took the treatment, preferred public health facilities due to the financial constraint (Yesudian, 1981). On the other hand, Bajaj (1999) pointed out that utilisation of public maternal and child healthcare services among the women in one slum area of Delhi city was low due to illiteracy and the lack of awareness regarding disease and availability of healthcare facilities.

It is expected that if number of illness episode changes, frequency of using healthcare services will also change accordingly, as it was evident in the study (Coe and Wessen 1965), where it was highlighted that as the number of illness episode increases, number of utilisation of healthcare services also increases. But the study failed to mention which type of healthcare service will increase. On the other hand, it is often argued that severity or perceived seriousness of the disease compels an individual to seek medical care or healthcare services. It is found to be true, in a study, where it was highlighted that the more is the severity of disease, the higher is the utilisation of healthcare services (Pathak et al., 1981). But in a study in Miraj taluka of Maharashtra, Ram and Dutta (1976) showed that even though major illness, considerable percentage of households did not take any healthcare service, and level of education and income of the family were shown as the probable reasons for this. On the other hand, Germano (1986) in a study in Kenya pointed out that type of illness and stage of illness may also determine the pattern of healthcare service utilisation. In his study, he also observed that a patient took advice or treatment from more than one health facilities for a particular disease episode.

Duggal and Sucheta (1989) found higher morbidity prevails among the youngest and oldest age groups in both the rural and urban areas of Jalgaon district in Maharashtra during the year 1987. The study further showed that overall morbidity rates are higher in rural areas than in urban areas, but untreated cases were higher in rural areas than other counterpart. However, majority of the ill persons in rural areas availed the treatment at private healthcare, but in urban areas, particularly, slum dwellers utilised more public healthcare facilities than the other facilities available in the area. Further, untreated cases and utilisation of public health facility were highest among the lowest socio-economic class. On the other hand, Duggal and Amin (1989) revealed that differences in income do not have much influence on the likelihood to utilise different types of healthcare facilities. Similarly, the study in a low income re-settlement colony of Delhi, Sundar (2000) revealed that affordability and availability of healthcare facilities are not the main reasons for morbidity among the people, but less concerned about the health issues and too much dependence on traditional system of medicines are the reasons for it.

Besides socio-economic status of the sick person, other factors such as patient's preference over the available healthcare facilities may also determine the seeking behaviour of the people. As it was revealed in a study, Yesudian (1990) in his study on health seeking behaviour of two separate slum communities in Bombay city (now Mumbai) showed that people in both the areas utilised private healthcare facility more than the public healthcare for short-term and minor illnesses, but for acute illness cases requiring hospitalisation, they preferred to avail public healthcare services. However, a national level survey by National Sample survey Organisation (NSSO, 1992) revealed the preference of allopathic system of medicine among the people and higher utilisation of private practitioners for non-hospitalisation cases in both rural and urban areas, but for hospitalisation cases, different socio-economic groups preferred different sources of care in India. But the study conducted in Karnataka in India, Samuel et al. (1992) found the higher morbidity prevalence among the low level of economic group and it was further revealed that out of the total ill persons those utilised healthcare facilities, about 32 percent ill persons utilised private healthcare services, about 41 percent took the treatment from the public health facilities and 26percent used either private or the public sources. The study pointed out that choice of a particular source of treatment mainly depends upon convenience and quality of treatment.

During the same year, with the aim of understanding the utilisation of various systems of medicine associated with the nature and types of illness suffered by households, National Council for Applied Economic Research (NCAER) (1992) conducted a survey in rural and urban areas of major States & Union Territories of India. Total 41 cities having above 5 lakhs population were selected from the urban areas. Study revealed that both in rural and urban areas majority of the households took the treatment from allopathy system of medicine and for minor treatment, a large number of households adopted self-medication practice. Utilisation of healthcare facilities was higher in private care than in public healthcare. Study categorically showed that urban households comparatively spent large amount of money on the treatment of accident and other injury cases and rural households were found to spend large amount on the treatment of different degenerative diseases. But the study did not categorically highlight the type of visit or nature of utilisation (such as hospitalised or non- hospitalised) for which healthcare facility was utilised.

On the other hand, Sundar (1995) revealed that untreated illness episodes in rural areas were about 12 percent and that of in urban areas were 8 percent respectively. Low severity of illness was cited as the reason for no treatment or non-utilisation of any healthcare facility. In most of the states, the number of hospitalisation cases per 1,000 population was lower for females than that of for males. In both rural and urban areas, utilisation of private health facilities was higher for the treatment of acute illnesses, and a considerable number of illness episodes followed self-medication. In rural areas for accidents and injuries, the utilisation of public health facilities by males was 60 percent and by females it was 70 percent respectively. For majority of illness cases, allopathic system of medicine was sought. In both rural and urban areas, majority of the hospitalised cases took place in public healthcare facilities due to free or less expensive treatment and nearest distance from residence. Further, study revealed that dependence on public health facilities was higher for natal, intra-natal and preventive healthcare than for the other causes. But delivery of child occurred at home in rural area was 23.4 percent and in urban areas 11.2 percent respectively. But in a state level study by George et al. (1993) in rural and urban areas of two extreme districts (in terms of development) of Madhya Pradesh, revealed that majority of the sick persons utilised private healthcare facilities and utilisation of public healthcare sector was very low. However, by combining the two macro

level survey results, NSSO (1992) and NCAER (1992a), Purohit and Siddiqui (1994) argued that use of indigenous non-allopathic system of medicine is rising in the country.

Based on NCAER data of 1992, Shariff (1995) pointed out that about 8.5percent of the reported morbidity in urban areas of India were untreated, among them, Andhra Pradesh recorded highest with 16.1percent, followed by Karnataka with 11.9 percent and then Kerala with 10.8percent. However, study in both urban and rural community of Thiruvanantha Puram district of Kerala state by Shenoy (1997) revealed that out of 1001 households, 2237 persons had at least one morbidity problem. Out of total ill persons, 1552 persons utilised the healthcare services either public or private. Further, out of total 1552 ill persons, 67percent persons took the treatment from private and 33percent persons used the public health services. In addition, the study revealed that younger ill persons (i.e. 14-44 years) preferred private health facility as compared to the adults aged between 45 and 59 years old. Low socio-economic groups were found to utilise more public health facilities for chronic diseases as compared to other counterparts. The study emphasised the need for development of new strategies to increase the accessibility as well as the utilisation of public healthcare services in efficient and effective way.

In this tradition, Nandraj et al. (1998) analysed the pattern of perceived morbidity, utilisation of healthcare services of the women living in a congested area of Greater Mumbai city. The study covered 430 households and the data were collected by interviewing the women. The result revealed that the monthly prevalence rate for females was 571 per 1,000 and the majority of illness was related to menstruation and other reproductive illness. Further, 32.5 percent untreated cases were found, low severity and lack of financial resources were found as the major reasons for non-utilisation of healthcare facilities. Out of the total treated cases, 85 percent utilised private healthcare facilities. Further, it was reported that 30 percent of the deliveries took place in public healthcare while 31.7 per cent in private sector but all the abortions took place in private institutions. The findings indicated a strong relationship between women's work lives and their health status.

In another study in rural and urban Nasik district, Madhiwalla et al. (2000) revealed that non-utilisation of healthcare services and utilisation of informal facilities were found comparatively higher among the urban women than the women in the rural areas. Higher utilisation of healthcare facilities was found among the dependent women, unmarried girls and

old women than the others. On the other hand, Navaneetham et al. (2000) highlighted the rural-urban differential in access to healthcare facilities was an important reason for lower utilisation of maternal healthcare services, particularly for institutional delivery and delivery assisted by health personnel in the rural areas. In the same year, in a study in the slum areas of Bombay, Surender (2000) showed that mainly due to ignorance about health matter, people did not utilise the healthcare services though adequate facilities were available in the area.

Later on, using NSSO 42nd round survey data, Duraisamy (2001) revealed that majority of the sick people in Tamil Nadu preferred allopathic system of medicine during their illness episodes. The study highlighted that utilisation of public healthcare services considerably decreases as the level of education and per capita income of the people increases. But, Sundarand Sharma (2002) found that morbidity pattern and healthcare utilisation are strongly related. As morbidity profile of the individual changes, health seeking behaviour of poor people living in slums and resettlement colonies of Delhi and Chennai also changes accordingly. In that case, economic status, level of education and health consciousness of individuals play significant role in deciding and selecting the healthcare services.

Another important study, Selvaraju (2003) revealed that majority of the low income group households depend on public health facilities whereas high income group households depend on private health facilities for both short-duration and long-duration illnesses. A large number of patients with short-duration morbidity such as diarrhoea, cold and cough and fever sought treatment either from traditional practitioners or from unqualified medical practitioners. It was further observed that people utilised more public health facilities in Orissa, Rajasthan, Madhya Pradesh, Andhra Pradesh and Karnataka but people of other states mainly took the treatment from private health services for all types of disease.

Later on, using the National Council of Applied Economic Research and Human Development Indicator (NCAER-HDI) survey data of January-May 1994, Song et al. (2004) analysed the health service utilisation patterns of the women, particularly, in case of, mental health services use and peri-natal and postpartum care. They found that nearly 10 percent of the women utilised the mental health services and 6 percent utilised services during pregnancy and postpartum. Women were found to utilise more healthcare services when they had multiple chronic diseases, faced pregnancy related complications etc. Further, the study distinctively

observed that women utilised more outpatient facilities during pregnancy than during the post delivery period.

But, in analysing the morbidity profile and health seeking behaviour of the people of Kerala, Krishnaswami (2004) revealed that morbidity prevalence rates for acute illness and chronic ailments were 58 and 63.53 per thousand people respectively. Majority of the people both in rural and urban areas took the treatment from private facilities. It was further observed that the percentage of untreated patients in the age group 0-4 and 5 and above 5 years old was estimated as 3.12 and 7.47 respectively. Out of total 3337 cases of acute illness, only 8.09 percent took hospital admission. Out of total hospitalisation cases, admission to government hospital was 32.96 percent, private hospital was 66.30 percent and others were 0.74 percent. Allopathy was found the most popular system both for acute and chronic illnesses for all age group people, followed by homoeopathy and ayurveda. Mainly for the treatment of rheumatism and arthritis ayurveda medicines was followed, though considerable number of people with chronic condition took treatment from allopathy system. The study did not consider any illness episode and its utilisation behaviour relating to accident and intentional or unintentional injury of the people in the region.

Qian et al. (2009) in their study showed that as the type of illness changes people shift their choices from one source of care to another. Study found significant effect of illness type on choice of healthcare providers. However, the study of Jain et al. (2006) revealed that due to poor quality of public health facilities, rural communities are more likely to take treatment from private healthcare service providers though their socio-economic background do not support them.

But Majumder (2006d) in his study on user's perception regarding choice of a healthcare on rural and urban areas of Cooch Behar and Jalpaiguri districts of West Bengal, highlighted that in both areas people preferred private healthcare facilities for quality of care. The study revealed that on the one side, rural people utilised government health services mainly due to cheaper treatment costs, easy accessibility, short distance and no other alternatives sources available in their area. On the other hand, urban households were found more likely to utilise private healthcare facilities mainly because of their affordability or economic status.

In their study, Desai et al. (2010) mainly analysed the health-seeking behaviour of households according to their socio-economic background when they suffer from any minor or

major illness. They found very high prevalence of minor illnesses such as cough, fever, diarrhoea etc. and major illnesses such as hypertension, heart diseases, diabetes etc. among Indian population. Further, they found higher prevalence of minor illnesses among the poor, uneducated and scheduled tribe people than the other counterparts. Study revealed that rural households preferred to visit private facilities for minor illnesses due to easy availability, greater convenience and no diagnostic tests. In addition, study revealed that percentage of untreated cases was much higher in rural areas than large cities of India. Low severity was highlighted as the reason for low utilisation of public healthcare services.

One of the very recent studies (Jakovljevic and Milovanovic, 2015) concluded that during the epidemiological transition phase, communicable diseases are displaced by the chronic, non-communicable diseases, degenerative and man-made diseases. As a result demand for healthcare services including medical diagnostic services increases. However, based on National Sample Survey Organisation (NSSO) data of the year 1995-1996 and 2004, Engelgau et al. (2012) examined the impact of non-communicable diseases (NCDs) on utilisation of healthcare services by households. Beside injuries, hospitalisation cases were mainly found for NCDs such as heart disease, cancer, hypertension, and diabetes. The study revealed that due to NCDs the utilisation of inpatient care (hospital stays) increased from 32 percent in 1995-96 to 40 percent in 2004. Households were found to utilise more private health services for hospitalisation, outpatient care, medications, and diagnostics as compared to public health facilities and others. But Karmakar et al. (2012) in their study in Bhatar block, West Bengal highlighted that a large portion of the households were treated with modern system of medicine and very small percentage took the treatment from traditional systems of medicine. Majority of the injury cases were treated in public health services. But the study interestingly pointed out that utilisation of public healthcare institutions and private health facilities including private practitioners, small clinics, and chambers were more or less similar for the treatment chronic illnesses.

But in a different type of study in Shimla on non-communicable diseases among the elderly persons and their health seeking behaviour, Sharma et al. (2013) found that 65.8 percent morbid persons had sought treatment from any healthcare facility available in the region. Majority of the persons utilised the public healthcare facilities and 12.5 percent used over-the-counter drugs for treatment during their illnesses. It was observed that 81.2 percent persons

preferred allopathic medicine, 11.3 percent persons took ayurveda medicines and 7.3 percent persons took homeopathic medicine during their illness episodes. However, study showed that gender and socio-economic status did not play significant role in treatment seeking practices, but perceived distance, lack of money, trust on god, and no accompanying person were found the contributing factors for not availing any healthcare facility.

Further, in examining the impact of multi-morbidity of non-communicable diseases (NCDs) on healthcare utilisation in India, Pati et al. (2014) highlighted the utilisation pattern of outpatient and inpatient care according to different socio-economic groups during last 12 months. By applying negative binomial model, the study found that average outpatient visits in the past 12 months had increased from 2.2 to 6.2 and hospital stay in the past 3 years had increased from 9 percent to 29 percent respectively. The results indicated a positive association between number of NCDs and healthcare utilisation for both outpatient and inpatient services. The study concluded that healthcare service utilisation by the people simultaneously increases with the increase in the number of NCDs.

In his study Ghosh (2015) examined the socio-economic determinants of utilisation of inpatient care in India using the National Sample Survey Organization's 60th round (2004) survey data on 'morbidity and health care'. The frequency of hospitalisation and duration of stay was estimated by applying the two-part model and zero-truncated negative binomial regression model respectively. The study found that high income group people have higher propensity to take inpatient care with more frequently than the low income group of people. Further, the study indicated that though economic status determines the decision of taking hospital admission, but the length of stay is determined by other factors such as affordability or wealth possession etc. In such a situation, low income group were found to sell off their assets or borrow money forcefully. The study recommended the government for more allocation of funds through National Health Mission to improve the access of quality healthcare services for the poor people.

In another recent study, Brinda (2015) investigated the determinants of healthcare service use in one Low Middle Income Country (LMIC), India, using the data of WHO's Study on global Ageing and adult health. Multivariate zero-inflated negative binomial regression models were used to evaluate the determinants of health service visits. The study also revealed that increase in disease leads to an increase in number of health visits (both inpatient and

outpatient). However, Lee (2015) assessed the impact of non-communicable multi-morbidity on healthcare facilities in six middle-income countries, viz. China, Ghana, India, Mexico, Russia and South Africa. The study considered age, gender, place of residence, geographical regions, education, health insurance status, and wealth quintiles as predictor variables. Association between number of morbidity relating to NCDs and healthcare utilisation was assessed by a logistic regression model, and impact on number of outpatient visits or hospital stays was estimated by negative binomial models. The study found higher prevalence of multi-morbidity in urban areas compared to rural areas in all countries excluding India and Ghana. In all countries, it was also found that the outpatient visit had increased from 51 percent for those without any NCD to 72 percent for those with multi-morbidity, indicating a positive association between number of NCDs, and outpatient visits and hospitalisation days during the reference period of twelve months. The study found that with the increase in number of morbidity outpatient visits increases in China, hospitalisation increases in India. The study concluded positive association between number of morbidity and levels of healthcare utilisation in most countries including India.

Keeping in mind the factors associated with utilisation of healthcare services discussed in the past studies, present study will try to analyse how burden of disease (which is indicated by category of disease, severity of disease, nature of disease and duration of disease) impacts the healthcare utilisation services, in the light of demographic and socio-economic background characteristics of the people of a corporation city having cosmopolitan culture, huge population pressure, diversified healthcare infrastructure, dominance of private healthcare etc. Study will attempt to be familiar with the fact that how utilisation pattern (modern or traditional), system of medicine (allopathy, homeopathy, ayurveda, and others), sources of care (public, private and others), type of visit (OPD services or IPD services) varies as the category of disease, severity of disease and nature of disease of the people varies during the reference period.

2.1.2.3 Impact of Burden of Disease on Out-of-Pocket Healthcare Expenditure

Insufficient or little knowledge regarding the healthcare demand of the consumers, may result in overcharging and high costs services in a private healthcare market (Mills, 1983). Further, with the advent of privatisation, deregulation of medicine price and introduction of user fee in public health facilities during 1990's, India experiences socio-economic inequalities in access

and affordability of healthcare services (Chaudhuri, 2012) and this leads to push out-of-pocket healthcare expenditure upward in both public and private healthcare facilities (Ghosh and Arokisamy, 2011). It is estimated that in India, households bear about 72 percent of total healthcare expenditure from their own pockets (National Health Accounts India, Ministry of Health and Family Welfare, Government of India, 2005). In a study by Xu et al. (2007) indicates that that majority of the people in low income countries are moving towards poverty due to high OOPHE and it pushes non-poor households into poverty cycles (Wagstaff and Doorslaer, 2003; Prinja et al., 2012). Another estimate by Ghosh (2011) showed that high expenditure on healthcare pushed 35 million people in 1993-94 and 47 million people in 2004-05 into poverty trap respectively and it caused people under poverty line by 3.5 percent (Shahrawat and Krishna, 2012)

Using the national household income and expenditure surveys from 89 countries Xu et al. (2007) found that each year about 150 million individuals suffer financial hardship and approximately 100 million people fall below poverty line due to all health-related expenses from their own pockets. Financial catastrophe due to high OOPHE is found to be the highest among the economically disadvantaged sections of the population in low income countries. Another study by the same researchers (Xu et al., 2011) using panel data from 143 countries, both developed and developing from 1995 to 2008, found that healthcare expenditure ranges between 5 percent to 15 percent of GDP and it grows but less than their GDP. Further, the study finds that in higher income countries, healthcare expenditure by the government is comparatively higher and OOPHE by the households is comparatively lower than the other countries.

A study by Dror et al. (2008) segregated the total cost of illness episode into three components. They are : (a) direct formal costs (including allopathic consultations, prescribed allopathic drugs, tests and hospitalisations) representing about two-thirds ; (b) informal costs (including traditional consultations and drugs, and OTC drugs) representing about one third ; and (c) indirect costs (including wage loss of the ill and of the care-giver, and transportation costs) representing only 3.2 percent of total costs. Further, the study estimated that median cost for per illness episode is Rs. 340 and it ranges between 73 percent and 780 percent of households' monthly income. The study was based on the data collected through a household survey under the project "Strengthening micro health insurance units for the poor in India"

among 2204 households comprising 17,323 individuals in five resource-poor locations (from the states Maharashtra, Bihar, Tamil Nadu) in India during April- September in 2005. Further, the study finds that the costs varies markedly among different illness types, while acute illnesses account for 37.4 percent and chronic illnesses account for 32 percent out-of-pocket expenditure on health. Demographic, socio-economic factors of the households and types of healthcare service provider (private, public and charitable etc.) were found as the important factors affecting the costs of illness. Further, using multivariate analysis, it was found that cost of treatment for chronic illnesses was higher than for non-chronic illnesses.

On the other hand, using the 60th round National Sample Survey (NSSO, 2004) data, Suryanarayana (2008) examined the economic profile of morbid people in Kerala as well as in whole India by estimating Engel elasticities for diseases and classifying them between those associated with affluence and deprivation. Further, pseudo-Lorenz ratios were found to be negative for the diseases of poor households. Elasticity of the life style diseases such as coronary heart diseases, diabetes and hypertension were found to be greater than one for rural India but in Kerala it was found to be negative. Engel elasticity of total reported morbidity was found to be less than or about one per cent for tuberculosis in both Kerala and India as a whole; more than 3 percent for bronchial asthma in India and 5 per cent in rural Kerala. Undiagnosed diseases were found among the poor households in both rural and urban areas of the country. The study found that diphtheria contributes 1.70 per cent of total morbidity in rural India. Though prostatic disorders and tetanus contributes 0.16 per cent of total morbidity in rural Kerala but their Engel elasticities are negative. The reported morbidity among the rich households in the rural and urban areas in India was estimated to be 7.83 per cent and 6.83 per cent respectively. In Kerala, morbidity among the rich households was estimated to be 1.23 percent and among the poor household it was 1.75 percent.

Applying the same National Sample Survey (NSSO, 2004) data, Kumar et al. (2011) found that majority of the people in northern states, particularly, Uttar Pradesh and Uttaranchal, and north eastern states, like Nagaland, Mizoram and Assam, managed their treatment costs from other sources, such as borrowings or donation from friends and relatives, and by selling ornaments or other valuables. Further, it was found that high income groups utilised both the expensive private sources and subsidised public sources of care during their illness episodes. On the other hand, it was revealed that low income groups experienced poor quality services in

public sources and faced financial hardship to receive the treatment from private healthcare services.

In examining households' out-of-pocket healthcare expenditure, Gopalan and Das (2009) also revealed that 49percent respondents took the treatment from private healthcare facilities, 20percent from government healthcare services and remaining 31percent utilised both public and private healthcare facilities for the diagnosis as well buying medicines for the treatment of chikungunya in Kural village in Nayagarh district of Orissa, India. The study revealed that cost of treatment increases when duration of illness increases and when treatment is received from private healthcare facilities. Further, females were found spending more money on treatment than the male counterparts. Study suggested the strengthening of the infrastructure of public healthcare system to enhance the utilisation of healthcare services. Further, analysis of Shahrawat and Rao (2012) showed that 3.5 percent individuals were pushed to below poverty level and 5 percent households suffered from financial hardship due to high OOPHE. Expenditure on medicine (82 percent for outpatient care and 42 percent inpatient care) was found to be the major component and constituted 72 percent of total OOPHE. The study indicates that high OOPHE made people exposed to catastrophic healthcare expenditures and insurance can only protect poor households from high OOPHE.

Prinja et al. (2012) undertook a study to ascertain the extent of inequities in out-of-pocket healthcare expenditures in two higher income north Indian states, Haryana and Punjab, and Union Territory of Chandigarh, using the data obtained from 60th round National Sample Survey Organisation (2004) and found that OOPHE in three regions was progressive pattern with the rich spends more as a proportion of income than the poor. Further, Punjab and Haryana showed higher and Chandigarh showed lower prevalence of catastrophic expenditure among the poor. Expenditure on medicine contributed major part of total OOPHE. In hospitalisation cases, it accounted for 19 to 47 percent expenditure and in outdoor cases it accounted for 9 to 86 percent of expenditure in all three regions. OOPHE was sourced either by borrowing, or by selling of assets etc. High costs of medicine were found responsible for high burden of out-of-pocket expenditures of the households.

Using World Health Survey, 2003 dataset, Saksena et al. (2010) analysed the healthcare expenditure in 39 low and low-middle income countries on outpatient consultations as well as inpatient stays in public and private. Study revealed that on average, 45 percent of total

payments for outpatient services and 60 percent for inpatient services were paid to the public facilities. Moreover, the study found that the largest part of OOPHE in both public and private facilities was on medicines, which accounted for more than 57 percent of outpatient direct payment at public facilities and more than 45 percent of outpatient OOPHE at private facilities. Consultation fees for inpatient and outpatient services at public facilities accounted for on an average, 10 percent of total OOPHE. Breaking the data, study found that consultation fees, on average, accounted for 22 percent of outpatient OOPHE and 26 percent of inpatient OOPHE at public facilities. On the contrary, consultation fees accounted for 40 percent outpatients OOPHE and 43 percent inpatient OOPHE at private facilities. It indicates that consultation fee was comparatively higher in inpatient OOPHE at private healthcare facilities than the public healthcare facilities. The study considered 30 days for outpatient visits and one year for inpatient stays preceding the survey. In the study, consultation fees, medicine, tests, transport costs etc. were considered as the components of out of pocket healthcare expenditure. Significant price differentials between public and private providers were also observed in most of the countries for both outpatient and inpatient services.

But Mahal et al. (2010) in their study estimated that, about 50percent OOPHE was made for the treatment of non- communicable diseases in India. This OOPHE increased from 31.6 percent in 1995-96 to 47.3 percent in 2004 and major part of expenditure comprised of buying of medicines, medical equipment and diagnostic tests. Using multivariate regression analysis, the study found that costs of hospitalisation for the treatment of non-communicable diseases, such as for cancer diseases was 160 percent higher and for cardiovascular diseases, it was 30 percent higher than that of any other communicable diseases. The study used the 30 percent thresholds of non-subsistence expenditure for measuring catastrophic health expenditure.

Mondal et al. (2010) in their study regarding the burden of catastrophic out-of-pocket healthcare expenditure on households' economic status and the factors determining catastrophic healthcare expenditure in three districts (Malda, North 24 Pargana and Bankura) of West Bengal found that prevalence of multiple illnesses among the households. Further, medical expenditure on chronic illness and inpatient care were found to be the most important factors. Expenditure on chronic illness was found to be 5.16percent of total household expenditure. Further, the study found that spending on in-patient, outpatient and institutional deliveries were 11.55percent, 4.03percent and 3.96percent of total household expenditure respectively.

Expenditures on drug and medicines, consultation fees, hospital bed charges, transport charges to the treatment site and daily leaving cost, including food and lodging for the escorts of the ailing household member were considered as major components of OOPHE. Recurrent expenditure on minor illness was found to be a reason for deterioration of economic status of the households. Further, it was found that households sacrificed current food consumption, children's education, social recreation etc. for recurrent expenditure on treatment. Negligible percentage of households was found to be covered by health insurance benefits in the area.

But the study of Ghosh (2011) is worth mentioning here. Using the cross sectional data from National sample Survey on consumption expenditure of 1993-95 and 2004-05, study showed how OOPHE affects households' living standards in India and its 16 states. The findings revealed that in India, expenditure on healthcare as a percentage of households' consumption expenditure increased from 4.39 percent in 1993-94 to 5.51percent in 2004-05. Although the other components of OOPHE considerably increased during two study periods, surprisingly households' expenditure on medicine declined from 81.66percent in 1993-94 to 71.71percent in 2004-05, and for West Bengal, it decreased from 77.87 percent in 1993-94 to 65.80percent in 2004-05. Reason for this declining trend was unexplored. Further, the range of healthcare expenditure on medicines in richer states such as Maharashtra, Gujarat, Kerala, Karnataka and Punjab was 60-67percent and that of for poorer states such as Orissa, Bihar, Uttar Pradesh and Assam was 79-85percent. But OOPHE for inpatient care showed opposite trend. Applying "catastrophic overshoot" method by Wagstaff and Van Doorslaer (2003), it was estimated that catastrophic OOPHE ranged between 3.46percent (in Assam) and 32.42percent (in Kerala). Further, it was found that due to high OOPHE, poverty ratio increased by 4 percent in 1993-94 and by 4.4percent in 2004-05. Medical inflation, increasing utilisation of private healthcare facilities, prevalence of non-communicable diseases in higher income states etc. were considered as the probable reasons for high OOPHE.

Reviewing the studies on impact of out-of-pocket payments for treatment of non-communicable diseases in some of the developing countries like India, China, Pakistan, Burkina faso, Georgia ,Vietnam, Kenya, Lebanon, Russia, Brazil (Saksena et al., 2012) found that households faced substantial financial hardship and impoverishment due to high OOPHE for different types of non-communicable diseases and this OOPHE ranged from 4.1percent of households income in Vietnam with chronic disease to a 34percent in poor people of India

with diabetic diseases. Further, hospitalisation cases represented much higher expenditure than the others. The study also found that 21percent uninsured households experienced financial catastrophe due to out-of-pocket payments for treatment of non-communicable diseases.

By considering households' healthcare needs and types of care and impact of burden of healthcare expenditure on households utilised in the south Indian state of Kerala, Mukherjee et al. (2011) examined the caste-based inequalities in per capita households' OOPHE in Kottathara Panchayat using the data from 2003-2004 panel survey. Using multivariate regression, it was found that households with chronic healthcare were at higher chance of incurring large expenditures on healthcare and hospitalisation expenditure was found to be the most impoverishing impacts on households belonging to Paniya, Other ST, SC and OBC caste. More funding towards hospitalisation for acute and chronic episodes was suggested against impoverishing healthcare expenditures. The study failed to consider some pertinent issues such as gender inequality and age within caste groups, the magnitude of the financial burden of out-of-pocket healthcare expenditure at the household level and effects of high healthcare expenditure on households' consumption of basic necessities.

Another study by Daivadanam et al. (2012) found that 84 percent of the households across all socio-demographic groups in Kerala were affected by acute coronary syndrome related catastrophic healthcare expenditure (both direct and indirect) during the three months pre-event and six months post-event treatment. Further, the study highlighted that catastrophic effects of the disease were turning into low income group, loss of job, burden of loans, sale of assets etc.

Brinda et al. (2012) in their study showed that income inequalities were associated with inequities of education, disease prevalence, and access to safe water, sanitation, and nutrition. However, the analysis by Bhojani et al. (2012) on households of Kadugondanahalli in South India, having one or more members in the family with a chronic condition revealed that median OOPHE per chronic condition was Rs. 320 but median OOPHE on outpatient care was Rs. 400. The study found that the median monthly OOPHE in private sector was Rs. 415 but in public sector, it was Rs. 280 during the 30 days preceding the survey. It was also found that OOPHE for direct medical care in the private sector was much higher than that of in the public sector. Cost of medicines constituted largest share (66.3 percent) of OOPHE, followed by expenditures on travel at referral hospitals (20.6 percent) and at super-specialty hospitals (16.4 percent) of OOPHE. Households with chronic conditions spent 3.2 percent of their income from their own

pockets for outpatient care. In private sector, this share was 3.3percent and in public sector it was 2.4percent. It was found that burden for the poorest quintile was considerably higher than that of the richest quintile. The findings suggested that 0.9 percent people with chronic conditions were pushed into under the poverty line. The study applied catastrophic healthcare expenditure using a threshold of 10 percent of non-subsistence expenditure and found that on average 16percent of households suffered financial catastrophe with one or more members with a chronic condition due to OOPHE. Among people who sought for care for chronic conditions, 3.4percent borrowed money, while 0.2 percent sold or mortgaged their assets.

In a study on inter-state variations and socio-economic differentials in out-of-pocket expenditure on institutional delivery in public and private health centres in India, Mohanty and Srivastava (2013) in their showed that during 2004–08, the average OOPHE for a delivery in a public health centre was US\$39 and in a private health centre, it was US\$139, which is about three times higher than in public health centres. Economic status and educational qualification of women, quality of care were found to be important factors for high OOPHE. The study utilised the unit data from the District Level Household and Facility Survey (DLHS-3), on reproductive and child health, conducted in India during 2007–08, and the study was based on the 94611 ever-married women aged 15–49 who gave birth at health centres (both public and private). Logistic regression model, principal component analyses and a two-part model were used. Economic differentials, social differentials and demographic differentials were measured for India and the states of Uttar Pradesh and Tamil Nadu by these methods. Tamil Nadu was found to have high coverage and lowest associated cost in a public health centre, but Uttar Pradesh represented lower coverage and lowest associated cost than in any other states. Further, Kerala represented maximum OOPHE with US\$149 and Chhattisgarh represented minimum with US\$17. Study found no significant difference in transportation costs between public and private centres. Using logistic regression, study found negative association between OOPHE on delivery care and the age of women; positive association between the average OOPHE and State Domestic Product Per capita (SDPP), registered number of doctors per one lakh population and per capita public expenditure on health. Education attainment of women, birth order of child, sex of child, economic status of women, place of birth etc. were found significant for OOPHE in delivery care. Study also considered the catastrophic effects of OOPHE for the poor and the marginalised population, but at what threshold level was not

mentioned. It was found that OOPHE is significantly lower among the Janani Suraksha Yojana (JSY) beneficiaries than the others. Families holding BPL card were found to spend more healthcare expenditure than the other counterparts. In another recent study, Brinda (2015) investigated the determinants of health service use, out-of-pocket and catastrophic health expenditures among older people of India, using the data from the WHO's Study on global Ageing and adult health in India. Socio-demographic characteristics, health profiles, health service utilisation and out-of-pocket healthcare expenditure were assessed using standard instruments. Multivariate Heckman sample selection regression models were used to assess the determinants of out-of-pocket and catastrophic healthcare expenditures. OOPHE was higher among the participants with disabilities and belonging to lower income groups. The study calculated the prevalence of catastrophic healthcare expenditure among older people in India was 7 percent. The result indicates that older men and individuals with chronic diseases are at higher risk of catastrophic healthcare expenditure. However, in examining the impact of multi-morbidity associated with non-communicable diseases (NCDs) on healthcare utilisation and OOPHE in India with respect to the socio-economic and demographic characteristics of the people, Pati et al. (2014) highlighted the utilisation pattern of outpatient and inpatient care, and associated OOPHE during last 12 months. The background characteristics included in the study were age, gender, caste or tribe status marital status, education, location, state, economic position of household, wealth/assets, and possession of health insurance. The study used the cross-sectional survey data from the WHO Study on Global Ageing and Adult Health (WHO SAGE) in India, 2007, covering nationally representative samples of six states viz. Assam, Karnataka, Maharashtra, Rajasthan, Uttar Pradesh and West Bengal. Result indicated that OOPHE for outpatient visit increased from Rs. 272.1 with no NCD (non-communicable disease) to Rs. 454.1 with more than two NCDs during preceding 12 months, but OOPHE for hospital stay did not increase considerably with number of NCDs. For outpatient and inpatient care, medicine constituted the major part healthcare spending, followed by consultation fees and others. Study concluded that healthcare utilisation and OOPHE on healthcare simultaneously increase with the increase in the number of NCDs of the people.

2.2 Research Gap and Relevance of the Study

From the past studies carried out by the researchers in the concerned field from the various disciplines, it is evident that there are many factors which influence the utilisation of healthcare services and out-of-pocket healthcare expenditure directly and indirectly. Moreover, majority of the earlier studies focused either on utilisation of healthcare services or on out-of-pocket healthcare expenditure in different urban-rural settings separately. Very few studies covered both the issues together. On the other hand, how burden of disease (which is indicated by morbidity, and is measured by type of disease, severity of disease, nature of disease, and duration of disease) affects the health seeking behavior and out-of-pocket healthcare expenditure incurred by the people, is less researched or needs to be explored further in the Indian context, particularly in a corporation city, where there is no any structural guideline of healthcare institution as exists in the rural areas of the country under the aegis of National Rural Health Mission(NRHM) and National Urban Health Mission (NUHM). Further, limited studies focused on how utilisation of healthcare service (such as pattern of health service use, system of medicines, and sources of care) and out-of-pocket healthcare expenditure of the households are affected when disease burden of the people varies. In addition, majority of the studies conducted in the country related to these issues are basically confined to the few states of south India, but in eastern part, such type of study is very limited in number. The present study will try to establish the comprehensive view of the impact of burden of disease on both utilisation of healthcare services and out-of-pocket healthcare expenditure by the households in a corporation city having cosmopolitan cultural background, huge population pressure and considerable number of slum dwellers, influx of immigrants, mixed healthcare system etc.