CHAPTER 1
INTRODUCTION

‘Health is wealth’ is an old adage. Like wealth, disease free longer life is not an exclusionary end in itself but an instrument for achieving other goals of individuals, locals, national and international communities. Overwhelming evidence suggests the crucial role of good health in enhancing labour productivity, earnings, educational attainments, gender equity, reduction of deprivation of basic necessities, demographic transition, national and international development (NCMH, 2005; WB, 1993; Dhesi and Dhariwal, 1990). Once considered to be an exclusive domain of medics and epidemiologists, health gained immensely from the contributions of sociologists, economists, psychologists, anthropologists, demographers and experts in public health. Health today occupies the centre stage in national and international developmental agendas. For instance, health is a crucial ingredient for the measurement of Human Development Index (HDI), Gender Development Index (GDI) and Human Poverty Index (HPI) – the indicators employed by the United Nations Development Programme (UNDP) to evaluate and rank countries on developmental scale.

Beginning with Alma-Ata declaration on primary health care in 1978, numerous international initiatives contributed to put health at centre stage. The noteworthy in this context is the World Health Organisation’s (WHO’s) Commission on Macroeconomics and Health (CMH) and subsequent similar national commissions in low income countries including India. Three of the eight United Nation’s Millennium Development Goals namely, reducing child mortality, improving maternal health, combating HIV/AIDS, Malaria and other diseases are directly concerned with health (UN, 2000). Health is crucial to the other two goals – eradication of extreme poverty and hunger; and promotion of gender equity and women empowerment. These goals have profound implications for developing countries like India having large
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population still fighting for day-to-day survival, dying prematurely due to inadequate access/non-affordability of medical care and bearing the agony of pain and suffering from many communicable diseases that stand almost eradicated from developed world.

On the fateful midnight of 14th August, 1947, when the country attained its independence, Pt. Jawaharlal Nehru, the first Prime Minister of India, promised to countrymen for ending poverty and ignorance and disease; and inequality of opportunity and to wipe out tears from the eyes of every Indian within 10 years (Gopal, 1983). Consequently developmental agenda was set and the country witnessed remarkable achievements on many accounts including health. Many of the epidemics like famine, Kala-azar fever, influenza, plague and smallpox, which continued to haunt the erstwhile British India, stand almost eradicated. People's life expectancy has almost doubled from 32 years in 1947 to 64 years in 2005, infant mortality rate (IMR) plummeted from 146 deaths (per 1000 births) in 1961-62 to 56 in 2005, overall mortality rate declined from 30 (per 1000 Population) in 1951 to 7.6 in 2005, literacy rate jumped four fold from nearly 15 per cent in 1951 to 67 per cent in 2001 and per capita income increased almost ten fold from Rs. 239/- in 1951 to Rs. 23,241/- in 2004-05 (at current prices) (UNDP, 2008; NCMH, 2005; SRS, 2006; GOP, 2007). These achievements notwithstanding, India is still far behind what has already been achieved by other countries who started from the same low level and placed in similar circumstances. For example compared with India's IMR of 56 per 1000 births, Sri Lanka's is 12, China's is 23 and Thailand's is 26; against India's 74 under 5 mortality rate, Sri Lanka's is 14, China's is 27 and Thailand's is 30 and compared to life expectancy at birth of China's at 73, Sri Lanka's at 71 and Thailand's at 70 average life of an Indian is 64 years at birth in 2005 (UNDP, 2007).

India's performance on morbidity count is even worse when compared with other countries. Against 16.5 per cent share of global population, every third person suffering from tuberculosis, respiratory, diarrhoeal and other infections is an Indian. Similarly, India houses large number of HIV/AIDS
cases after Africa (NCMH, 2005). The national scenario notwithstanding, there are extreme inequalities and disparities in terms of health care and outcomes. Within the country itself against 9 per cent population below poverty line in Punjab, the figure for Bihar and Orrisa is 40 per cent (GOI, 2007a). About half of the poor and malnourished are concentrated in few states. Life expectancy at birth is 74 in Kerala against 56 in Madhya Pradesh. In fact there is sharp north-south divide in almost all health outcomes (NCMH, 2005, p.16). Even the health outcomes vary considerably across castes, religious groups and socio-economic classes in the country. Similarly, as different diseases have geographical and climatic variations, the nature and extent of morbidity varies across regions. The canon of justice pleads for reduction of such disparities, if not their elimination altogether. As such health disparities are presumed to be originating from different relative positions in social hierarchy due to wealth, power or prestige, they are considered to be potentially avoidable (Braveman, 2006). Therefore, selective focus on regions and disadvantaged population groups on improving conditions in realising good health are justified to forge equity (Braveman, 2006).

Recognising the need to promote greater health equity the WHO appointed a Commission on Social Determinants of Health (CSDH) in March 2005. The Commission builds on a historical tradition, recognising relationship between social conditions and health outcomes. These include the sanitary campaign of 19th Century and linking health progress to self empowerment and political and social changes of 20th Century and 1978's Alma-Ata 'Health for All' movement. Taking a holistic view of social determinants of health, the CSDH grouped determinants into two broad categories. The first being those related to determinants of health inequalities (structural determinants) and other being intermediary determinants of health. The structural determinants are rooted in socio-economic and political institutions. These structural factors produce social stratification – a set of socio-economic positions relating to power, prestige and access to resources and discrimination. The most important stratifiers include income, social class, education, gender and race or ethnicity. These stratifiers are produced and maintained by socio-economic
Introduction and political institutions that include governance, education system, labour market, culture, religion, human rights and other welfare policies of the state. These structural determinants have an impact on health outcome through a set of intermediary determinants of health. The main intermediary determinants are: material circumstances (housing and neighbourhood quality, financial capabilities and physical work environment), psychological circumstances (stressors, social support and coping strategies), behavioural and biological factors (nutrition, physical exercises and tobacco and alcohol consumption). Besides these structural and intermediate determinants, the CSDH also conceptualised the health system as a social determinant of health. Unequal access of health services to different social groups also contribute to different health outcomes. For closing the health gap and action on the social determinants of health, the Commission recommends the involvement of whole of Government, Civil Society and local communities, business and global forums and international agencies. It further stressed that the implementation of CSDH recommendations must embrace all key sectors of the economy not just health alone (CSDH, 2008, p.1).

Designing and implementation of CSDH recommendations require huge resources which may be beyond the capacity of most developing countries in the short run. Resource constraint means that neither every health condition can be attended to nor every redressal intervention can be financially supported (NCMH, 2005, p.28). The way out therefore is to prioritise the actions. These actions can be ranked within the broader policy framework of the government, preferences of community and other stakeholders, nature and prevalence of diseases, disease-wise economic burden, availability of resources (financial as well as human), existing health infrastructure and effectiveness of various actions and over all cost benefit of various policy initiatives. For example, the National Commission on Macroeconomics and Health (NCMH) while recognising the resource constraint and investment already made in health infrastructure, recommended the need to focus on utilisation of government sources for public information and dissemination of health awareness, through
compulsion or persuasion, sound dietary and life style habits (NCMH, 2005, p.16). Prioritising action is also required from the changing profile of morbidity overtime. Many traditional communicable diseases are either stand eliminated or are on their way out whereas many other chronic ailments are expanding rapidly. Consequently, research and development (R&D) activities in the field of pharmaceutical and medical devices/equipment and requirement of other specialists such as doctors/nurses/technicians, in-door treatment facilities need to be adjusted accordingly.

Emergence of costly treatment diseases like cardiovascular, cancer, diabetes and HIV/AIDS may prove to be catastrophic and involve serious ramification for victims. Since low income and poor households are rarely insured against catastrophic ailments, many may die untreated due to financial constraints. Many others are compelled to sell their meagre assets and pushed into debt trap and prolonged poverty. Burden sometimes spills over to next generation as children from such families are often forced to withdraw from school and to join workforce for family survival (CMH, 2001). Development priorities of inclusive growth and poverty alleviation and commitment to the achievement of Millennium Development Goals, therefore, requires special focus on the health requirements of such low income households. Notwithstanding the number of social health insurance programmes, the conclusive evidence on the operation and effectiveness of such schemes is lacking in India. In designing and effective implementation of the social health insurance for poor in India, most crucial is the detailed information on nature and extent of ailments and their economic burden on the down-trodden segments of the population. Equally important in this context is the in-depth information on their health seeking behaviour and coping strategy with ailment.

The existing studies on individual diseases undertaken by the medical professionals provide limited information and lack generalisation for policy implications due to the various reasons. Firstly, majority of these studies are based on the medical statistics of illness collected from the indoor and
outdoor patients. Majority of these studies are focused on genetic/clinical aspects of illness. Furthermore, most of the intentional and un-intentional non-treated illness or illness treated by the traditional methods or the people who suffer premature death from some illness, generally remain out of preview of such studies. Secondly, most of the medical or clinical literature on illness is focused on the role of many intermediate indicators or symptoms of the illness. But it has been established by empirical literature that social, economic, cultural and environmental conditions are important determinants of health status and morbidity patterns (CSDH, 2008). Thirdly, majority of the medical studies estimate the burden in a limited way. Most of the medical professionals estimate the burden from mortality data and that too in the form of Disability Adjusted Life Years (DALY) or Quality Adjusted Life Years (QALY) or Health Adjusted Life Years (HALY). Such information has limited policy implications due to inadequate coverage of various direct and indirect costs. In a country like India, allocation of limited resources need to be prioritised efficiently and equitably. This requires information on disease wise direct and indirect economic burden for different geographical areas and socio economic groups. Given the rapid changing nature of various diseases, their area and group specifications; reliable, update and area specific information on various dimensions of morbidity and mortality is of crucial importance.

Unlike the developed countries, in India health and morbidity has received scant attention of social scientists. With only exception of the Report of National Commission on Macroeconomics and Health, there is hardly any comprehensive analysis of health available in India. Even in this Report information on health status is mainly generated for the country as a whole. The public spending in India, the Commission noted, is driven more by precedent rather than evidence or need. This is mainly because there is hardly any comprehensive information available on how much is being spent by whom and on what? Consequently, NCMH pointed out that health strategies in India are rarely based on cost effectiveness of their interventions. As a matter of fact the Commission has emphasised the need of community
based research to generate more credible estimates of disease burden (NCMH, 2005, p. 125).

Whatever, scanty state level empirical literature is available is confined only to a few states; namely Kerala, Tamil Nadu, Gujarat and West Bengal. Some of these are area and disease specific whereas the others examine only the extent and pattern of morbidity. Only a few studies have analysed the impact of socio-economic determinants of ill-health at the household level. We have not come across any study that has estimated the burden of ill health at or below the state level. Given the wide diversities in weather and climatic conditions, social and economic structure, accessibilities to health and other social services and political agenda of political parties, the available state specific evidence lacks wider generalisation for other diverse regions/states. Therefore, the state specific analysis of morbidity, based on micro household/community level information, hardly requires any justification. This is specifically relevant for Punjab as we could not locate any comprehensive analysis of health and illness for the state. The present study is a modest attempt to fill gap in literature. As it holds true for any part of the world, the level of living, social and economic structure, access to basic amenities, knowledge, health related attitude and practices differ considerably across rural and urban areas in Punjab. Therefore, health needs to be studied separately for rural and urban areas. Thus in this background, the present study is focussed on rural Punjab.

Besides filling the gap in literature, it is expected that the information generated by the study will be of special significance for the planners and policy makers in Punjab. This is mainly because unlike majority of the other Indian states, people in rural Punjab enjoy very high level of prosperity and have access to comparatively well developed social and economic rural infrastructure. Furthermore, development in Punjab has many exceptions and paradoxes. Some of these are: elimination of gender gap in primary education but wide spread sex selective abortions and female foeticide, high income and large middle class but poor quality of public services, prosperous private
sector but impoverished government. Yet another paradox is that the country took-off on higher growth trajectory but the state, which once boasted about very healthy economy, is now dwindling on every aspect. A recent study of the state conducted by the World Bank found that human development indicators are either beginning to languish or are even deteriorating (WB, 2004, p.6). Therefore, health and well-being of people in Punjab is quite likely to be diverse from the information on morbidity generated by empirical studies for other Indian states. Utility of such information is almost indispensable for policy makers in designing most appropriate, viable, equitable and cost effective health interventions. Furthermore, findings of the study are likely to be equally relevant for other Indian states placed in similar circumstances or are following the pattern of rural development traversed by Punjab.

Therefore, the present study is undertaken to examine the dimensions, determinants and burden of morbidity in rural Punjab.

Objectives of the study

The main objectives of the study are:

(1) To examine the nature of illness across various geographical regions and socio-economic groups of the population in rural Punjab;

(2) To identify the socio-economic determinants of morbidity among rural households; and

(3) To estimate the economic burden of ill-health in rural Punjab.

Hypotheses:

Based on the theory and empirical literature, the main hypotheses to be explored in the present study are three pronged, firstly based on dimensions of morbidity and secondly on its determinants, and thirdly its burden which are as follows:
Dimensions of morbidity

1. Nature and incidence of morbidity is expected to vary considerably across regions within the state; and

2. People from economically and socially deprived sections are expected to suffer more from acute diseases, whereas the others from chronic ailments.

Determinants of morbidity

1. People living in dilapidated dwellings and having inadequate access to safe drinking water, sanitation, drainage, health services etc. are expected to be exposed to higher risk of morbidity.

2. Females are likely to be at a higher risk of ailments due to well known gender biases.

3. Incidence of morbidity is likely to exhibit ‘J’ shaped relationship with age. While the incidence of acute diseases is expected to have reflected ‘J’ relationship whereas that of chronic diseases is likely to exhibit ‘J’ shaped relationship with age of a person.

4. Incidence of morbidity and education are expected to be inversely related.

5. Risk of illness in general and from infectious diseases in particular, is likely to be more among people living in villages having overall higher prevalence of ailments.

6. Incidence of morbidity is expected to exhibit two way relationship with level of economic development. While the risk of acute morbidity is expected to decline with rising level of development, the risk of chronic diseases is likely to be other way around.
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Burden of morbidity

It is expected that high income group people spend more on medical treatment whereas the burden of illness is likely to be more among low income groups.

Data and methodology

Data

Morbidity is a multidimensional concept. Extent, duration, severity and depth are its four quasi-independent dimensions. Two approaches followed to measure these dimensions are: ‘self-perceived morbidity’ and ‘observed morbidity’. The self-perceived approach is based on perceptions of the individuals about their health or health status of their family members. Most of the data on morbidity generated through large scale sample surveys are based on this approach.

In observed approach, morbidity status is captured through examination by physicians, physiological and patho-physiological factors, functional tests and clinical diagnosis. This approach generates more authenticated and detailed information about health status of individuals. However, information generated through this approach is limited and lacks generalisation for the whole population. This is mainly because that most of such data is generated in the public hospitals/clinics or hospitals operated by the corporate sector. Data is recorded only for the patients visiting these institutions. In developing countries like India, lacking social health insurance, records of the patients visited, their health status and prescription are rarely maintained by the private health providers due to various reasons including tax evasions and fear of medical based litigations. The problem is more acute in rural areas where the unqualified quacks/RMPs predominate health care. Moreover, many sick from downtrodden segments never visit any public/private facilities due to various reasons like non-serious nature of ailments, non-availability of facilities, lack of finance and unsatisfactory
services. Consequently, a significant proportion of sick population is excluded from the preview of recorded/observed morbidity.

Alternatively, random sampling approach can be followed, whereby selected people are examined/diagnosed thoroughly to check their health status. Such an approach is rarely followed in developing countries due to its time and resource costs. In some empirical studies researchers indirectly examined morbidity through mortality data which is compulsorily recorded in almost all the countries of the world. In developing countries where majority of the people breathe their last at home, cause of death is rarely known or has no authenticity even if recorded. Unlike in developed countries, the mortality statistics is not the appropriate data source to study morbidity in developing countries in general and rural areas in particular. Therefore, for individual researcher the only option left is to rely on authenticated morbidity information collected through large scale sample surveys by some credible institutions. This is mainly so because conducting a large scale sample surveys is beyond the capacity of individual researchers.

The present study is, therefore, based on the household level data collected by the National Sample Survey Organisation (NSSO) during its 60th Round Morbidity Survey undertaken during January-June 2004. During this round, detailed information was collected for 4577 persons from a random sample of 816 rural households which were again randomly selected from 82 villages of Punjab. The respondents were asked about health status of each and every member in the family. Data regarding three types of morbidity information was recorded. Respondents were asked whether or not a particular member suffered from any kind of ailment during the last 15 days, a day before the date of survey and hospitalised during last 365 days from the date of inquiry. In case any member was found suffering during last 15 days detailed information was recorded on nature, status, total duration of ailment, type of treatment received, item-wise detailed information on medical, diagnostic, non-medical expenses incurred on medical treatment alongwith sources of finance for meeting the expenses incurred on healthcare. Similarly
information was recorded separately for in-patient hospitalisation treatment, based on 365 days recall period. Besides detailed information on morbidity, additional information on various household characteristics like occupation, caste, religion, land ownership, type of dwelling, water supply and sanitation amenities was also collected. Information was also collected regarding age, gender, education and employment status of all family members of the households. The Compact Disc (CD) containing this unit level data complied by the NSSO was purchased which formed the basis of the present study.

It is well accepted that health status of individuals is significantly influenced by the circumstances in which people are born, grow, live, work and age (CSDH, 2008). These circumstantial aspects must be taken care of in studying the various dimensions of morbidity and its socio-economic determinants. Therefore, we have substantiated the household level data with additional information on circumstantial indicators. These are: accessibility to health services, level of development, geographical location, extent of poverty and disease in the sampled villages. Information on these indicators has been compiled from various secondary sources like Census reports, village directories and Statistical Abstract of Punjab.

**Methodology**

As mentioned earlier, morbidity is generally measured by its extent, duration, severity and co-morbidity. The data was available on all these aspects. The extent of morbidity was measured through its prevalence rate on 15 days recall period. The duration of morbidity was captured by grouping diseases in acute and chronic categories. The diseases with duration less than 30 days were categorised as ‘acute’ whereas others as ‘chronic’. The hospitalisation of patients that capture severity of ailments was examined separately. These three dimensions of morbidity were studied for different regions, social and economic groups of population within the state. Disease-wise pattern of prevalence and hospitalisation was also examined across income groups of population. Dynamics of changing disease patterns is
analysed by comparing the data for 2004 with similar data collected during morbidity survey undertaken by the National Sample Survey Organisation (NSSO) during 1973-74 and 1995-96. Decaying and emerging diseases were also identified on the basis of temporal comparison.

We estimated the logistic regression model on the unit level data. Impact of various demographic, economic, amenities and environmental related variables are examined on the risk of a person being ill. The model is estimated for all sampled persons taken together. To examine robustness of identified determinants, the logistic regressions are estimated for children, adults and aged persons separately and also for acute and chronic ailments.

In order to assess the burden of morbidity on rural households, the societal perspective is followed along with human capital cost-of-illness approach. Direct and indirect economic burden is estimated separately. Direct economic burden which constitutes all fees and charges paid to hospital staff, physicians, specialists, for diagnostic tests and pharmaceuticals. It also includes the expenditure on transportation, boarding and lodging and other charges incurred while availing medical treatment/services. The indirect economic burden constitutes the loss of productivity/earnings of patients incapacitated by ailment or of the caregivers/attendants. The other component of indirect economic burden which is measured as the present value of production/earnings lost due to pre-mature mortality. Health care seeking behaviour of the ailing persons in Punjab is analysed by their choice of public/private health care providers. How people cope with economic burden of morbidity is examined by studying the source wise financing of medical expenses incurred on treatment of ill-health.

**Organisation of the thesis**

The present study has been organised in the following Chapters.

Chapter 1: **Introduction**
Chapter 2: **Review of literature**: Review of selected national and international studies on nature and dimension, social determinants of morbidity and economic burden of various ailments along with health seeking behaviour and coping strategy of people and recommendations thereof are presented in this chapter.

Chapter 3: **Nature and dimension of morbidity**: Nature, extent and socio-economic dimensions of prevalence of morbidity is presented in this chapter. Overtime changes in morbidity and decaying and emerging diseases are also identified in this chapter.

Chapter 4: **Determinants of morbidity**: Impact of social, economic and environmental determinants of morbidity are identified in this chapter by employing multivariate logistic regression model.

Chapter 5: **Economic burden of ill-health**: Disease-wise direct and indirect economic burden of morbidity, health seeking behaviour of sick in Punjab, coping strategy with ailments and reasons for unmet medical need are studied in this chapter.

Chapter 6: **Summary and conclusions**: Main findings of the study and some policy suggestions emerging from the empirical analysis are given in this chapter.