

CHAPTER 1

INTRODUCTION

'When a country has more soldiers than teachers, how can one hope for the elimination of poverty and injustice? Eliminating poverty is one of the main responsibilities of every government. Otherwise, one cannot hope for the recognition of human rights. If, for example, administrative corruption in a government causes poverty, then that can be classified as a crime against humanity.'

Shirin Ebadi¹

1.1 Introduction

The relationship between productivity and health of the society has been recognized since Adam Smith published *The Wealth of Nations* in 1776. Most of the studies provide reasonably good evidence that unemployment itself is related to health and has an impact on health outcomes like increasing mortality rates, causing physical and mental ill health and health services. However, it is not clear as to what is the cause and what is the effect? Is it the case that those with relatively poor health face a greater risk of becoming unemployed? What are the factors that cause deterioration in health? What is the role of health in the growth and development of a country and also elimination of poverty?

The greatest challenge of the twenty-first century is to provide every human being with a long and healthy life, free from poverty and full of opportunities in his community. The Millennium Development Goals (MDGs)- signed by 189 countries in 2000 - set clear targets for reducing poverty and other causes of human deprivation and for promoting sustainable development. But how far are we from meeting these goals? How is the progress towards achieving good health? And what are the resources needed to help a country improve health status and development in both short and long terms?

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According to the World Development Report (2001), poor people in most of the countries have the worst health outcomes and income due to ill health. According to the studies made between 1960 and 1990, there are some mechanisms responsible for this effect. The needs are for improvement in productivity through healthy workforce, greater incentives to invest in human and physical capital and increase in saving.

What is Health? The most famous modern definition of health was created by the International Health Conference (Official Records of the World Health Organization, 1948): *"Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."*

Health has been known as a human right and social goal in the world. It means health is necessary for the improvement of human basic needs and quality of life. And it must be accessible to all the people.

1.2 Why is the Study of Health and Economic Growth Important?

Health is considered as a significant form of human development. If people are living free from the problems of malnutrition and diseases (mental and physical), it adds to their economic well-being and, therefore, health systems for a nation are considered important. There are many socio-economic determinants that affect the health outcomes like female literacy, income levels, male child preference, antenatal care, public health expenditure and so on. With respect to these factors affecting the health status, there is a vast literature on health economics that talks about the association of health with economic growth.

Production function needs human capital as well as physical capital constitute inputs. However, while schooling is often used as an input into human capital, health is not used in production function. The contribution of health to economic growth has been neglected compared with the importance given to education.

Education in the form of human capital has been known for increasing labour quality and economic growth [Barro, 1991, Kyriacou, 1991, Benhabib and Spiegel, 1994, Mankiw et al., 1992]. In most empirical studies, education has been considered the only relevant factor. Nevertheless, the health factor can be incorporated into growth models as

human capital and since it allows for enhanced productivity generated by improved labour capacity. A country would not be able to maintain a state of continuous growth without a labour force with the minimum levels of education and health.

There is no doubt that developed economies have reached high health levels. By analysing data for long time periods, studies have shown important gains ranging from lower levels to higher levels of health status for developed economies. They show that good health raises both output and economic growth rates. Wheeler (1980) finds that improved health significantly increases labour productivity and income. Behrman (1990) and Fogel (1994) mention that good health raises living standards directly and promotes higher income. Currais and Rivera (1999) analyse the positive role of health attainment in human capital accumulation. Bloom et al. (2001) included health in an aggregate production function to test for the existence of an effect on labour productivity. Therefore, their main conclusion is that health has a positive and statistically significant effect on economic growth. So, healthier nations would be wealthier nations. According to Malik Garima (2006), more attention has been given to education levels than to health status.

Despite evidence of the positive effect of health on income growth, some authors argue that health does not play an important role in productivity. Instead, they conclude that health is not an important variable when it comes to explaining economic growth. Cullis and West (1979) believe that health expenditure should not be considered as a form of investment in developed economies.

Health systems in industrialized countries are different in many levels. Most of the OECD (Organization for Economic Co-operation and Development) countries obtained near full coverage (95 per cent and above) of the population through public sources in 2010. Economics has a central role in improving condition of the health determinants. Medical care is a service industry which should provide services by highly skilled and good professionals.

People with higher incomes have a greater command over goods, services, better nutrition, better health care and enjoy better health and so they are healthier. Wealth undoubtedly leads to health, but health should also be seen as a form of human capital

and, therefore, an input into the growth process, as well as an output. Countries with educated and healthy population are in a better position and well-being, especially in a favourable policy environment. Improvement in health status and education of the population lead to a higher output (Barro and Sala-i- Martin 2004).

Economic Structure of Health

Economic growth is measured by increases in gross domestic product (GDP) and GDP per capita. They are commonly used as indicators of a nation's economic performance, and the level of GDP per capita is a key component of the Human Development Index of the United Nations Development Programme, a popular indicator of national well-being. The benefits of economic growth are vast.

There are some aspects of the economic structure of countries which are important in health. First, the degree of poverty has a pervasive effect on health systems. Poverty of a country affects its ability to finance adequate access to health care. Countries with experience of rise in growth rates of real GDP per capita also experience impressive decline in poverty (Barro and Sala-i-Martin 2004). The second aspect is income inequality. With improvement in socio-economic factors in some developing countries, equality in income does not develop and it remains a big issue which increases health inequality too. The third aspect is labour force. Developing countries, especially the poorest, are characterized by a small share of working age adults in the formal sector, and their large share in the informal sector. The fourth is an under-developed private sector. This has a number of results. For example, it limits the scope for low prices in market arrangements. A small private sector is unable to serve as a source of financial and good management for the public sector.

Low- and Middle- income countries (LMICs) comprise all countries in the world outside the sixty high-income countries. They are 149 in number and account for 84 per cent of the world's population, 90 per cent of the world's disease burden (Lopez et al. 2006), and 24 per cent of the world's GDP, but only 13 per cent of global health expenditure.

Revenue can be classified by different sources like government taxes, social security payments, out-of-pocket payments, external grants and loans, whether these are public or private, and whatever be their level. In a country like India, 83 per cent of total expenditure on health is from private sources, and of this 94 per cent is from out-of-pocket payments (WHO Indicators, 2008).

External resources feature as an important element of total health expenditure in low-income countries, making up an average of 23 per cent. According to the report of WHO 2001, per capita public expenditure is still extremely low- \$12 in low-income countries on an average, and \$23 for per capita total health expenditure. Adjusting these values for purchasing parity does increase them, but even so total public health expenditure is far below the amount needed to finance a basic package of health services (WHO 2001).

The Political Economy of Health Care

Government is deeply involved in health and health care. Its role is significant in the health sector. It redistributes the health resources for equity reasons.

Government invests in health and health care infrastructure directly or indirectly. This includes investments in public health such as the construction of water and sewage infrastructure; investments in health care facilities, such as hospitals and clinics; investments in the education of health care personnel; investment in health care research and investment in information technology and communication infrastructure. Government makes indirect investments through conferring patents in the pharmaceutical and devices sectors (Cutler and Miller 2005).

In the Organization for economic co-operation and development (OECD) countries, government funds about 73 per cent of total health expenditure, and about two-thirds of expenditure on infrastructure. Across the OECD, about 15 per cent of all tax revenue is devoted to health care, and this proportion is steadily increasing.

1.3 Policy and Health System in India

The first National Health Policy of 1983 (updated in 2002) aimed to achieve the goal of 'Health for All' by 2000 through the provision of comprehensive primary healthcare services. It stressed the creation of infrastructure for primary healthcare; close co-ordination with health-related services and activities (like nutrition, drinking water supply and sanitation); the provision of essential drugs and vaccines; qualitative improvement in health and family planning services; provision of adequate training; and medical research aimed at the common health problems of the people. The main objective of National Health Policy is to achieve an acceptable standard of good health among the general population of the country and has set goals to be achieved by the year 2015.

The National Rural Health Mission (NRHM) was launched in April 2005 by the Government of India. Its goal was to provide effective healthcare to rural people. Rural India contains over 68 per cent of India's total population with half of it living below poverty line, struggling for better and easy access to health care and services.

National Level - The organization at the national level consists of the Union Ministry of Health and Family Welfare.

State Level - The organization at state level is under the State Department of Health and Family Welfare in each state headed by a minister and with a secretariat under the charge of Secretary/Commissioner (Health and Family Welfare) belonging to the cadre of Indian Administrative Service (IAS).

Both urban and rural Indian households tend to use private medical sector more frequently than public sector, as reflected in surveys.

Public and Private Health Sectors

According to the National Family Health Survey-3, for many households in both urban areas (70 per cent) and rural areas (63 per cent), private medical sector is the primary source of health care. A significant reason why most households prefer to choose private health sector is the poor quality and health care facilities in the public sector. Other major reasons can be distance of the public sector facility and long waiting time.

India has one of the largest private health sectors in the world. Over 80 per cent of healthcare cost is spent out-of-pocket. Public health services are inadequate. Public curative and hospital services are mostly in cities where only 25 per cent people have access to these facilities. Rural areas have access to some services like family planning and immunization which are also not adequate.

‘Thus India has a large, unregulated, poor quality, expensive and dominant private health sector, and an inadequately resourced, selectively focused and declining public health sector despite its poverty, with the former having curative monopoly and the latter carrying the burden of preventive services’ (Duggal and Gangolli, 2005).

Health Information

Information technology can be used as a tool to describe comprehensive management of health information across computerized systems. The promising tool called Health Information Technology (HIT) can provide new ways to health providers and their patients to access and use health information. To summarize, HIT allows health care providers to collect, store, retrieve, and transfer information electronically.

Census - The Census in India is a kind of activity which pools tremendous resources, and huge data pertaining to many facets of population are generated.

Civil Registration System (CRS) - It is a continuous and permanent systematic activity of enlisting vital events countrywide. This activity is given legal status through the Birth and Death Registration Act, 1969.

Sample Registration System (SRS) - In 1964-65, the Government of India introduced SRS for improving reliability of data pertaining to vital events and also to have urban and rural break-up.

National Sample Surveys (NSS) - National Sample Survey Organization regularly conducts nation-wide surveys, collecting information regarding social, economic, demographic, industrial and agricultural conditions.

Service Statistics - Information generated from Sub-Centre level and above is also fed into the health information system on specifically designed reporting formats submitted monthly. The health and family welfare information is compiled at district level and submitted to state level from where it goes to central level.

1.4 Economic Development in India

The Indian economy from 1947 to 1991 was a mixed economy combining features of capitalism and socialism. In 1991, India adopted liberal and free-market principles and liberalized its economy to international trade under the guidance of former finance minister Dr. Manmohan Singh from 1991 to 1996. Following these reforms with a strong focus on developing national infrastructure, the country's economic growth progressed at a rapid pace with relatively large increases in per capita income.

According to International Monetary Fund (outlook database, April 2013) India has the tenth largest economy in the world by nominal GDP and the third largest by purchasing power parity (PPP). India is the 19th largest exporter and the 10th largest importer in the world. India's GDP grew by 9.3 per cent in 2010–11. Besides this, India suffered a very high fiscal deficit of US\$88 billion (4.8 per cent of GDP) in the year 2012–13. The Indian Government aimed to cut the fiscal deficit to US\$70 billion or 3.7 per cent of GDP by 2013–14.

In 1947, in India life expectancy at birth was 32 years; an annual population growth rate of 1.25 per cent; an investment rate of around 9 per cent of its GDP; and an average annual growth rate of GDP around 3 per cent. In 2005-06, the literacy rate was around 60 per cent; the investment rate grew to around 30 per cent of its GDP; life expectancy at birth increased to 63 years; the annual population growth rate was 1.05 per cent; and the annual growth rate of GDP grew around 8.4 per cent.

From the late 1970s, the rate of growth shows an upward trend, averaging around 6.3 per cent for the period 1980 – 2010.

Report of World Bank on India shows that GDP was \$1.842 trillion, GDP growth 3.2 per cent, inflation 9.3 per cent and population was 1.237 billion in 2012.

The Indian economy witnessed near stagnation in real GDP growth till the late 1970s. However, a review of Indian economy suggests a continuing increase in real GDP growth over each decade since Independence. (Reserve Bank of India)

Population: Indian population has more than tripled from 1950s to 2012 (Census of India data), and GDP has increased more than eightfold during this period. There has been an increase of 181.96 million persons in absolute number of population during 2001-11. It grew by 17.7 per cent during this period against 21.5 in the previous decade.

According to the Census of 2011, the population of India is 1,210,193,422 with 623,724,248 males and 586,469,174 females. The density of population is 382 persons/sq.km. In regards to sex ratio in 2013, there were 940 females on an average per 1,000 males and the child sex ratio was 914 females per 1,000 males.

More than 50 per cent of India's current population is below the age of 25 years. About 72.2 per cent of the population lives in some 638,000 villages and 27.8 per cent in about 5480 cities. The birth rate in 2009 (child births per 1,000 people per year) was 22.22 births/1,000 population, while death rate (deaths per 1,000 persons per year) was 6.4 deaths/1,000 population. Every year, India adds more people than any other nation to the world population.

Some of the reasons for India's rapidly growing population are poverty, illiteracy, high fertility, rapid decline in mortality rates and immigration from Bangladesh and Nepal. The five highest populated states of India are Uttar Pradesh, Maharashtra, Bihar, West Bengal and Andhra Pradesh and the most literate states are Kerala (94 per cent), Lakshadweep (91.85 per cent), Mizoram (91.33 per cent), Goa (88.70 per cent) and Tripura (87.22 per cent). The average literacy rate in the country in 2011 was 74.04 per cent.

Poverty: According the report of World Bank (2013) between 2005 and 2012, India lifted 137 million people out of poverty and reduced the poverty rate to 22 per cent. It notes that a much larger fraction of the decline in poverty is taking place in low-income states, and the poorest 40 per cent are increasingly sharing the benefits of growth. On the

other hand, inequality has continued to increase – the Gini coefficient rose from 30.9 in 2005 to 32.3 in 2012 – and growth of the bottom 40 per cent has not yet fully caught up with the average.

Despite the improvement in the last decades, India and South Asia in general are among the poorest regions in the world. Indeed, the population below the poverty line shows that despite the decline in poverty ratio from 55 per cent in 1973 to 23 per cent in 2010, this country still accounts for a large absolute number of poor people.

Since the early 1950s, successive governments have implemented schemes to reduce poverty under central planning and they have also met with partial success. In 2011, the Mahatma Gandhi National Rural Employment Guarantee Programme was widely criticized as it is no more effective than other poverty reduction programmes.

While the Indian economy is booming, employment is not growing as fast as the working population, nor are wages rising as rapidly as per capita income.

Nutrition: Good nutrition is one of the important factors for healthy living. Malnutrition limits development and the capacity to learn. It also means loss of life. According the UNICEF report², malnutrition is more common in India than in Sub-Saharan Africa. One in every three malnourished children in the world lives in India and around 47 per cent of all children below the age of three are underweight and at least 16 per cent of them are wasted. The extent of malnutrition varies across states, with Madhya Pradesh recording the highest rate (55 per cent) and Kerala among the lowest (27 per cent). Majority of malnourished children live in rural areas. Girls are more at risk of malnutrition than boys because of their lower social status.

Malnutrition is also seen among Indian women in that around one-third of all adult women are underweight. Inadequate care of women and girls, especially during pregnancy, results in low birth weight babies and making them vulnerable to disease. According to Indian traditions, women are the last to eat even during pregnancy and lactation period. This is one of the main causes of malnutrition among them and children.

²http://www.unicef.org/india/children_2356.htm

Malnutrition in children does not mean food intake alone. Associated with it are other problems like availability of health services, quality of care for the child and pregnant mother as well as hygienic practices. Indian Government has launched several programmes to solve the problem of child malnourishment. However, it has largely failed in it. Public distribution system targets subsidized food to the poor, but it was not quite successful because of inefficiency and corruption. Although India's economy was growing between 2001 and 2006, the child-malnutrition rate dropped only 1 per cent, lagging behind countries having a similar growth rate.

Income and Consumption

India's per capita gross national income has grown since 2002. It has tripled from Rs. 19,040 in 2002–03 to Rs. 53,331 in 2010–11, i.e., average growth of 13.7 per cent during eight years.

As of 2010, according to World Bank statistics, about 400 million people in India, as compared with 1.29 billion people worldwide, live on less than \$1.25 (PPP) per day. These consumption levels are on an individual and not household basis.

Education

India has made notable progress in terms of primary education attendance rate and expansion of literacy to approximately three-fourths of the population. Her literacy rate has grown from 52.2 per cent in 1991 to 74.04 per cent in 2011. However, the literacy rate of 74 per cent is still lower than the worldwide average of 84 per cent and the country suffers from a high dropout rate. Further, there exist great disparities in literacy rates and educational opportunities between males and females, urban and rural areas, and among different social groups.

Economic Disparities

Six low-income states viz., Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Orissa and Uttar Pradesh, are inhabited by more than one-third of India's population.

Severe disparities exist among states in terms of income, literacy rates, life expectancy and living conditions.

A problem facing India's economy is the sharp variation among her different states in terms of poverty, availability of infrastructure and socio-economic development.

India has witnessed an increase in socio-economic inequality since 1990. There are many countries which have grown at rates very similar to India's but which have managed to register marked decline in socio-economic inequalities. India has much in common with her neighbours in terms of geography, climate, culture and social conditions. Yet, she has emerged as the worst performer among the South Asian countries.

Another important issue is that the process of growth and development in India is biased against the poor, marginalized and underprivileged. If economic growth is to lead to substantial improvements in the living standards (measured by indicators of well-being like life expectancy, literacy, infant mortality, etc.,) of the vast majority of the world's population, a radically different socio-economic paradigm must be put in place of the currently dominant neoliberal one.

Annual Growth Rate of GDP in India

The Gross Domestic Product (GDP) in India expanded 4.40 per cent in the second quarter of 2013 over the same quarter of the previous year (Ministry of Statistics and Programme Implementation). From 1951 until 2013, India's GDP annual growth rate averaged 5.8 per cent reaching an all-time high of 10.2 per cent in December of 1988 and a record low of -5.2 per cent in December of 1979. In India, the annual growth rate in GDP at factor cost measures the change in the value of the goods and services produced without counting the government's involvement. The GDP excludes indirect taxes (VAT) paid to the government and includes the original value of products without accounting for government subsidies.³

³<http://www.tradingeconomics.com/india/gdp-growth-annual>

1.5 Empirical Study of Health and Income in India

The present condition of health sector, economic growth in the last few decades, and also variations in health outcome across the states and social groups in India are good enough reasons for the present study to be undertaken. It tries to understand how health is promoted, what is the relationship between health and economic growth, how far we need to provide access to basic and reproductive health services for all, and to what extent are the people able to achieve their rights in health in India? The specific objectives of this research attempt are as follows:

- To study the health status in terms of Infant Mortality Rate (IMR), Child Immunization, Under Five Mortality Rate (UFMR) and Total Fertility Rate (TFR);
- To study the correlation between per capita GDP, health indicators and female literacy rate;
- To study the regional inequality (across states) in health and to understand whether the regional differences have decreased over time or whether the gap between the richer and poorer states is increasing;
- To investigate the association between health status and economic growth by using the time series data;
- To understanding the short and long-run relationship between growth and health; and finally,
- To find the effect of economic growth on health.

Hypothesis

- Changes in GDP bring about change in life expectancy and infant mortality rate.

- There is a negative relationship (effect) between per capita income and IMR in both long and short run.
- There is a negative relationship (effect) between per capita income and under five mortality rate (UFMR) in long and short run.
- Per capita GDP has a positive effect on promoting health indicators (IMR, Immunization and UFMR) over time.

Structure of the Study

This study has been conducted in eight chapters. The first chapter introduces the problem. In chapter two the review of literature has been attempted. This includes the concept of health and its determinants, role of health, as well as significance of health in economic growth and development. Then we review the theoretical and empirical studies on health and economic growth. In chapter three, the methodology adopted for the analysis of data is discussed.

In chapter four, the health status in India and its states in terms of infant mortality rate, total fertility rate, under five mortality rate, immunization of children (full and no immunization) and health expenditure are presented. A comparison has been made of the IMR, per capita GDP and health expenditure of India with some developed and developing countries. Then, the association between per capita income and health indicators through IMR, UFMR, TFR and Child Immunization is examined. We also show the association between female literacy rate and health indicators in 2010-11 across the states. Further, to understand the variations in health status due to changes in per capita income and literacy rate over time, the health indicators of IMR, TFR, full immunization and UFMR by literacy rate and per capita income quartiles in four periods (1992-93, 1998-99, 2005-06, and 2010-2011) are examined.

Health equality is a significant goal for the society, as there are huge inequalities in health status in India. In chapter five, we review this inequality in different states as measured by Gini coefficient and concentration index, conditional and unconditional convergence models.

In chapter six, the association between health status and economic growth has been investigated by using time series data. In particular, the analysis is done to understand the short run and long run relationship between economic growth and health. Additionally, this chapter explains the causality of two indicators under the study. Time series data were obtained from multiple sources for the period of 1970-2010.

The chapter seven is focused on the impact of economic growth on health and their causality. We examine whether growth is a necessary as well as sufficient condition to improve health or do we need to look at the broader idea of growth, that is, development factors like female literacy to improve the quality of life. For this purpose, panel data for four periods, namely, 1992-93, 1998-99, 2005-2006 and 2010-2011 collected from multiple sources are used. The results of the study and policy implications are presented in chapter eight.