Healthcare Expenditure in Mizoram
An Economic Appraisal

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Abstract

The relationship between health expenditure and income has always been a focus of research for it helps us understand the key determinants of healthcare expenditure and provides linkages between the income factor and demand side of health. The main objective of this paper is to examine the relationship between healthcare expenditure and income. This relationship is examined using primary data collected by the researchers from Bawngkawn locality in Aizawl district of Mizoram. t-test and linear regression estimators are used to examine this relationship. The study found that there is a positive relationship between healthcare expenditure and the income of a family. When income increased by 1 rupee, expenditure on health is also increased by 5 paise. The regression result shows that with the increase in the educational qualification of the respondent, the expenditure on health increased by Rs. 297.54. The t-test shows that the difference in health expenditure between high and low income groups is highly significant.

Introduction

Health is an important aspect of human resource development. Good health care facilities and services are essential for creating healthy citizens and society that can effectively contribute to social and economic development. Economic development of an economy depends on the quality of its people. By quality of people we mean the several health of the people living in a country. Undoubtedly, better health of people, in turn will lead to better sustainable development.

Definition of Health

There are many definitions of health, although there is no one accepted definition. To the layman, health implies a sound body in a sound mind. The World Health Organization

defines health as “a state of complete physical, mental and social well being, and not merely the absence of disease or infirmity”.

Healthcare

Healthcare implies the provision of conditions for normal, physical and mental development and functioning of human being individually and the group. It provides a wide spectrum of services; the delivery of primary healthcare foundation of rural healthcare system and forms an integral part of the national healthcare system. Primary healthcare is accepted as one of the main instruments of action in the delivery of health in rural areas.

Healthcare is one of India’s largest sectors, in terms of revenue and employment and the sector is expanding rapidly. During the 1990s, Indian healthcare sector grew at a compound annual rate of 16 %. Today the total value of the sector is more than $ 34 billion. This translates to $ 34 per capita, or roughly 6 % of GDP. The private sector accounts for more than 80 % of total healthcare spending in India. Unless there is a decline in the combined federal and state government deficit, which currently stands at roughly 9 %, the opportunity for significantly higher public health spending will be limited.

Review of Earlier Studies

Ramesh Bhatt and Nishant Jain (2006) in their study they found that per capita private health expenditure has grown substantially faster than real incomes. For each 1% increase in real per capita income (PCI), the real per capita expenditure on health has gone up by 1.95%. During the last decade PHE (per capita health expenditure) has grown by 18% per annum in nominal terms and about 11% in real terms.

Ravi Duggal(2006), in his study he found that the central government’s own expenditure is increasing rapidly, whereas its grants to the state government’s health spending is stagnating and, as a consequence, the overall public health expenditure remains below 1% of GDP.

Indrani Gupta and Arindam Dutta(2003), in their study they found that expenditure is a positive function of income, with richer households spending more on both

acute and chronic illnesses, than poorer households. Also, for both acute and chronic illnesses, often expenditures in the urban areas seem to be lower than in the rural areas for the same deciles. The expenditure pattern thus indicates that health imposes a significant burden on individuals and households both in rural and urban areas.

Objectives and Methodology

The main objective of this study is to examine the relationship between healthcare expenditure and income of Mizoram. For this purpose, primary data had been collected from Bawngkawn locality in Aizawl district of Mizoram. The primary data is based on information given by 100 respondents. The sample respondents were selected through stratified random sampling technique from the study area, through questionnaire method using specially structured schedule. The respondents were divided into two groups based on their family monthly income – those families whose monthly income is below 15,000 and those higher than 15,000. Based on this division, the researchers examined whether the expenditure of a family on healthcare is influenced by their income level, educational level of the head of the household, number of members in the family and medical institutional choice of a family. For this, t-test and linear regression estimators were used.

Patterns of Health Expenditure in India

In India, private households' contribution to healthcare is 75%. Most of these are out-of-pocket costs. State governments' contribute 15.2, the central government 5.2, and third-party insurance and employers put in 3.3% of the total. Local governments' and foreign donors' contribute 1.3% (World Bank 1995). Out of this amount, 58.7% is spent on primary healthcare (curative, preventive and promotive); 38.8% on secondary and tertiary inpatient care and the rest on non-service cost.

In Table 1, we see that both the per capita spending and the share of households in healthcare expenditure varied widely across states. Per capita spending in the state with the highest rate(Goa) is nearly 7 times that of per capita spending in the state with the lowest per capita spending (Meghalaya). Interestingly, the share of household spending is the lowest in Meghalaya, but was among the highest in Bihar which has relatively low per capita spending.

There are many states where households undertake more than 80% of all health spending, indicating an exceptionally high burden upon them.

Table 1: Health Expenditure of Indian states (2008-09)

STATE	Per capita Health Exp. (Rs.)	Per cent spent by		
		Household	Public	Other
Andhra Pradesh	410	73.4	19.4	7.2
Arunachal Pradesh	771	86.5	13.5	0
Assam	471	80.8	17.8	1.4
Bihar	173	90.2	8.3	1.5
Chhatisgarh	378	NA	NA	NA
Delhi	798	56.4	40.5	3.1
Goa	1149	79.2	17.5	3.3
Gujarat	270	77.5	15.8	6.7
Haryana	280	85	10.6	4.4
Himachal Pradesh	884	86	12.4	1.6
Jammu & Kashmir	845	77.3	20.7	2
Jharkhand	328	NA	NA	NA
Karnataka	419	70.4	23.2	6.4
Kerala	454	86.3	10.8	2.9
Madhya Pradesh	235	83.4	13.6	3
Maharashtra	278	73.3	22.1	4.6
Manipur	695	81.2	17.2	1.6
Meghalaya	690	36.5	58.4	5.2
Mizoram	1611	39.4	60.6	0
Nagaland	794	91.7	7.6	0.7
Orissa	263	79.1	18	2.9
Punjab	360	76.1	18	5.9
Rajasthan	287	70	24.5	5.5
Sikkim	1446	56.9	43.1	0
Tamil Nadu	410	60.7	26.6	12.7
Tripura	740	69	27.4	3.6
Uttar Pradesh	293	84.3	13	2.7
Uttarakhand	630	NA	NA	NA
West Bengal	1188	78.4	17.3	4.3
Union Territories	938	85.1	8.8	6.1
All India	1377	73.5	22	4.5

Source: Report of National Commission on Macroeconomics and Health , Government of India

Profile of Health in Mizoram

Mizoram, which is in the north-eastern part of India has a total population of 10,91,014. The decadal growth rate is 22.78%, which, compared to all India level is quite high. The population density is 52 persons/sq. km. The sex ratio is 975 females per 1000 males. Of the total population, 91.58% are literates.

The life expectancy of Mizos is 64 years. Infant and Child mortality rates have been on the decline compared to the last 3-4 decades. Infant mortality rate is 23 per thousand live births. Maternal mortality rate has also declined to 163 per 100,000 live births since 1970s. The birth rate is 18.2 and death rate is 5.2 (2007).

Among the common diseases prevailing in Mizoram, Malaria continues to be the major disease accounting for the greatest level of morbidity and preventable death. There were 2984 cases in 2004 and 48 deaths. The other common diseases include Tuberculosis, Diabetes, Hypertension, Anaemia etc.

Total fertility rate has increased from 2.30% in 1992-93 to 2.86% in 2005-06. Among women, 59.9% used contraceptives of any kind. 57.8% of women received at least 3 ANC check-up, which shows a decline of around 17% from 1998-99. And 73.2% of Mizo women participate in decision-making about their own healthcare as compared to 52% of the country as a whole.

Among children age 12-23 months, 46.4% are fully immunized where 57.4% accounts for urban areas and 36.2% rural areas. There are 51.7% of children age 6-35 months who are anaemic and 21.6% children who are underweight, also 30.1% and 9.2% of children under 3 years are stunted and wasted respectively.

Table 2: Basic Health Indicators of Mizoram

Population	10,91,014
Decadal growth rate	22.78
Population density(persons per sq km0	52
Sex ratio (no. of females/1,000 males)	975
Literacy rate	91.58
Infant mortality rate(per 1000 live births)	23
MMR(per 1,00,000 live births)	163
Birth rate	18.2
Death rate	5.2
No. of hospitals	10
No. of CHC	9
NO. of PHC	57
No. of SC	366
No. of doctors	155
No. of Nurses	393
No. of Health workers	656
Life expectancy	64
Malaria cases(2004)	29874
No. of deaths due to malaria(2004)	48
Total fertility rate	2.86%
Women receiving 3 ANC check up	57.8%
% of women involved in decision making about their own healthcare	73.2%
% of children fully immunized	46.4%
% of children 6-35 months anaemic	51.7%
Children under3 yrs. Underweight	21.65
Children under3 yrs who are stunted	30.1%
Children under3 yrs who are wasted	9.2%

Source: NFHS-3 2005-06; Annual Report, Health and Family Welfare Department, Mizoram; Economic Survey of Delhi, 2005-06.

Relationship between Healthcare Expenditure and Income

The relationship between healthcare expenditure and income has always been a focus of research for it helps us understand the key determinants of healthcare expenditure and provides information about linkages between the income factor and demand side of health. In this study, this relationship is examined using primary data collected by the researcher from Bawngkawn locality in Aizawl district in the state of Mizoram. The respondents were divided into two groups based on their monthly family income - those families whose monthly income is below 15,000 and those higher than 15,000.

Cause and Effect (t-Test)

Monthly Expenditure on Health Between High and Low Income Groups

Group Statistics

	Total family monthly income(in rupees)	N	Mean	Std. Deviation	Std. Error Mean
Monthly expenditure of a family on health/medical care(in rupees)	>= 15000	60	1702.50	728.501	94.049
	< 15000	40	483.75	364.865	57.690

Assuming equal variance in health expenditure between the two income groups, the mean value of health expenditure in high income groups is Rs. 1702.50, while low income groups is Rs. 483.75, a significant difference of Rs. 1218.75. It is accepted that the difference in health expenditure between the two income groups is highly significant; with the higher the income, the expenditure on health also increasing.

Medical Institutional Choice and Health Expenditure

Group Statistics

	Medical institutional choice of a family for	N	Mean	Std. Deviation	Std. Error Mean
Monthly expenditure of a family on health/medical care(in rupees)	Government/ Civil Hospital	39	871.79	670.506	107.367
	Private Hospital/clinic	61	1434.43	890.110	113.967

Assuming the equal variance in monthly expenditure of a family on health between the different groups, the mean value of health expenditure in private hospital is 1434.43, which is greater than the health expenditure in government hospital 871.79. Hence, it is

concluded that the difference in health expenditure between government and private hospital is highly significant.

Educational Qualification and Health Expenditure

Group Statistics

	Educational qualifications of respondent	N	Mean	Std. Deviation	Std. Error Mean
Monthly expenditure of a family on health/medical care(in rupees)	Matric/ Higher Secondary	40	771.25	741.869	117.300
	Graduate/post graduate	57	1458.77	778.857	103.162

Assuming the equal variance in health expenditure between the two income groups, the mean value of health expenditure by graduate/post graduate is 1458.77, which is greater than the mean value of health expenditure by matric/higher secondary 771.25. It is accepted that the difference in health expenditure by matric/higher secondary and graduate/post graduate qualifications is highly significant.

Regression

Health Expenditure and Income of the Family with Number of Members in the Family.

Health exp i = 174.23 + 11.86 (members of the family) + 0.05 (Income)

t (0.331) (10.53)*

R square = 0.56 ***F = 60.67***

The regression result shows that the income of the family is significantly influencing the expenditure on health. When income increased by one rupee, the expenditure on health also is increased by 5 paise. The number of members in the family is not significantly influencing the expenditure on health. The R square indicates that 56 per cent of variation in health is explained by the two variables in the model. The 'F' statistic shows the model is significant.

Health Expenditure and Educational Qualification of Head of the household with medical institutional choice of the family

Health expi = 186.71 + 225.88 (MIC) + 297.54 (EQ)

(2.48) (3.65)*

R square = 0.24 F = 15.02

MIC = Medical Institutional Choice of a family.
EQ= Educational Qualification of respondents.

The regression result shows that the educational qualification of the respondent is significantly influencing the expenditure on health. With the increases in the educational qualification of the respondent, the expenditure on health is increased by Rs. 297.54 paise. The medical institutional choice of a family is not significantly influencing the expenditure on health. The R square indicates that 24 per cent of variation in health expenditure is explained by the two variables included in the model. The 'F' statistic shows the model is significant.

Health expenditure is, thus, significantly influenced by income level of a family. When income is increased by one rupee, the expenditure on health is increased by 5 paise. Thus, expenditure is a positive function of income, with richer households spending more on illness, than poorer households. The number of members in the family and medical institutional choice of a family is not significantly influencing the expenditure on health. Increased in income and educational levels of the households improved health consciousness and the households can afford to pay for healthcare with increased in income.

Findings and Conclusion

Analysis of the relationship between healthcare expenditure and income shows that there is a positive relationship between healthcare expenditure and income of a family. Expenditure is a positive function of income, with richer households spending more on income than poorer households. The analysis shows that when income increased by 1 rupee, expenditure on health also increased by 5 paise.

Health expenditure is influenced by income and educational qualifications of households. Increased income and educational levels of the households improved health consciousness and the households can afford to pay for healthcare with increased income. However, the medical institutional choice of a family and the number of members in the family is not significantly influencing the expenditure on health.

The regression analysis shows that with the increased in the educational qualification of the respondent, the expenditure on health increased by 297.54. When income increased by 1 rupee, expenditure on health also increased by 5 paise. Thus, expenditure on health is influenced by the income level of a family.

The t-test shows that the difference in health expenditure between high and low income groups is highly significant. The mean value of health expenditure in high income groups is Rs. 1702.50, which is higher than the low income groups Rs. 483.75. This difference can be attributed to the spending habit of the family as well as their income level. With the increased in income level, the household can afford to pay higher level for healthcare.

The mean value of health expenditure by graduate / post-graduate is 1458.77, which is higher than matric / higher secondary 771.25. Thus, the difference in health expenditure between the two groups is highly significant. This is because with the increased in educational level, health consciousness also increased.

The mean value of health expenditure by private hospital is 1434.43, which is higher than the health expenditure by government hospital 871.79. Thus, the difference between the two medical institutions is highly significant.

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