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Healthcare Costs in Peri Urban India

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Abstract

This study aims at understanding the nature of health problems in urban areas, healthcare costs and the ways in which households cope with these unforeseen expenses. Based on a household survey in peri-urban areas of Pune, we find that on an average, households spend 5 to 6 percent of their total monthly expenditure on healthcare. Use of private health services was spread across income groups. The lower income group is on an average, spending more on current ailments – those requiring their immediate attention. Chronic ailments on the other hand, appear to be life-style related, with costs increasing with the increase in incomes. The proportion of disabilities and the average per head cost on disabilities was higher for the poor. We find that childbirth related expenses are significantly more among higher income households. A large proportion of households had to resort to borrowings to meet major health emergencies and most of these borrowings came from informal sources.

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Healthcare Costs in Peri-Urban India

1. Introduction

It has been observed that poor health and high healthcare related expenditures is one of the major reasons for families slipping back into poverty in rural India [Krishna, Aniruddh (2003)]. A common misconception about the urban poor in India is that in comparison to the rural poor, they have better access to public health facilities in cities and can resort to public health services for their needs. However, it is seen that the poorest and vulnerable groups residing in urban slums are outside the ambit of any public health coverage [Kapadia-Kundu N and T. Kanitkar (2002)]. For most urban households in India, cost of healthcare is rising. Studies indicate that almost 75 percent of the healthcare costs are borne out-of-pocket by most households [Dror, David M (2006)]. Insurance coverage for healthcare expenditure and the reimbursable component of health costs is very limited. Most expenditure on healthcare is therefore in the nature of unforeseen contingencies, which have to be met along with other recurring household expenses. Understanding the nature of health problems in urban areas and the healthcare costs on treatment and preventive care will tell us how households cope with these unforeseen expenses. In order to do so, it is necessary to explore the pattern of health problems faced by people in the urban areas and the associated expenditure they incur in meeting these “extra” costs.

Another characteristic of urbanization in India today are expanding peri-urban localities. The incidence of migration from rural areas to these localities is high. Therefore, these localities portray a mixed picture of both urban and rural living. The peri-urban population also has a wide mix spanning across several income, age and occupation categories, attracting both - newer arrival to cities as well as its older residents wanting affordable housing. There are no studies trying to understand how such a population copes with health emergencies and healthcare related costs. We feel that understanding the pattern of health problems and healthcare expenditure in such a population would give us a snapshot of the kind of health issues that have to be dealt with, in urban areas.

A lacuna in most studies relating to healthcare costs is that there is often no distinction made between costs on current illnesses, chronic illnesses and health emergencies. Making a distinction between these various types of healthcare costs will give a better picture of how households cope financially. For example, healthcare costs related to chronic illnesses or disabilities are recurring and predictable. Chronic illnesses like diabetes, hypertension and arthritis require a sustained expenditure on drugs and other preventive medication. The incidence of such illnesses is growing among the urban population, especially among the elderly - whose proportion is also increasing. Once such illnesses are diagnosed, there are committed-costs on medication that have to be earmarked in the household budgets. Health emergencies and accidents, on the other hand, create an unexpected dent in the family finances. Costs on health emergencies are also

spread over a large gamut of direct medical expenditures like costs of drugs, diagnostics and doctors' fees, and indirect expenses like diet of the patient, the transportation and other costs for the caretaker – all of which are a drain on family finances. Health expenditures would also vary depending on the type of ailment, whether there was hospitalization or surgery involved in the treatment and the place of treatment. It is important to gather data on each of these issues to arrive at a more nuanced understanding on how healthcare costs are rising.

In the light of rising healthcare costs, a key issue would be how families cope up financially, with these health contingencies. Whether they run down on their savings or sell assets or borrow to meet these unexpected expenditures? If they do borrow, what are their typical sources? All these questions will have a bearing on arriving at the “actual” costs of meeting an unexpected health emergency in the family. We feel that before analyzing the various public and private remedies to rising healthcare costs, it is critical to get an estimate of the magnitude of these costs incurred by households in urban localities.

2. Review of Literature

Recent policy initiatives dealing with privatization of the insurance sector in India and GATS agreement of opening up the hospital sector to increased foreign investment have triggered several field based studies to understand the market for private health insurance. Both these policy initiatives have a significant impact on the supply and demand for healthcare services. Therefore, a number of studies have looked into the issue of healthcare costs for estimating the demand for private health-insurance products. Indrani Gupta (2002) carried out a survey among 500 households in Delhi, which collected data on acute and chronic illnesses, health expenditures on consultations, drugs, diagnostics, hospital transport and other items along with data on health insurance coverage. In this study it was found that the poorer households spend a larger proportion of their total expenditure on acute illnesses as compared to the middle and high-income households. This survey clearly brings out extremely high burden of healthcare costs on all households, especially the poorer households. Based on this data, the study further goes on to estimate the willingness of households to participate in private health insurance programs.

Based on the same survey, Indrani Gupta and P. Dasgupta arrive at the result that the probability of falling ill is determined by more or less similar variables in both urban and rural India, namely, education, income, age and household size. However, there are some differences in rural and urban India in terms of who is more likely to seek care. Economic status and educational attainment matter much more in urban than in rural India.

One of the first studies on healthcare costs was conducted by Ravi Duggal and Sucheta Amin (1989) in Jalgaon district to find out how much people spend out of their pockets when they fall sick. 65 percent of their sample comprised of the poor. Despite this, they found that utilization of private health facilities was more. In their study, Rs. 183 per year

per person (Rs. 208 for private and Rs. 137 for public) was spent on treatment, out of which 84 percent was towards health services and 16 percent towards other related expenditures (transport, bribes and rituals).

In a more general analysis of the public and private component of healthcare expenditures in India, Ramesh Bhat and Nishant Jain (2006) point out that illness impose a heavy burden on the poor. Private healthcare expenditures have grown substantially faster than real incomes. They estimate that for every 1 percent increase in the real per capita income, the real per capita private expenditure on health has gone up by 1.95 percent.

Another study focusing on urban health policy by C.A.K. Yesudian (1999) in two poor areas of Mumbai, talks about the need for strengthening the public sector and regulating the private sector. The study states that in spite of differential socio-economic conditions, there was no difference in utilization of health services.

A study carried out by K.S.Nair (2001) on the cost of healthcare among the unorganized labor in Delhi, found that on an average, households engaged in the unorganized sector spend 8.87 percent of their income on direct and indirect health expenditure. Nearly 24 percent of the households either borrowed money or sold their belongings in order to meet their healthcare costs.

In a more focused study on health insurance, David M. Dror (2006) points out to an existence of a solvent market for health insurance for India's poor. However, he points out a caveat that tapping this huge market is contingent on understanding the clients' needs and wants. Healthcare needs are heterogeneous and context dependant, and communities differ significantly in their healthcare needs and priorities.

Therefore, there is a need for more context-specific studies. Our study, focusing on the patterns of health problems and health expenditures in peri-urban India, is geared towards this aim.

3. Methodology

3a. Objectives

This study aims to understand how people in peri-urban areas of the city of Pune cope with costs related to healthcare. Pune is located in the western Indian state of Maharashtra and is the 8th largest urban agglomeration in India. With a population of 4.5 million, it is the second largest city in Maharashtra and the seventh largest city in India. It has the sixth largest metropolitan economy with the least income disparity between the rich and poor¹. One objective of the study is to see if health problems and consequent health expenditures vary across income groups in urban agglomerates. We would also look at the relative weightage given to health in their budgets by households across

income groups, vis-à-vis other items like food and fuel, non-food items like conveyance, entertainment and education.

An important objective of our study was to obtain detailed data on the costs incurred on chronic illnesses, apart from costs on current illnesses like cough/cold, fever and aches. One of the issues was to understand what proportion of this sample is taking regular treatment for chronic illnesses. Other specific areas where costs are involved include disability, pregnancies, childbirth and sterilization.

Lastly, we looked at health-emergencies and accidents on which the households had to incur expenditure either by withdrawing savings, or by selling assets or by taking a loan. We were interested in the nature of costs involved in treating these emergencies. The expenditures on drugs, diagnostics, doctors' fees and hospital stay are seen as "direct" costs, and cost on transportation of the care-taker and eatables are seen as "indirect" costs. There is also an opportunity cost in terms of wages lost due to illness. Since people living in the peri-urban areas also have access to public healthcare facilities, we looked at the proportion of people using public healthcare facilities, as against private for such emergencies. If there are borrowings for meeting such contingencies, we also looked at the most common sources of such loans. Therefore, the study looked at health maladies afflicting the peri-urban population, magnitude of their health-related expenses and means by which they bear these expenses.

Our study was designed to collect information on the following items: socio-economic and dwelling details of the households, monthly and yearly expenditure patterns, data on health problems affecting them for more than a day in the past one month (current health problems), expenditure on these current illnesses, chronic health problems in the family (a list of nine chronic health problems was identified), expenditures on drugs, doctor's fees and diagnostics in these cases, health related emergencies in the household, expenditures on these emergencies and whether hospitalization was needed and lastly how were these health related expenditures met.

3b. Sample design

This is a cross-sectional study conducted in two peri-urban localities of Pune, Kasarwadi and Bopkhel. Kasarwadi and Bopkhel come under the Pimpri-Chinchwad Municipal Corporation (PCMC). Both these localities have access to the medical facilities and healthcare services of Pune Municipal Corporation (PMC) and PCMC.

The entire study was conducted during January to March 2007. A complete house enumeration of the two areas was done. A listing of 4,726 households was done for Kasarwadi and of 2,387 was done for Bopkhel. Using this as a sampling frame, 10 percent sample was selected systematically. Taking into account the non-response, we got a sample of 681 households.

4. Results and Analysis

4a. Background characteristics

Table 1 and Table 2 portray brief background characteristics of all the individuals in the aggregated sample for the households in Bopkhel and Kasarwadi. Sex ratio in the selected households is 880, indicating an urban scenario of lesser number of women, partly because of peri-urban localities catering more to migrant men. Twenty six percent of the population is below 15 years of age and a little more than 6 percent are aged. Remaining 68 percent belong to working ages. Dependency ratio for this population is 47 percent, of which old dependency is less – about 9 percent.

Table 1 – Age and Sex distribution of population

Background characteristics	Number	Percent
Age groups		
Less than 15 years	812	25.9
15 to 59 years	2126	67.8
60 years or more	196	6.3
Not reported	7	-
Sex		
Male	1671	53.2
Female	1470	46.8
Total	3141	100

In our sample 37 percent were housewives, 45 percent were students and 4 percent were retired persons. Among the working population, the number formally employed (in factory, banks, government, teaching and other skilled jobs) is 25.8 percent, those informally employed (as security guards, construction workers, health-workers, drivers, and peons) is 53.9 percent and those self-employed is 11.8 percent.

Table 2 – Occupational distribution of working population

Occupation	Number	Percent
Factory work	121	11.0
Mechanic / workshop	13	1.2
Jobs (formal - bank, government, teaching)	135	12.3
Jobs (informal – transport, security etc...)	497	45.2
Own Business	117	10.6
Military	27	2.5
Agriculture	4	0.4
Service providers	23	2.1
Construction related workers	61	5.6
Health related workers	11	1.0
Total	1099	100

Table 3 – Highest educational level in the household

Highest educational level	Number	Percent
Illiterate	14	2.1
1 to 7 standard	46	6.8
8 to 9 standard	64	9.5
SSC	192	28.4
HSC	166	24.5
Diploma	3	0.4
Graduate and above	191	28.2
Not reported	5	-
Total	681	100

As it is seen in Table 3, around 28 percent of the households had a graduate as the highest educated member in the family. Very few households had them as illiterates – around 2 percent.

Table 4 - Details of dwelling type

Dwelling type	Number	Percent
Ownership of house		
Owned	370	55.0
Rented	303	45.0
Not reported	8	-
Type of house		
<i>Pucca</i>	299	44.1
<i>Semi-pucca</i>	182	26.8
<i>Kachcha</i>	197	29.1
Not reported	3	-
Number of rooms		
1	228	37.1
2	189	30.8
3	119	19.4
4 or more	78	12.7
Not reported	67	-
Total number of members in the house		
1	14	2.1
2-3	135	19.8
4-5	371	54.6
6-10	156	22.9
11 or more	4	0.6
Not reported	1	-
Total	681	100.0

Around 54 percent of the sample lived in *kachcha* (walls, roof and floor of the unit is not a permanent structure) and *semi-pucca* (one of the three – walls, floor and roof is not permanent) dwelling units. The above information will be used to analyze the vulnerability of the population to illnesses, since we feel that higher density of members per dwelling and living in a *kachcha* dwelling increases vulnerability to illnesses.

Table 5 - Drinking water and sanitation facilities

Drinking water and sanitation	Number	Percent
Drinking water facility		
Independent	371	54.7
Common	255	37.6
Other	52	7.7
Not reported	3	-
Bathroom facility		
Inside the house	624	93.1
Outside the house	46	6.9
Not reported	11	-
Toilet facility		
Independent	289	42.4
Shared	390	57.4
No toilet	1	0.2
Not reported	1	-
Total	681	100.0

As seen in Table 5, drinking water and sanitation facilities seem to be fairly good – around 55 percent of the households have independent drinking water facility, around 93 percent having a bathroom facility inside the house and around 42 percent have independent toilet facilities. Sanitation facilities again, will have a bearing on the vulnerability of these households to illnesses.

Table 6 - Economic profile of the households

Economic profile of households	Number	Percent
Monthly income		
Less than Rs. 5,000	299	44.6
Rs. 5,001 to Rs. 10,000	247	36.6
Rs. 10,001 and more	126	18.8
Not reported	9	-
Total	681	100.0

Around 45 percent of the households had a monthly income of less than Rs. 5,000; 37 percent of the households had a monthly average income between Rs. 5,001 and 10,000 and 19 percent had income above Rs. 10,000. This gives a good spread for analyzing health expenditures as per income categories. We can obtain information about certain health problems, which are related to life-style and therefore more prevalent in the higher income group as compared to the lower income group.

4b. Analysis of monthly household expenditures

To understand the role played by healthcare costs in the household budgets, it is useful to compare it with the household's expenditures on non-health items. The major items analyzed here are food and fuel, non-food (rent, electricity and water charges, house-installments and clothes), convenience and entertainment (phone, cable, conveyance, entertainment, travel, and spending on religious activities) and education. We analyzed these expenditures as per the income categories to which the households belonged. Table 7 gives monthly average spending of households on each of these four heads. The figures in bracket give percentages of the total expenditure. As expected, with the rise in the incomes, there is an increase in average expenditures for all these four major items. However, the rise in food and fuel is predictably stable and small. The average expenditure on non-food items shows a sharp jump when income increases from less than Rs. 5,000 to over Rs. 5,000. With income increasing over Rs. 10,000 the rise in this expenditure is around 50 percent. However, for monthly spending on convenience and entertainment, there is a strong correlation with rising incomes. The average education expenditures of households also show a strong correlation to incomes, though it would also be correlated with the number of school/college going children in the household.

Table 7 – Share of major non-health expenditure categories to total expenditure by income

Income (Rs.)	Food and fuel (Rs.)	Non-food items (Rs.)	Convenience and entertainment (Rs.)	Education (Rs.)
Less than 5,000	1,932.43 (55%)	753.78 (23%)	548.36 (13%)	284.13 (3.4%)
5,001-10,000	2,451.60 (44%)	1,483.82 (24%)	1,153.14 (19%)	693.14 (6%)
10,001 and more	3,146.85 (37%)	2,252.44 (23%)	2,715.32 (27%)	1,218.47 (7%)

4c. Current illnesses

We define current illnesses as illnesses that affected people for more than a day in the past one month. Some of the ailments mentioned were cough, cold and fever (55

percent), aches and pains of various kinds (10 percent) and digestive problems (10 percent) and other minor ailments like dental problems and injuries of various kinds.

Depending on the dwelling and living conditions of families, some households in peri-urban areas are more susceptible to health problems. We list such critical factors that increase vulnerability to illnesses: crowding (more than four people per room) or living in a *kaccha* house, non-availability of independent toilet and sanitation facilities and low levels of income (income less than Rs. 5,000 per month). Total number of households falling in the category of “vulnerable” is 130, out of the sample of 681 households (19.1 percent). We compare the incidence of illnesses currently reported among the vulnerable vis-à-vis the non-vulnerable group in this sample. Out of the 130 vulnerable households, 82 households (63 percent) reported that they were suffering from some ailment currently. Similar data for the non-vulnerable group was 361 households (65 percent). So there does not seem to be a correlation between perceived vulnerability to illnesses, and actual reporting of current illnesses by the respondents. This could also be due to the poor reporting or diagnosis of illnesses by the vulnerable group. Data on some of the current illnesses between these two groups is given in Table 8.

Table 8 – Distribution of current illness by vulnerability

Current illnesses	Vulnerable	Non-vulnerable
Cough, cold, pneumonia	42 (51.2%)	203 (56.2%)
Aches and pains	9 (11.0%)	55 (15.2%)
Digestive Problems	6 (7.3%)	36 (10.0%)
Other illnesses	25 (30.5%)	67 (18.6%)
Households reporting current illnesses	82 (100.0%)	361 (100.0%)

We were also interested in finding out the duration for which these households suffered from these current illnesses. Duration is important from two perspectives – the vulnerable, by definition are prone to suffer longer because of their poor living conditions and at the same time, they cannot afford to lose man-days being off employment, so there is a possibility of ignoring minor ailments.

Table 9 – Duration of current illnesses by vulnerability

Duration of current illness	Vulnerable	Non-vulnerable
1 – 3 days	15 (18%)	87 (25%)
4 – 8 days	41 (50%)	138 (39%)
9 – 15 days	9 (11%)	62 (18%)
16 – 30 days	8 (10%)	33 (9%)
> 1 month	9 (11%)	33 (9%)
Total	82	353

Table 9 gives the data on duration of illnesses of these two groups. We see that as compared to the vulnerable, a larger proportion of the non-vulnerable have stated to be suffering for short periods of 1-3 days.

4d. Analysis of costs on current illnesses

We analyzed the incidence of illnesses and the expenditures on current health problems of households belonging to various income categories. Respondents were also asked about the kind of treatment that they obtained for current illnesses. Table 10 gives the type of treatment taken by the respondents by income category.

Table 10 – Type of treatment for current illnesses by income category

Type of treatment	Monthly income category (Rs.)			Total
	Less than 5,000	5001-10,000	10,001 and more	
No Treatment	33	23	6	62
Medicines	31	33	3	67
Allopathic Doctor	62	67	54	183
Homeopath	0	0	3	3
Ayurved	1	1	0	2
Admitted to Hospital	58	48	6	112
Total	185	172	72	429

We notice that a higher proportion of the respondents in the income category below Rs. 5,000 are found in the two extreme situations. Many of them are not taking treatment for

their ailments and many are also admitting themselves to hospitals. This could be a typical response-pattern among the poor, where they tend to ignore minor ailments in the beginning, but then have to be later admitted to hospitals due to prolonged ill-health and increasing severity of the illness. We see in Table 11 that there is not much difference in average monthly expenditure on current illnesses by income.

Table 11 – Average monthly expenditure on current illnesses by income

Income (Rs.)	Average monthly expenditure (Rs.)	Number of households
Less than 5,000	449.92	154
5,001 – 10,000	408.03	155
10,001 and more	473.28	67
Total	438.95	378

Table 12 gives the average expenditure on current illnesses of the households in the vulnerable group vis-à-vis the non-vulnerable. Again, though the proportion of the vulnerable group that has reported to be suffering from current illnesses is much lower, the expenditure is not significantly lower compared to the non-vulnerable group.

Table 12 – Average expenditure on current illnesses by vulnerability

Vulnerability	Average monthly expenditure on current illnesses (Rs.)	Number of households
Vulnerable	371.25	60
Non-vulnerable	450.99	319
Total	438.37	379

This goes to say that the vulnerable and the poor are hit severely by short-term ailments like cough, colds, fevers and pains. They generally ignore them in the beginning, since we see a larger proportion of the poor not taking any treatment. One of the reasons for this (as well as the lower reporting of such ailments among the vulnerable) is that the loss of work and wages, which affect the poor and vulnerable more than the higher income sections.

4e. Analysis of healthcare costs of chronic ailments

Information was obtained on nine chronic ailments: diabetes, hypertension, acidity, asthma, arthritis, heart diseases, cancer, gynecological problems and others. Once diagnosed, the treatment of such illnesses has to be fairly regular and sustained. We

analyzed the pattern of this predictable element in healthcare costs. From 681 households, 271 individuals stated that they were diagnosed with some chronic ailments. Hypertension (BP) was reported to be the major illness prevalent. Heart diseases and acidity came next. However, not all took regular treatment for these illnesses. 159 individuals of the total 271 (59 percent) suffering from some or the other type of chronic disease responded that they were taking regular treatment. The range of expenditures on these diseases (taken on a monthly basis) varied from Rs. 20 to Rs. 5,000. The expenditures on chronic illnesses included expenditures on drugs, tests and doctor's consultations. Of the three, we took the expenditures on drugs to be the sustained and recurring element in the cost. We found that the average expenditure on drugs for these chronic illnesses was around Rs. 530 per month. Of the chronic illnesses, the highest expenditure was incurred on cancer and heart diseases, followed by arthritis, asthma and hypertension.

Comparing the expenditure on chronic ailments among the vulnerable and non-vulnerable groups, we found that of the total 271 individuals reporting chronic ailments, only 30 individuals belonged to vulnerable households, while the remaining 241 individuals belonged to the non-vulnerable households. The reason for this could be that most chronic illnesses are lifestyle related, prevalent among the relatively better off sections of the population. For example, all the 49 people reporting to be suffering from diabetes belonged to the non-vulnerable section of the sample. Another reason for such a low prevalence of these diseases among the vulnerable group could also be that these illnesses are not diagnosed due to lack of awareness or lack of resources. The average monthly expenditure of the vulnerable group was therefore lower than that of the non-vulnerable group – Rs. 396 as compared to Rs. 546 – though this difference was not significant.

The fact that most of these chronic illnesses are lifestyle related is also borne out in Table 13, where we give the average monthly expenditure of the households based on their income categories. As we see, the average monthly expenditures increase significantly with the increase in income levels. This is especially the case for the well-known lifestyle related diseases like diabetes, hypertension and heart diseases.

Table 13 – Average monthly expenditure on chronic ailments by income

Income (Rs.)	Average monthly expenditure on chronic illnesses (Rs.)	Number of households
Less than 5,000	331.15	40
5,001 – 10,000	505.26	57
More than 10,000	775.79	38
Total	529.82	135

The average expenditure differs by the ailment. Table 14 gives the average cost on these chronic ailments. The highest average expenditure is on cancer, followed by heart diseases.

Table 14 – Type of chronic ailments and monthly expenditure

Type of chronic ailment	Total Number	Number taking regular treatment	Average monthly expenditure (Rs.)
Diabetes	49	42	408.70
Hypertension	68	61	403.25
Acidity	50	48	237.82
Asthma	20	20	491.67
Arthritis	38	35	528.13
Heart Diseases	11	10	800.00
Stroke	6	5	350.00
Cancer	6	3	1,400.00
Gynecological problems	18	14	245.38
Other	5	3	525.00
Total	271	241	419.68

4f. Share of health and non-health expenditure in total expenditure

We are now able to give some numbers on the share of health expenditure in the total monthly expenditures of various groups. As we see in Table 15, the share of expenditures on current illnesses was around 4 percent of the total expenditure, while the share of chronic illnesses was around 2 percent. These figures did not vary much between the vulnerable and the non-vulnerable sections of the population. The non-vulnerable spend a marginally higher proportion on chronic illnesses, as compared to the vulnerable group (2.2 percent as compared to 1.6 percent). Both groups spent almost an equal proportion of their expenditures on current illnesses (3.9 percent of their total expenditures). This goes to say a lot about the burden of health expenditures on the vulnerable section of the sample. Their living condition makes them more susceptible to illnesses and given their low incomes, they are spending almost the same proportion of their total monthly expenditure on health, as the non-vulnerable population.

Table 15 – Percentage share of monthly expenditure by vulnerability

Expenditure heads	Vulnerable (% of monthly expenditure)	Non-vulnerable (% of monthly expenditure)
Food and fuel	56.9	45.1
Non Food	23.1	23.6
Convenience and Entertainment	11.6	19.4
Education	2.7	5.7
Spending on current ailments	3.9	3.9
Spending on chronic ailments	1.6	2.2

Table 16 gives the share of health costs in total expenditures as per the income categories. We find a crucial difference in healthcare costs on current versus chronic ailments across income categories. The share of expenditure on current illnesses decreases with the income levels, while the share of expenditure on chronic illnesses increases with income levels. Therefore, this data points out that people in the lower levels of income spend more on treating those current ailments, which need to be treated immediately and might cause them to lose out on work-days. While people in the higher income groups spend a greater proportion of their total health-related spending on care and treatment of chronic illnesses. Another reason for these differing trends could also be that due to several reasons, chronic ailments are not being diagnosed among the people in the lower income groups.

Table 16 – Percentage share of monthly expenditure by income category

Expenditure heads	Less than Rs. 5,000	Rs. 5,001 – 10,000	Greater than Rs. 10,000
Food and fuel	54.5	44.1	37.1
Non food	22.7	24.4	23.2
Convenience and entertainment	13.3	18.9	27.1
Education	3.4	6.2	7.2
Spending on current ailments	4.5	3.9	2.4
Spending on chronic ailments	1.6	2.4	2.8

4g. Analysis of costs related to disabilities

Information about disabilities was collected to understand how much they have to spend on these problems. Considering the nature and duration of the disability, the burden varied. It was either be a one-time cost or recurring cost or both. Respondents were asked how much they have spent on the disabled for drugs, doctors' consultation and tests. In this sample in 39 households (6 percent) 40 individuals are reported to have disabilities. Thus in this population 1.25 percent have disabilities. Among the 40 reported disabilities 31 (77.5 percent) are physical disabilities and 9 are mental. Eight of these disabilities are from birth and 4 are from childhood. All others are either because of accidents or because of ill effect of some illness. Among these 40 people, 27 take treatment regularly. Costs range from Rs. 215 to Rs. 70,000. Among these, 13 have spent at least Rs. 5,000 or more.

We saw if there existed differences in the spending on disabilities in the vulnerable vis-à-vis the non-vulnerable. Out of the 130 households defined as vulnerable, 16 households reported some form of disabilities (12 households reported having physical disabilities and 4 households reported having mental disabilities). Of the 551 non-vulnerable households, the total households reporting disabilities were 24 (19 physical and 5 mental). Among the vulnerable group, the mean expenditure reported was Rs. 19,875, which was higher than the mean expenditure of Rs. 13,151 reported by the non-vulnerable group. Therefore, both the proportion of households reporting disabilities and the average per-head cost on disabilities was higher for the vulnerable group, as compared to the non-vulnerable.

Looking at the income levels of disabled persons it is seen that disabilities are more among lower income groups compared to higher income groups. Of the total 299 households having income less than Rs. 5,000, the households reporting disabilities were 23 (8 percent). The percentage of households reporting disabilities in the middle-income group was 5 and in the higher income group, it was 2. The proportion of mental disabilities was higher among the lower income group (26 percent), as compared to the middle and higher income groups. Regarding expenditures, the middle-income group was spending the maximum on disabilities, as compared to the lower and high-income categories.

Table 17 - Cost of disability by vulnerability and income

Vulnerability and income	Number	Average one-time expenditure (Rs)
Vulnerability		
Vulnerable	8	19,875.00
Non-vulnerable	13	13,151.15
Income category		
Upto Rs. 5000	13	15,400.00
Rs. 5001 – Rs.10000	6	21,369.17
Rs.10001 and more	2	775.00
Total	21	15,712.62

4h. Analysis of costs related to gynecological problems

Pregnancy related costs could be a major component of healthcare expenses among households. In this sample, 5 percent of the households (33 households) reported current pregnancies. Out of the 33 households, 27 had registered for delivery in the hospital. Among these, 21 women were in the third trimester of the pregnancy. The average cost ranged from Rs. 60 to Rs. 6,800. In contrast to the costs on disabilities, women belonging to non-vulnerable group have spent double the amount than the women from vulnerable groups. The difference is statistically significant ($p=0.044$). However, when we look at the costs by income categories, the difference is not significant.

Among the 681 households, women in 84 households (12 percent) have undergone either a sterilization or an abortion. Both these involve costs. 32 women chose private hospitals for these procedures. The cost range for these was Rs. 300 to Rs. 40,000. The detailed information about the type of hospital and costs provided by 38 women indicated that there is no particular choice for the type of provider, public or private. However there is significant difference in amount spent for these procedures in public and private healthcare facilities ($p=0.009$). In private hospitals women have spent 2.5 times more than in public hospitals. Similar findings are reflected while comparing these costs among the vulnerable and the non-vulnerable groups. Women belonging to vulnerable group have on an average spent Rs. 4,733, which significantly less than Rs. 10,675 spent by the non-vulnerable group. ($p=0.030$). This implies that the vulnerable sections are using public health facilities, while the non-vulnerable are using private. Similar observation is recorded for spending across income categories. The average expenditure of the low-income group, Rs. 4,520 was seen to significantly lower than the middle-income group, Rs. 9,947 and the higher income group, Rs. 14,227 ($p = 0.044$).

4i. Analysis of costs on major health problems

Information was collected on major health emergencies or accidents that occurred in the households, which required them to raise money for treatment either through borrowings, running down on savings, or selling of assets. We also collected data on whether hospital-admission was needed for the emergency, the hospital in which was the person was admitted and the type of treatment given. For the costs involved in treating such emergencies, we asked information on direct costs (drugs, diagnostics, doctors' fees and hospital stay) indirect costs (costs for the caretaker in terms of transport and eatables) and opportunity costs in terms of wages lost.

460 households reported that some type of a major health emergency had occurred, which had created a dent in their family expenditures. Major health emergencies reported were accidents followed by cardiac strokes and appendicitis problems. Out of this, 91 belonged to the vulnerable group and 369 belonged to the non-vulnerable group. Accidents were the major emergency among the vulnerable group (around 50 percent). Cardiac strokes and appendicitis are prevalent more among the households in the non-vulnerable group. Out of the 460, 164 persons required immediate admission to the hospital, and a greater proportion of such persons (around 85 percent) belonged to the non-vulnerable category. Of the total 164 persons admitted to hospitals for such health emergencies, around 80 persons were admitted to private hospitals.

Analysis by income categories shows that for the 80 persons requiring admission to private hospitals, 41 percent belonged to the lower income category (income less than Rs. 5,000), 37 percent belonged to the middle-income category (income between Rs. 5,001 and 10,000) and remaining from high-income category (Rs. 10,001 and more). Thus, people across income categories are using private hospitals for treatment of major health emergencies. This is in line with the study by C.A.K. Yesudian (1999), where he found that in spite of differing socio-economic status and morbidity rates, there was no difference in the utilization of healthcare services between the private and the public. But we also find that government and corporation hospitals are being used more by people in the lower income categories (55 percent of the people reporting admission to government and corporation hospitals belonged to the lower income category).

The range of expenses on such major health emergencies was Rs. 5,000 to Rs. 11 lakhs (the latter being reported on treatment of Cancer in a private hospital). We were also able to get some information on the apportioning of these costs between direct, indirect and opportunity costs. For the members reporting indirect costs on health emergencies, the range was from Rs. 300 to Rs. 84,000. Predictably, indirect costs were higher for health problems like jaundice and Tuberculosis. Of the 35 persons who reported opportunity cost – wages lost due to illness, 20 belonged to the lower income group and 14 belonged to the middle-income group. Thus, the poor are hit hard by these opportunity costs of health emergencies, which included loss of job (reported by one member belonging to the lower income category). Among the indirect costs for health emergencies, the average expenditure was Rs. 1,960 on conveyance, Rs. 1,730 on attendants of the patients, and Rs. 1,300 on food of the patients. This analysis highlights that while there is a lot of

emphasis on rising direct health costs, the burden on the household of such indirect costs of episodic health emergencies cannot be ignored.

Regarding the source of finance for such health emergencies, Table 18 states the sources tapped by people to draw on funds for such emergencies and the average amount of such funds.

Table 18 – Source of major healthcare related expenditure

Source of finance for major health emergencies	Number	Average amount per emergency (Rs.)
Borrowings from friends and relatives	55 (39.8%)	27,095
Drawing down of own savings	44 (31.9%)	21,318
Reimbursement	30 (21.7%)	65,533
Borrowings from SHGs	11 (8.0%)	10,409
Borrowings from Bank	12 (8.7%)	36,917
Borrowings from moneylenders	10 (7.2%)	17,550
Assets sold	6 (4.3%)	34,833
Total	138 (100.0%)	31,763

As we see, 138 households on an average borrowed Rs. 31,763 for meeting health emergencies. The major source of funds for health emergencies has been borrowings from friends and relatives followed by drawing down on own-savings. Regarding the average amount, respondents having medical re-imburement have reported highest average costs, followed by respondents able to borrow from banks. Interestingly, the 6 respondents who sold assets were fairly equally distributed across income groups. All of the 6 were admitted to hospitals and 3 of them reported accidents as being the reason for the health emergency. We therefore conclude that people find it difficult to resort to any formal source of finance, when it comes to healthcare costs. They still depend on informal sources like borrowings form friends and relatives.

5. Conclusion

Households living in peri-urban areas spend on an average 5 to 6 percent of their total monthly expenditure on healthcare. We found that making a distinction between current health problems and chronic ailments gives some important clues on how these expenditures vary across income groups. The lower income groups are on an average, spending more on current ailments – those requiring their immediate attention. One of the reasons could lie in their typical response-pattern towards such illnesses. Majority of

them state that they are either not taking any treatment for these illnesses, or they are getting themselves admitted to hospitals after prolonged severity of the illness.

Chronic ailments appear to be life-style related, with the expenditures increasing with the increase in incomes. However, the lower number of such chronic ailments being reported among the vulnerable could also be due to non-diagnosis of such ailments. On an average, around Rs. 420 per month is being spent on the treatment of such ailments. The cost however, varies with the type of ailments – heaviest burden imposed by cancer and heart diseases.

The distinction between vulnerable and non-vulnerable groups was important to our analysis, because we found that both these groups are spending almost the same proportion of their average monthly expenditures on health. So, the burden of healthcare cost is greater on the vulnerable population, which is most susceptible to ailments. The proportion of households reporting disabilities and the average per-head cost on disabilities was also higher for the vulnerable group. With regard to pregnancies however, the non-vulnerable group has spent significantly higher than the vulnerable group.

Regarding health emergencies, accidents were reported by maximum number of households followed cardiac arrests and appendicitis problems. Hospitalization in private hospitals was done across income categories, though the households belonging to the lower-income category are using public hospitals more. Indirect and opportunity costs of health emergencies also create a major dent in household expenses. Majority of the households that reported loss of income due to illness belonged to the lower income category. A large proportion of households that reported a major health emergency resorted to borrowings to meet these additional expenses. Most of the borrowings came from informal sources -friends and relatives. A substantial number also had to run down their savings to meet these expenses. Thus, very few households, even in the peri-urban areas have recourse to any formal source of borrowing or any health-insurance coverage for meeting their rising healthcare costs.

Notes

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¹ Pune Municipal Corporation – Environmental Status Report for Pune, 2005 – 06.

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