ORIGINAL RESEARCH PAPER

Volume-7 | Issue-3 | March-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

# COST OF ILLNESS IN POPULATION LIVING IN THE SLUMS OF GUWAHATI CITY, ASSAM.

Community Medicine

**Dr Chinmayee Barthakur*** MD community Medicine Associate Professor, Deptt. of Community Medicine, Tezpur Medical College. *Corresponding Author

**Dr Jutika Ojah** MD community Medicine Professor & Head, Deptt. Of Community Medicine, Gauhati Medical College.

## ABSTRACT

Access to the full gamut of comprehensive health care services at an affordable cost is very essential for an individual to lead a socially and economically productive life. But the health care cost, increasing manifold and mostly born out of pocket by the households, leads to either non utilization of health services or selling of assets and borrowing money especially among poor. This pushes them to further impoverishment. Most of this cost is incurred for drugs and diagnostics. Hence this study aims to find out the treatment cost of illness episodes, the sources of spending on treatment among slum dwellers and also their awareness regarding health insurance schemes. This cross sectional study was conducted in the slums under the field practice area of deptt. of community medicine, Gauhati Medical College. Through house to house visits the households reporting at least one member with an illness episode for which treatment was sought during the reference period were identified and included in the study. Results of the study revealed that for hospitalised episodes direct ie medical cost of treatment was Rs 5585.97 and Rs12293.87 in govt and private hospitals respectively. For non hospitalised episodes it was 1745.82 and 2702.36 in govt and private hospitals respectively.

## KEYWORDS

Hospitalized illness, nonhospitalized illness, direct and indirect medical cost, govt and private health facilities, health insurance.

### Introduction:

Health is an important indicator of Human Development Index. Every individual needs to remain healthy to lead a socially and economically productive life. But health shocks which are defined as unpredictable illnesses lower the health status of people and act as an impediment to living a productive life by impoverishing people.[1] Hence access to the full gamut of comprehensive health care services at an affordable cost is very essential[2]. But over the period of time the health care cost has increased manifold.[3] At present in India the health care cost is mostly financed through out of pocket spending.[4,5,6] According to National health Accounts[7] data of India, out of pocket expenditure is the single largest component of current health expenditure (CHE) and constitutes 69.1% of CHE. In many health systems when it is very high, for individuals or households, accessing health care can result in financial catastrophe.[6] In India out of pocket spending is cited as single major reason of impoverishment in case of hospitalization[8] and the growing incidence of catastrophic expenditure due to health care cost is identified as one of the major contributors to poverty.[1,9,10] At times this leads to under and even non-utilization of health services by the poor. It is evident from findings of 60th round of NSSO[11] survey that 20% in the urban areas cited the financial problem as a reason for not seeking treatment.

When a household experience an illness, it is affected by both payments for treatment and income loss.[1]If payments for treatment is compared between private facilities and public facilities it is higher for both inpatient and outpatient services in private facilities [8,9] and the expense of non-communicable diseases is more than that for communicable diseases.[9]Drugs, diagnostic tests and medical appliances account for more than half of OOP expenditures.[9, 12,13] The means of financing the cost are using savings, borrowing, selling assets etc.[1,14]

In view of the above mentioned facts an attempt was made to assess health care cost among socio economically deprived population living in slums of Guwauhati city of Assam.

### Objectives:

1. To assess the cost of illness episodes among slum dwellers.
2. To find out the sources of spending on treatment.
3. To assess their awareness regarding health insurance schemes.

### Methodology:

The study was a community based Cross sectional type of study conducted during the period from 1/4/16 to 31/8/16.The study setting was the slums under the field practice area of Department of Community Medicine, Guwahati Medical College. Study population comprised of slums dwellers of any age.

### Sampling technique and sample size:

The field practice area of Urban Health Centre under deptt. Of Community Medicine have five no of slums having a total population of 5895 and total 551 households. Out of these five slums three slums with a population of 4395 and 426 households were selected purposively. House to house visits were carried out there and the households meeting the following inclusion criteria were selected for the study. Inclusion criteria: Households having members living in the slum for more than 6 months with at least one member suffering from any illness within one month prior to the survey and seeking treatment but without hospitalization and or households having at least one member reporting illness and hospitalization within 6 months prior to the survey.

Data collection technique and tool: For data collection interviews were conducted along with review of secondary records like prescriptions, medicines, receipts, investigation reports. A predesigned pretested interview schedule was used as data collection tool.

While calculating treatment cost, if same person in a household suffered from more than one episodes of illness and if two or more persons in the same house hold suffered from different episodes of illness, all the episodes were included for analysis.

### Important definitions:

Illness episodes: If any member in the household was diagnosed as ill by a health care professional and or if the person experienced discomfort or was unable to do usual activities within the reference period.

Reference period: Details of all non hospitalized ailments during last one month were collected for all members of the family. For hospitalized ailments, detail data were collected for last six months.

Health expenditure: Medical expenses included expenditure on medicines, bed charges for hospitalised treatment, charges for diagnostic tests, and fees for doctor/surgeon. The other expenses which is expressed as indirect cost in the present study, constituted all expenses relating to treatment of an ailment incurred by the household other than the exclusive expenditure regarding medical treatment. This category of expenditure included all transport charges paid by the household members, food and lodging charges of the attendant(s) in connection with the treatment. The estimates of total expenditure were arrived at as the sum of medical expenditure and other expenditure. These criteria were taken from NSSO 71st round of survey.[15]

Hospitalised episode of illness: Medical treatment of an ailing person

as an in-patient in any medical institution having provision for treating the sick as in-patients were considered as hospitalised treatment.

Non hospitalised episode of illness: Medical treatment sought for an ailing person as an out-patient from any medical institution, clinic and Pharmacy. The nature of treatment may be allopathic, ayurvedic or homeopathic.

**Results and observations**:

After the household survey in the slums, 206 families meeting the inclusion criteria were selected for the study. The total no of population in these families were 1079, i.e average persons per family was 5. Age wise distribution showed that (52)4.28% of the total study population belonged to the under 5 age group, (70)6.48% belonged to 5-9 years age group, (257) 23.81% to 10 to 19 years age group and (40)3.70% belonged to the 60 years and above age group. Rest (660)61.17% belonged to 20-59 years age group. Among 1079 slum dwellers, 52% are male and 48% are female. Majority of the population were Hindu (51%) followed by Islam (47%), Christian (1.39%) and Sikh (0.37%). Regarding other demographic characteristics 79.5% were literate, 90% were from general caste, and 65% lived in joint family. As per the survey, out of 206 families, 8% families had monthly per capita income between 300-1000 rupees, 23% families had income between ≥1000-2000 rupees and 69% families had income between ≥2000-6000 rupees.

Out of the total population 248 persons reported any morbidity for which treatment was sought within the reference period. Among 0-4, 5-9, 10-19, 20-59 and ≥60 years age group 12(23%), 14(20%), 32((12%), 161(24.4%) and 29(72.5%) respectively reported at least one episode of illness for which treatment was sought during the reference period. The total no of illness episodes for which treatment was sought were 275 as some suffered from more than one episode of either same or different illness. Out of these episodes 144 were non hospitalized ones and rest 131 episodes were hospitalized ones. Regarding type of health care providers, public health facilities like Gauhati Medical College and Urban Health Centre were utilised for 166 episodes of illness, private hospitals or clinic for 103 episodes and pharmacy was the source for 13 episodes. Some of those who sought treatment from Pharmacy later also visited either govt or private health facility. In case of hospitalization mostly govt health facility was used. Regarding type of illnesses among the children aged 0-9 years, diarrhoea was most common symptom for which treatment was sought followed by fever and injury. In the adolescent age group the common symptoms for which treatment was sought were fever, jaundice and injury. Diseases and symptoms suffered and treatment sought for by 20-59 year aged people were injuries, arthritis, gastritis, hypertension, TB, stroke, diabetes mellitus, gall bladder stone, jaundice, cataract, COPD, thyroid disorder, cancer, dengue etc. The elderly population mostly suffered and sought treatment for diabetes mellitus, hypertension, COPD, cancer, stroke, cataract, arthritis etc.

**Table1**: **Average cost of a hospitalised and non hospitalised episode of illness in a household according to type of health facility.**

| Type of health facility | Hospitalised illness | | Non hospitalised illness | |
|---|---|---|---|---|
| | Direct cost of treatment | Indirect cost of treatment | Direct cost of treatment | Indirect cost of treatment |
| Government | 5585.97 | 5315.10 | 1745.82 | 1169.35 |
| Private | 12293.87 | 4255.48 | 2702.36 | 844.75 |

It was observed that for both hospitalised and nonhospitalised episodes direct ie medical cost of treatment was higher in private hospitals but the indirect cost was higher in govt hospitals.

**Table 2: Distribution of direct and indirect cost of an episode of illness in a household**

| Direct cost(Rs) | | | | Indirect costs(Rs) | | |
|---|---|---|---|---|---|---|
| Consultation fees | Investigation | Drugs | Others | Transportation | Attendant's cost | Wage lost |
| 119.54 | 1516.98 | 3641.34 | 409.88 | 296.96 | 428.52 | 2507.09 |

The direct and indirect cost was calculated for both hospitalised and nonhospitalised episodes of illneses combined together. Expenditure on medicines and investigations constituted the major portion of the health care cost in a household. Wage lost due to the illness was major contributor to the indirect cost of a treatment. The highest total cost of treatment (Rs 10930) of an illness episode was among elderly followed by Rs 8999 in people aged 20-59 years and Rs 3990 among adolescents. The lowest cost was estimated among the under five group with Rs 1843.

**Table3: Sources from where health expenditure is met. (N= 206 households)**

| Category | Number of cases | Percentage |
|---|---|---|
| Savings | 177 | 86% |
| Borrowed | 94 | 45.6% |
| Selling of assets | 11 | 5.3% |
| Insurance | 1 | 0.5% |

Majority of the households either used their savings to meet the need or borrowed from others.

**Table 4: Awareness about Health Insurance scheme.**

| Awareness about Health insurance | No of families | Percentage |
|---|---|---|
| Aware | 17 | 8.25% |
| Unaware | 189 | 91.75% |
| Total | 206 | 100% |

Only 8.25% of the families were aware about health insurance scheme.

**Discussion:**

Out of the total population 248 persons reported any morbidity within the reference period. Total episodes of illness for which treatment sought, were 275. For majority (166) of the episodes, households visited govt hospitals. It was observed that even for episodes treated in govt hospitals one had to incur expenditure. The 'Table 1'showed that for both hospitalised and nonhospitalised episodes of illness, the average direct cost of treatment was higher in private hospitals than govt ones but indirect cost was higher in govt setup. In case of hospitalization the average direct cost of an episode was almost double than that in the private setup but in nonhospitalized ones the difference is quite less. Higher indirect cost in govt setup may be due to long waiting time for consultation and repeated visits needed for investigations that too during day time leading to wage loss of the patient as well as the attendant and wage loss was found to constitute the major part of the indirect cost. Cost of investigations and buying medicines constituted the major portion of the direct cost of treatment for both hospitalised and none hospitalised illnesses together. Average consultation fee was Rs 119. In the medical college and UHC no consultation fee was required except a user fee of Rs 5. The average cost of treatment of an episode of illness including both hospitalised and nonhospitalised episodes in govt and private setup together was highest for the elderly. Most of the households met their needs from savings but 5.3% had to sell assets. Only 8.25% were aware about govt health insurance scheme. Gupta I, Chowdhury S, Prinja S found OPD expenditure per ailing person to be Rs 589, 496 and 941 in Haryana, Gujrat and UP respectively. Dror M D, Putten-Rademaker O van, Koren R reported from their study done in five resource poor locations (including rural and urban both) in India that the average direct and indirect cost of an illness episode per household to be 908±52.1 and 393±22.2 respectively. They also found the cost of hospitalization to be higher in private (1405 ± 151) than govt providers (746 ± 147). NSSO 71st round survey reported that 68% of hospitalised cases in urban areas sought treatment in private hospitals. In Assam 515 and 485 persons per thousand populations went to public and private hospitals respectively. Average medical expenditure per hospitalisation case was higher in private hospitals Rs 25850 than in public hospitals Rs 6120. In case of nonhospitalised episodes average medical expenditure per ailing person was Rs 639 in urban areas. In Assam average total medical expenditure per case in urban was Rs 47064 and averages other expenditure was Rs 5304. Regarding the sources of expenditure 74.9% met their expenses from savings, 18.2% by borrowing, and 4% selling their assets, 5% through contribution from friends and 1.35 % from other sources. As per the same report 82% of the urban population were not covered under any scheme of health expenditure support.

**Conclusions:**

The study was conducted among urban poor to know about the cost of treatment during hospitalised and nonhospitalised episodes of illness. During the study it was observed that for majority of the illness episodes they sought treatment from govt health facilities. In govt. health facilities also they had to incur expenditure for treatment but the cost of treatment was less than private health facilities. An interesting point was noted that the direct cost of treatment was lower in govt health facilities whereas the indirect cost was lower in private health

facilities. Regarding overall expenditure the direct cost of treatment was higher than the indirect cost. The expenditure incurred on investigations and buying medicines accounts for the major proportion of total direct expenditure. The maximum share of indirect cost goes to wage loss. The cost of treatment of an episode of illness among elderly was found to be highest. Majority of the population met their expenditure from savings and even a small percentage had to sell their assets. In view of these findings it is imperative to provide free drugs and diagnostics especially for the poor to reduce their OOP expenditure and to acheive the goal of Universal Health Coverage.

**Reference:**


1. Xu K, Leieve A. Coping with the out-of-pocket health payments: Empirical evidence from 15 African countries. WHO bulletin. [Internet].2008Nov; 86(11):849-856. Available from: file:///C:/Users/Welcome/Documents/Coping%20with%20out-of-pocket%20health%20payements_%20empirical%20evidence%20from%2015%20African%20countries.html DOI:10.2471/BLT.07.049403.
2. Rao G M, Choudhury M. Health care financing reforms in India. National Institute of Public Finance and Policy. Working paper no:2012- 100.March 2012.Available : http://www.researchgate.net/publication/241763971_Health_Care_Financing_Reforms_in_India.
3. Prinja S, Kaur M, Kumar R.Universal Health Insurance in India: Ensuring Equity, Efficiency, and Quality. Indian J of Community Medicine.2012; 37(3):p 142-149. doi:10.4103/0970-0218.99907.
4. Joe W. Distressed financing of household out-of-pocket health care payments in India: incidence and correlates. Health Policy and Planning. 2014; 30:p728-741. doi:10.1093/heapol/czu050.
5. Dror M D, Putten-Rademaker O van, Koren R. Cost of illness: Evidence from a study in five resource-poor locations in India. Indian J of Med res.2008 April; 127(4):p347-361.
6. Heijink R, Ke Xu, Saksena P, Evans D. Validity and Comparability of Out-of pocket Health Expenditure from Household Surveys: A review of the literature and current survey instruments; Discussion Paper Number 1 – 2011: World Health Organization, Geneva. Avaialble: www.who.int/health_financing/documents/dp_e_11_01-oop_errors.pdf.
7. National Health System Resource Centre (2016).National Health Accounts Estimates (2013-14). New Delhi: Ministry of Health and Welfare, Govt of India. p15
8. Gupta I, Chowdhury S, Prinja S, Trivedi M.Out-of-Pocket Spending on Out-Patient Care in India: Assessment and Options Based on Results from a District Level Survey. PLoS ONE 11(11):e0166775.doi:10.1371/journal.pone.0166775.
9. Mahal A, Karan A, Engelgau M. The Economic Implications of Non-Communicable Disease for India: Health, Nutrition and Population (HNP) Discussion Paper. Washington, DC, USA: World Bank; 2010. p1,41
10. National Health Policy 2017. Ministry of Health and Family welfare, Govt of India. New Delhi. Available: cdsco.nic.in/writereaddata/National-Health-Poilicy.pdf.
11. Morbidity, health care and condition of the aged, NSS 60th round. National Sample Survey Organisation, Ministry of Statistics and Programme Implementation; Government of India, March 2006New Delhi. P 20.
12. Balrajan Y, Selvaraj S, Subramanian SV. Health Care and Equity in India: Lancet 2011, Feb 5:377(9764):505-515.doi:10.1016/S0140-6736 (10)61894-6.
13. Prinja S, Kanavos P, Kumar R. Health care inequities in north India: role of public sector in universalizing health care. Indian J Med Res. Sept2012; 136: 421–31.
14. Willium J. Distressed financing of household out-of-pocket health care payments in India: incidence and correlates. Health Policy and Planning.2015; 30 p 728-741. doi:10.1093/heapol/czu050.
15. Key indicators of social consumption in India Health; NSS 71st round Jan-Jun 2014, Ministry of Statistics and Programme Implementation; Government of India, June2015New Delhi.