

ORIGINAL ARTICLE

Documenting catastrophic spending on health by migrant slum populationSaira Mehnaz¹, Ali Jafar Abedi², Shazia F Fazli³, Sakeena Mushfiq⁴, Zulfia Khan⁵, M Athar Ansari⁶¹Associate Professor, Department of Community Medicine, JN Medical College, Aligarh Muslim University, India,²Assistant Professor, Department of Community Medicine, JN Medical College, Aligarh Muslim University, India,³Assistant Professor, Department of Sociology, Aligarh Muslim University, India, ⁴Assistant Professor, Departmentof Public Health, College of Applied Medical Sciences, King Khalid University, Abha, KSA, ⁵Professor(Retd.),Department of Community Medicine, JN Medical College, Aligarh Muslim University, India, ⁶Professor,

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Source of Funding: ICMR, New Delhi **Conflict of Interest:** None declared**Article Cycle****Received:** 29/07/2019; **Revision:** 09/08/2019; **Accepted:** 19/08/2019; **Published:**30/09/2019This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).**Abstract**

Background: India ranks among the bottom five countries in public health spending. Out of pocket spending of households on healthcare is almost 70% of income and reimbursement in any form availed by households whose members are employed in the formal sector is negligible. **Objectives:** To determine the usual source of medical care opted for by the study population. To find out the illness pattern and its age/sex distribution in the study population. To find out the expenditure incurred on illness and its source of procurement by the study population.

Methodology: 52.42% urban Aligarh resides in slums. A cross sectional study was done to study the newer slum pockets. 3409 households with a population of 16,978 were studied with the help of pretested questionnaire; SPSS 20 was used for statistical analysis. **Results:** In our study, we found that almost all the households suffered from catastrophic health expenditure. The study population, which was already vulnerable owing to their low socio-economic and migrant status was further forced into poverty and indebtedness on account of expenditure on illness. **Conclusions:** National health financing systems should be designed to protect households from financial catastrophe, by reducing out-of-pocket spending.

Keywords

Out of pocket expenditure; New urban slums; Catastrophic health expenditure

Introduction

For a country to develop socially and economically one of the most important requirements is a healthy working population and a healthy dependent population. Investment in health of population makes good economic sense. Unfortunately, with a 6% of GDP spent on healthcare, India ranks among the bottom five countries in public health spending.

Infrastructure for Public Health System is poorly developed and inaccessible to a large section of the population, particularly in urban slum areas, due to various reasons (1). Out of pocket spending of households on healthcare is almost 70% of income and reimbursement in any form availed by households whose members are employed in the formal sector is minimal in India (2). This Burden can

cause “financial catastrophe” i.e. the out of pocket amount paid for healthcare in relation to a person’s income becomes very high (2,3).

Migrants often have a low socio-economic status with no access to social services, particularly the healthcare. This situation impedes the integration of migrants into the local population and makes them certain candidates for the “medical poverty trap”.

As most of the slum population is daily wagers, they prefer to go to a source where they can get treatment quickly and easily without losing their day’s wages, and that is why they prefer private practitioners and unqualified (quacks). However not many studies have been done to document the expenditure incurred on health by the newly migrated slum population, which is one of the most disadvantaged population group.

Aims & Objectives

- To determine the usual source of medical care opted for by the study population
- To find out the illness pattern and its age/sex distribution in the study population.
- To find out the expenditure incurred on illness and its source of procurement by the study population.

Material & Methods

Study Area: District Aligarh, is one of seventy-five districts in the State of Uttar Pradesh. Aligarh City is situated at a distance of 131 Km (81 Miles) from Delhi in the plains between the Ganges and the Yamuna rivers and has a population of 8, 74,408.

This study was carried out in Aligarh City. According to the District Urban Development Authority (DUDA), there are 128 registered slums with a total population of 3, 80,776 in the city and an unknown number of unregistered slums. As per DUDA, 52.42% (USAID-EHP URBAN HEALTH PROGRAM State of Urban Health in U.P.) of the urban population resides in slums. Over a period of time, some of the slums have developed into colonies. Additionally, many new slums have mushroomed.

Health services are provided by the Public sector and by the Private sector (hospitals, nursing homes, and clinics). In addition, as per the list provided by UNICEF, there are approximately 587 non-registered private doctors catering to a large urban slum population in the city.

Functional definition of migration and migrant: Those movements which resulted in change of the usual place of residence of the individuals were

treated as migration. A person whose last usual place of residence was different from the present place was considered as a migrant. Usual place of residence of a person was defined as a place (village/town) where the person had stayed continuously for a period of six months or more. Individuals and families who have migrated to urban areas and currently have been living in the urban slums/Jhuggi Jhopdi clusters/slum like temporary settlements/camps, etc. for a period of 30 days to 10 years are considered to be new migrants and are included in this study.

Catastrophic expenditure: Health expenditure has been defined as catastrophic if 5–20% of total household income is spent on health care (4, 5, 6, 7, 8).

Recent illness: We define recent illnesses as illnesses that affected people for more than a day in the past six months. Some of the ailments mentioned were cough, cold and fever, aches and pains, digestive problems and other minor ailments like dental problems and minor injuries of various kinds.

Chronic illness: There is no standard definition available for a chronic condition. It is generally defined as an illness or impairment that lasts for a long duration. The minimum time period for an illness to be considered chronic varies depending on the source of the definition: ranging from three months to one year. We considered the presence of a chronic condition as any illness for which treatment was continuing for more than one month from the time of interview. Illnesses mentioned included tuberculosis, hypertension, diabetes and chronic chest problems etc. Respondents usually reported cases where family members were prescribed regular medication by a healthcare provider but were unable to take the medication for various reasons. We recorded such instances as the presence of chronic conditions (9, 10).

The study proposal was approved by the Institutional Ethics Committee. Informed consent in the respondent’s own language was taken before eliciting information from each respondent. Those found in need of medical help were treated and referred appropriately.

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Study Type and Design: Single-stage cluster random sampling was used for selecting the migrant households. Households of eligible migrants (who have migrated and residing in the city for at least 10

years, but not lesser than 30 days) were identified from clusters in the city with the help of local authorities. Attempt was made to identify clusters from newer slums, de-notified slums and camps, where newcomers usually reside. Snow-balling technique was used during pilot survey for identifying this type of habitations.

Data collection Techniques: Consent was taken from the adult family member available for interview in the family identified. Purpose of study was explained and rapport established. In depth interview was conducted in a friendly manner. Confidentiality was assured. Data pertaining to socio-economic conditions, demographic details of family, and healthcare seeking behavior during illness of any family member was collected through pre-tested, interviewer-administered questionnaires.

The data was computerized and analyzed through SPSS 20. To summarize the quantitative data, descriptive statistics was used.

Sample Size: The required sample size was calculated according to the relative precision formula $n = z_{1-\alpha/2}^2(1-P)/\epsilon^2P$ (Lwanga and Lemeshow, 1991). By considering prevalence of utilization of government healthcare service (P) of 15% (This rate is based on an ongoing ICMR study in Delhi (Kusuma, personal communication) and it is considered as minimum rate.), allowing 10% error and P with the 95% confidence interval and a design effect of 1.7 the sample size was calculated as 3400. A total of 3409 households with a population of 16,978 were selected for the study.

Ethical Aspect: ethical clearance was taken from the Institutional ethics committee. Data was analyzed using SPSS 17.

Results & Discussion

The study was done in 3409 households with a total population of 16,978 residents. The main occupation of a majority of earning members of the families was daily wage laborers or rickshaw pullers having a mean income of Rs 1026 per month. Majority of women were home makers. (Figure 1)

The usual sources of medical care utilized by our study population were the local unqualified practitioner (quack-68.4%) or a qualified private practitioner/ facility (23.4%). (Figure 2)

The utilization of government health source was minimal (5.3%). One of the reasons for low utilization of government health facilities was because of long waiting time in government facilities leading to loss

of their daily wages. Most of slum population is daily wage laborer (70.1%) and they cannot afford to lose their wages for the sake of long waiting time in government facilities. There were other reasons for non-utilization like distance, behavior of health providers, and non-availability of free drugs. Similar results are quoted by other studies such as NFHS 3, which reports that even in the poorest quintile of city dwellers, the private medical sector is the primary source of health care for the majority of households of the slums of Delhi (70.8%), Meerut (93%), Kolkata (60.4%), Indore (70.1%), Mumbai (56.4%), Nagpur (75.6%) and Hyderabad (59.6%) (12). In another study, it has been reported that in New Delhi, government dispensaries are simply not available for 89% slums, forcing the slum dwellers to utilize private practitioners and unqualified quacks for medical care (13). Similarly, in a study from Pune, Banerjee et al (2012) documents that 74% slum dwellers in industrial townships surrounding the city sought treatment from private sources, while 25% of the people reported that the nearest government health facility was more than 5 km from their house. (14).

It is reported by Kamath (2007) that the vulnerable and the poor are hit severely by short-term ailments like cough, colds, fevers and pains. The report also claims that the poor generally ignore the ailments in the beginning, since a larger proportion of them are seen not taking any treatment. One of the reasons for this (as well as the lower reporting of such ailments among the vulnerable) was said to be the loss of work and wages, which affect the poor and vulnerable more than the higher income sections. The authors claim that that 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 (15). This finding is similar to the present study where the initial symptoms and signs of ill health are usually neglected until their health starts affecting their work and they are threatened with loss of work and wages.

15.9% of the population was found to be suffering from some form of illness at the time of interview. Respondents were asked about recent episodes of illness (within the last 6 months), any hospitalization during the last one year and presence of any chronic illness. At least one episode of recent illness (in the last six months) was reported in 81.9% of the

population covered, 10.4 % were hospitalized in the last one year and 7.7% were found to be chronically ill.

Maximum number of most recent episodes of illness were found in the age group of 0-20 years (59.8%) and 20-40 years (28.1%), most of the hospitalization was there in the age group of 20-40 years (47.1%) followed by 0-20 age group (31.6%). Maximum chronic illness was there in 30 to 50 years (47.4%) followed by more than 50 years (28%) (Table 1).

This pattern of illness depicts that the 20-30 and 30-40 year working hands are most affected by recent illnesses and hospitalization in the slum population. This further jeopardizes their regular income from daily jobs. Young population including children up to 20 years suffer most from episodes of recent illness, while the older population of 30 -40 and 40 to 50 years has more chronic illnesses. (Table 1)

No significant difference was found in the sex distribution of the type of illness. (Table 1)

The range of expenditure was related to the type of illness, whether recent, needing hospitalization, or chronic (Table 1). In a majority of episodes of recent illness, the expenditure was less than Rs. 1000 (78.3%), whereas in illnesses needing hospitalization it was up to Rs. 5000 in a majority of 39% and going up to Rs. 10,000 in 21.3% cases.

On further analysis of the families spending less than Rs. 1000 on illness out of the total earnings (Table 1) it was found that 97.9% of recent illness, 99% of chronic illness and 100% of hospitalization were showing an expenditure of more than 5–20% of total household income. As the mean income of the study population was found to be Rs.1026/ month, the out of pocket expenditure in all types of illness falls into catastrophic expenditure. Health expenditure has been defined as catastrophic if 5–20% of total household income is spent on health care. (4,5,6,7,8,11) Thus, in our study, almost all the households suffered from catastrophic health expenditure.

When people have to pay fees or co-payments for health care, the amount can be so high in relation to income that it results in “financial catastrophe” for the individual or the household. Such high expenditure can mean that people have to cut down on their daily requirements such as food and clothing and their children’s education becomes out of reach. Catastrophic health expenditure is not limited to slums in India. Every year, approximately 44 million households, or more than 150 million individuals

throughout the world face catastrophic expenditure, and about 25 million households or more than 100 million individuals are pushed into poverty by the need to pay for services (3).

Moreover, the impact of these out-of-pocket payments for health care goes beyond catastrophic spending alone. Many people may decide not to use services, simply because they cannot afford either the direct costs, such as for consultations, medicines and laboratory tests, or the indirect costs, such as for transport and special food. Poor households are likely to sink even further into poverty because of the adverse effects of illness on their earnings and general welfare (3).

Based on a household survey in peri-urban areas of Pune, it was found 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 was 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 (15).

In a study to assess catastrophic household expenditure on childhood illness in an Urban Slum in Bijapur, it was found that almost all the households suffered from catastrophic health expenditure (16). Looking at the source of procuring money for treatment, (Table I part D) it was seen that in case of recent illness most of the out of pocket spending was met from the current income of the household (64.5%) and from their savings (22.5), while 10.2% had to resort to borrowing. For hospitalization category maximum expenditure was done by borrowing money (33.9%) followed by use of current income (31.3) and savings (20.1%). A number of people had to sell items (4.6%) and ask for contributions from friends and relatives (7.8%). Maximum expenditure for chronic illness was done from the current income (53.2%), followed by savings (20.2%) and borrowing (20.6%) almost equally.

Several other studies from different parts of India also have similar findings. Thus, Similar to our study, Kamath (2007) reports the major source of funds for health emergencies had been borrowings from friends and relatives (39.8%) followed by drawing on own-savings (31.9%) (15).

As explained by Chaudhry in a case study of slums in Delhi, health care can be expensive. In the absence of insurance cover, households with severe and immediate medical needs can be forced to spend a large fraction of the household budget on health care. Such spending must be accommodated by cutting back on consumption of other goods and services by accumulating debt, by running down savings or by selling assets (2).

A study by T. R. Dilip and Ravi Duggal on incidence of non-fatal health outcomes and debt in urban India shows that current income had been used by 40 percent; and it contributed only 13 percent of the amount raised for treating an ailment. Past savings contributed to 37 percent of the expenditure. About 26 percent had to depend on borrowing and 5% on selling of physical assets. It is probable that the major share of amount spent by the poor comes from borrowings/ sale of assets, while major share of expenditure made by rich comes from past savings. Share of 'employers/other agencies' together was 3 percent for lowest quartile and 13 percent for the highest quartile group. The authors conclude that there is strong evidence to believe that expenditure on inpatient care treatment is pushing many households into debt. The average amount of debt was found to be higher if treatment was from private sector than if treatment was from public sector (17). An article from Orissa explains that catastrophic health expenditure has reinforced poverty and indebtedness among the urban poor. The determinants of out-of-pocket expenditure on health care at the household level show that living standard has a negative effect on it (18).

Conclusions:

Many of the young and working population suffered from recent episodes of illnesses and many needed hospitalizations in the last one year. Chronic illnesses were mostly present in middle and older age groups. There was no significant difference between the illness pattern in males and females.

The utilization of government health services (5.3%) was found to be very low in our study population. Most of the families utilized unqualified and qualified private practitioners.

In our study the out of pocket expenditure in all types of illness was in the category of catastrophic expenditure. Thus, the population which was already vulnerable owing to their low socio-economic and migrant status was further being pushed into

poverty and indebtedness on account of expenditure on illness.

Recommendations

There is need to improve the access and utilization of government health services for the urban poor, especially newly migrated population living in slums. In order to reduce out of pocket spending and to prevent catastrophic spending on health, National Health Financing Systems needs to be designed to allow people to access services when they are needed. In the long term, the aim should be to develop prepayment mechanisms, such as through social health insurance, tax-based financing of health care, or some mix of prepayment mechanisms (3).

Authors Contribution

All authors have contributed equally.

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Tables

TABLE 1 TYPES OF ILLNESSES AND THEIR ASSOCIATIONS (N=2701)

<i>Distribution according to</i>		Most recent episode (illness) in the last six months		Hospitalization in the last one year		Chronic Illness		Significance
		<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	
A	Age Group (years)							(p<0.05)
a	0-20	1322	59.8	89	31.6	22	10.6	
b	21-30	305	13.8	56	19.8	29	14	
c	31-40	317	14.3	77	27.3	50	24.2	
d	41-50	137	6.2	36	12.8	48	23.2	
e	>50	131	5.9	24	8.5	58	28	
	Total	2212	100	282	100.0	207	100.0	
B	Distribution according to sex							(p>0.05)
a	Male	1096	49.5	152	53.9	112	54.1	
b	Female	1116	50.6	130	46.1	95	45.9	
	Total	2212	100	282	100	207	100	
C.	Range of Expenditure (Money in rupees)							(p<0.05)
a	<1000	1732	78.3	45	16.0	188	90.8	
b	1000-5000	370	16.7	110	39.0	18	08.7	
c	5000-10000	58	2.6	60	21.3	01	00.5	
d	10000-15000	24	1.1	24	8.5	00	0.0	
e	15000-20000	15	0.7	19	6.7	00	0.0	
f	>20000	13	0.6	24	8.5	00	0.0	
	Total	2212	100	282	100.0	207	100.0	
D.	Source of procuring money spent on illness	N=8461		N=433		N=267		(p<0.05)
a	Current income of household member	5466	64.5	135	31.3	142	53.2	
b	Savings	1910	22.5	87	20.1	54	20.2	
c	Contributions (relatives and friends)	200	2.3	34	7.8	09	3.4	
d	Borrowed from others	860	10.2	147	33.9	55	20.6	
e	Reimbursed by employer	05	0.1	06	1.4	00	0.0	
f	Sold Items	20	0.2	20	4.6	06	2.2	
g	Service free of cost	05	0.1	01	0.2	00	0.0	
h	Others	25	0.2	03	0.7	01	0.4	
	Total*	8461	100	433	100.0	267	100.0	

Figures

FIGURE 1 USUAL SOURCE OF MEDICAL CARE

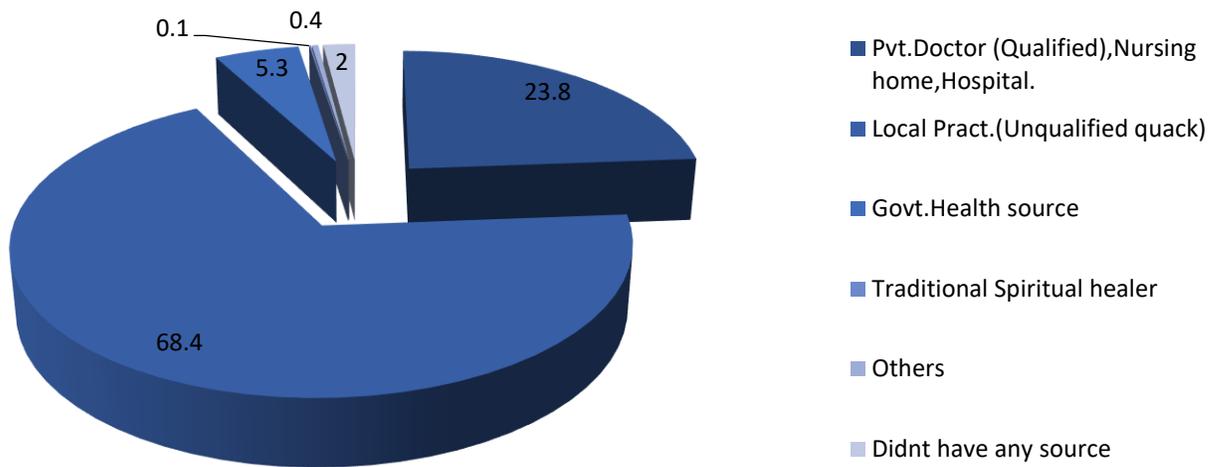


FIGURE 2 TYPES OF ILLNESSES (A) PRESENCE OF ILLNESS N=16,978 (B) ILLNESS PATTERN N=2701(15.9%)

