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Health Expenditure and Financial Coping Mechanisms
Survey

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Table of Contents

Executive Summary.....	4
Background:	6
Methodology.....	6
Findings	7
Selected demographic characteristics of the study population.....	7
Proportion of people ill and their healthcare seeking behavior:	8
Last four weeks illness	8
Hospitalization.....	9
Chronic illness.....	10
Cost of healthcare	11
Illness of last four weeks:.....	11
Hospitalization.....	12
Chronic illness:.....	13
Reason for not seeking healthcare.....	15
Health related shocks and coping mechanism:.....	16
Conclusion and recommendation:.....	16

List of Tables

Table 1: selected descriptive statistics of study participants.....	7
Table 2: Percent of people being ill and seeking treatment.....	8
Table 3: Type of illness suffered during last four weeks	8
Table 4: Reason for hospitalization	9
Table 5: Type of chronic illness reported	10
Table 6: Type of healthcare provider consulted for treatment of illness during last 4 weeks and chronic illness.....	10
Table 7: Type of healthcare facilities visited for hospitalization and treatment of last 4 weeks illness	11
Table 8: Average cost of treatment.....	13
Table 9: Average cost of treatment disaggregated	13
Table 10: Average hospitalization cost by type of facility	14
Table 10a: Average hospitalization cost by type of facility (excluding high cost treatment).....	14
Table 11: Method of payment for treatment.....	14
Table 12: Source of fund for hospital bill payment and illness during last four weeks preceding the survey.....	15
Table 13: Reason for not seeking care.....	15
Table 14: Effect of health related shocks on household expenses.....	16

List of Figure

Figure 1: Share of various types of expenses in total expenditure for illness during last 4 weeks	12
Figure 2: Share of various types of expenses in total expenditure for hospitalization.....	13

Executive Summary

In Bangladesh, out-of-pocket (OOP) health expenditure constitutes around 63% of total health expenditure. The burden of OOP falls hard on the poor and disadvantaged people and it has been estimated that around 3% of the population in Bangladesh is pushed under the poverty line as a result of catastrophic healthcare cost. Although there is data on national level health expenditure in Bangladesh, information on healthcare expenditure in the urban areas, particularly in urban slums is not available. With this in mind ICDDR,B with the financial support from the Urban Primary Health Care Services Delivery Project (UPHCSDP) initiated a health expenditure survey in the selected urban slums of Dhaka which aimed at collecting data on individual's treatment related expenditure and information on the various financial coping mechanism people adopt while facing health related financial shocks. To carry out the survey, a random sample of 1200 households was selected from the 30,000 households under the urban DSS area of Dhaka city. Excluding migrated out households and absent households, finally data were collected from 1023 households. A cross sectional survey was carried out during May – June 2016 to collect information from all the household members within the sample.

Some highlights of the findings are presented below:

- *Illness within last four weeks preceding the survey:* 40.4% out of 4203 study participants reported experiencing illness during the four weeks preceding survey. Among those ill 93.1% sought some sort of care. Majority (66.4%) went to unqualified/informal healthcare providers. Only 28% went to qualified (i.e. MBBS) medical doctors. The rest of healthcare provider choice was a combination of traditional healthcare providers, homeopathic doctors, paramedics, religious healers and home treatment. Seventy four percent of the patients took healthcare from pharmacies and only 6.4% went to public sector facilities. Use of UPHCSDP supported clinics was very low at around 0.5% in areas where they provide services.
- *Hospitalization:* Only 2.6% got admitted to the hospital in the last 6 months before the survey for a variety of reasons (19.1% for infectious and parasitic disease; 17.3% for pregnancy and child birth; 15.5% for injury and accident; 10.9% for gastro-intestinal tract disease; 7.3% for neurological disease; 5.5% for musculoskeletal disease; 4.6 for cardiovascular disease and rests for other reasons). Around a third (31.8%) of the patients chose public hospitals and the rest of the two thirds were admitted into private hospitals or NGO clinics.
- *Chronic Illness:* 23.6% of the individuals suffered from chronic illness out of which 93% sought care for their illness. With chronic illness cases, most (49.7%) consulted MBBS doctors. Dyspepsia was reported to be the most common chronic illness (49.2% of all responses). Fifteen percent reported to have blood pressure. The other notable chronic illnesses were arthritis, diabetes, asthma, TB, heart disease, kidney disease and cancer.
- *Cost of healthcare:*
The average cost of treatment for illness of last four weeks was found to be BDT 736.58 with medicine accounting for the largest share (57.7%) in the total cost, followed by diagnostic (10.4%) and consultation (8.1%). Cost of treatment at a public health facility was about 2 times the cost of treatment at a private health facility. Most paid the treatment cost in cash (96%) and some paid in installments (4.7%).

The average cost of hospitalization was BDT 17314.25 for patients getting admitted to hospitals during the last 6 months. Again, medicine covered major share of the cost (35%), followed by room rent (24%) and diagnostics tests (21.3%). Costs at private hospitals were 25% higher than public hospitals. Most (97%) paid hospital bills in cash, 3.7% paid in installments. About 1.8% got fees waived. More than half of the patients had to borrow money to pay these bills. Fifteen percent received donation from friends and family. And 1% had to sell assets to pay for hospital costs.

- *Reason for not seeking care:*The major reason for those patients who did not seek healthcare was lack of funds. 64% of the patients suffering from illness in last 4 weeks reported not seeking care due to lack of money.
- *Health related shock and coping mechanism:* 15.1% of the household heads reported experiencing health related shocks. Out of this, majority (49.3%) reported that the health related shock led to a fall in income. More the one- third (36.1%) reported a fall in food consumption as a result of the shock. 10% had to sell assets to cope with the shock.

The following recommendations are being made based on the findings presented in this report:

1. Use of public healthcare services must be increased to ensure access to quality care. The available local public sector facilities need to be popularized among the slum dwellers. Wider publicity of the facilities and the available services could help in this regard.
2. The reason behind the low level of use of public sector health facilities in the slum areas need to be understood more explicitly. An indepth qualitative study need to be carried out to understand the reasons behind the low level of utilization of the public healthcare centres including those supported by the urban primary healthcare service delivery project.
3. An insurance mechanism to pool the risk of illhealth among the slum dwellers could help to shield the slum dwellers from the health related financial shocks and being pushed further into poverty. The different cooperative groups that are existing within the community can be leveraged to arrange a mandatory health insurance scheme that is partially supported by the government. A pilot trial of such a scheme can hint towards its effectiveness in terms of providing financial risk protection for urban slum dwellers.
4. A Non-communicable disease (NCD) or chronic disease management centre could be established to help patients in slum areas manage their illness in time and reduce the burden of illness and its related expenses. Side by side, a lifestyle modification package including suggestion on food habit, physical activity etc. can be designed to assist people at risk of developing NCDs. Forming peer groups and implementing the package among them could be useful.

Background:

In Bangladesh, out-of-pocket (OOP) health expenditure is one of the highest in the world constituting around 64% of total health expenditure. Catastrophic health expenditures even push people under the poverty line. It has been estimated that round 3% of the population in Bangladesh is pushed under the poverty line as a result of catastrophic healthcare cost. The high burden of OOP falls hard on the poor and disadvantaged people. With rapid urbanization the health and healthcare issues of urban population, particularly of those living in the urban slums are of great importance in this regard. The people living in the urban slum are faced with varied challenges including access to healthcare and its affordability. Keeping this in mind ICDDR,B with support from the Urban Primary Health Care Services Delivery Project initiated a health expenditure survey in the urban slums of Dhaka which aimed at collecting data on individual's treatment related expenditure. The expenditures in this report are shown according to the type of healthcare need, i.e. out-patient or in-patient services. The average monthly expenditure of people on chronic illnesses is also reported here. In addition to the expenditure data, the survey also collected information on the varied coping mechanism people adopt while facing health related shocks. The accompanying demographic and socio-economic data assists in investigating the equity aspect of healthcare expenditure. It should be mentioned that all results presented in this report are based on preliminary analysis of the data which is subject to change.

Methodology

Study area: The study area covered 5 slum areas of Dhaka and Gazipur city corporation: Korail, Gazipur-Tongi, Mirpur, Shayampur, Dhalpur.

Sample size and study period: In order to collect information on healthcare related cost incurred by individuals living in the urban slums of Dhaka city, a total of 1200 households were randomly chosen from the 30,000 households under the urban DSS area. Among these 1200 households 119 households migrated out and another 8 were absent and finally data were collected from 1023 households.

Respondents: Data were collected from household heads or an adult responsible household member who were able to provide information for the whole household. In case of children, their mothers provided the information.

Data collection, supervision and data analysis: A Cross sectional survey was carried out to collect information from all household members included in the sample. The survey was carried out during May-June 2016. In total, 16 data collectors with a minimum of 12 years of schooling carried out the data collection. Three (3) experienced supervisors supervised the team.

Data were collected using using Table (Samsung Galaxy Table 4 SM-T231). To detect any anomalies in the data, the supervisors re-visited 5% of the households (chosen randomly) within 2 days of data collection by the Field Workers. Later on, the supervisors and the relevant Field Workers together sorted out any inconsistencies remaining in the collected data. Data analysis was done using STATA 13.1(v).

Definition of variables:

Household: A household is defined as a unit comprising a single individual or a group of related or unrelated individuals who live in the same compound and share food from common cooking pot and can identify one member as head of the household. Individuals who live outside the household but spend at least one night every month at the household are also considered as members of the household.

Health related shock: Health related shock was defined as healthcare related expenditure that had created financial stress on households in terms of reduced income from workdays lost, difficulty in paying for food expenses, selling of assets to fund healthcare and the like.

Findings

Selected demographic characteristics of the study population

Among the study participants, there was almost an equal gender-distribution (49% males vs. 51% females). Majority of the population (59.6%) were from the active age group of 18-60 years. Share of under-five children was around 11% where as the proportion of aged population (60+) was only around 4%. The average age of the population was 25.7 years. Around 52% of the households have 3-4 members and 34.6% of the households were found to have 5 or more members. The average household size was 4.1. around 74% of the population aged 15 years or more were married and 18% of the population were not married (Table 1).

Table 1: selected descriptive statistics of study participants

Variables	Category	% (n)
Sex (n=4203)	Male	48.92 (2056)
	Female	51.06 (2146)
	Transgender	0.02 (1)
Age category (n=4133)	0-5	11.32 (468)
	6-10	11.20 (463)
	11-17	14.15 (585)
	18-60	59.62 (2464)
	60+	3.7(153)

Household size category	1-2	13.49 (138)
	3-4	51.91 (531)
	5+	34.60 (354)
Marital status (among 15+ aged population) (n=2873)	Currently Married	74.2 (2135)
	Separated	2.1 (61)
	Divorced	0.8 (24)
	Widowed	5.2 (150)
	Unmarried	17.6 (506)

Proportion of people ill and their healthcare seeking behavior:

Last four weeks illness

40.4% out of the 4203 study participants reported experiencing illness during the 4 weeks preceding the survey (Table 2). Most common illness people suffered from during the last four weeks preceding the survey was Infectious and parasitic disease (44.3%), followed by respiratory tract disease (20.7%), musculoskeletal disease (13.7%), and gastro-intestinal tract disease (6.9%) (Table 3). Almost all of the patients (93.3%) sought some care, be it self-treatment, home remedy or treatment from a healthcare provider. However, only 28% sought healthcare from a qualified healthcare provider (Table6). Another 66% sought treatment from unqualified or informal healthcare providers practicing modern medicine. Interestingly, 74% of the patients reported that they had sought care from local drug stores/pharmacies. Only 6.2% of the patients went to public health facilities for seeking care (Table 7). The use of UPHCSDP supported facilities was low at around 0.5% in areas where they provide services.

Table 2: Percent of people being ill and seeking treatment

	% (n)
Individual sick in last four weeks	40.4(4,203)
Individual seeking healthcare for sickness in last four weeks	93.3(1,695)
Individual getting admitted to hospital during last 6 months	2.6 (4,203)
Individual with chronic illness	23.6(4,199)
Individual with chronic illness seeking care	93.3(992)
Household experiencing health related shock	15.1 (1,000)

Table 3: Type of illness suffered during last four weeks

Disease category	%
Infectious and parasitic disease	44.3
Respiratory tract disease	20.7

Musculoskeletal disease	13.7
Gastro-intestinal tract disease	6.9
Skin and soft tissue disease	1.8
Injury and accident	1.2
Kidney and urinary disease	1.1
Cardiovascular disease	0.6
Pregnancy and child birth	0.4
Eye problem	0.4
Neoplasm/cancer	0.2
Other	8.2
Total number of patients	1698

Hospitalization

Only 2.6% of the population got admitted to a hospital in the last 6 months preceding the survey (Table 2). Average night stay was 6.5 night among the 110 patients getting hospitalized. Around 19.1% of the cases were hospitalized to treat Infectious and parasitic disease. Pregnancy and childbirth were the reason for 17.3% of the cases. About fifteen percent cases were injury and accidental and another 10.9% were hospitalized to treat gastro-intestinal tract disease. 7.3% of the cases got admitted to treat neoplasm/cancer. 4.6% of the cases were cardiovascular disease related (Table 4). It is worth noting that public hospitals treat comparatively higher share of complicated cases as seen by the fact that all cancer patients availed services from public facilities. Similarly the share of treatment for accident and injury and kidney disease was higher in case of public facilities (Table 4). All these have significant cost implications. In total, around one-third of the cases (32%) were admitted into public hospitals and about 1.6% were admitted to facilities supported by UPHCSDP (in areas where they provide services) and the rest were admitted into private hospitals or NGO clinics (Table 7).

Table 4: Reason for hospitalization

Disease category	Sector			All (%)
	Public (%)	Private (%)	NGO (%)	
Infectious and parasitic disease	8.6	10.0	80.0	19.1
Pregnancy and child birth	2.9	26.7	13.3	17.3
Injury and accident	20.0	15.0	6.7	15.5
Gastro-intestinal tract disease	11.4	13.3	0.0	10.9
Neurological disease	8.6	8.3	0.0	7.3
Musculoskeletal disease	8.6	5.0	0.0	5.5
Cardiovascular disease	5.7	5.0	0.0	4.6
Kidney and urinary disease	5.7	3.3	0.0	3.6
Eye problem	2.9	5.0	0.0	3.6
Neoplasm/cancer	8.6	0.0	0.0	2.7
Respiratory tract disease	5.7	1.7	0.0	2.7
Mental and behavioural disorder	0.0	1.7	0.0	0.9

Others	11.3	5.0	0.0	6.3
Total number of patients	35	60	15	110

Chronic illness

23.6 of the population reported suffering from a chronic illness. Around 93% of them sought care for their illness (Table 2). A higher proportion of population, around 50%, went for treatment from formal, qualified doctors (MBBS) as compared to when they seek care for acute illnesses (Table 6). Dyspepsia, commonly known as gastric/ulcer among the slum, came out to be the most common chronic illness reported (78.3%). 24% reported high blood pressure. 16.4% reported suffering from arthritis and another 12.1% from diabetes. Asthma was next with 10.3% people suffering (Table 5). Information on place of seeking care was not collected as in case of chronic illness people may choose different sources for different episodes.

Table 5: Type of chronic illness reported

Type of illness	% (n=992)
Dyspepsia	78.3
Blood pressure	23.9
Arthritis	16.4
Diabetes	12.1
Asthma	10.3
Heart disease	8.0
Kidney disease	3.3
TB	2.2
Piles	1.5
Epilepsy	1.5
Mental Problem	1.0
Cancer	0.7

Table 6: Type of healthcare provider consulted for treatment of illness during last 4 weeks and chronic illness

Type of provider	Last 4 weeks sickness % (n=1582) Q36	Chronic illness % (n=926) Q54
MBBS	28.1	50.4
Informal/unqualified healthcare providers	66.1	45.5
Kabiraj/traditional healthcare providers	1.3	0.6
Homeopath	2.7	0.7
Paramedic/SACMO/BDS/MA	1.1	1.6
Religious healer	0.2	0.1
Home treatment	0.6	2.5

Table 7: Type of healthcare facilities visited for hospitalization and treatment of last 4 weeks illness

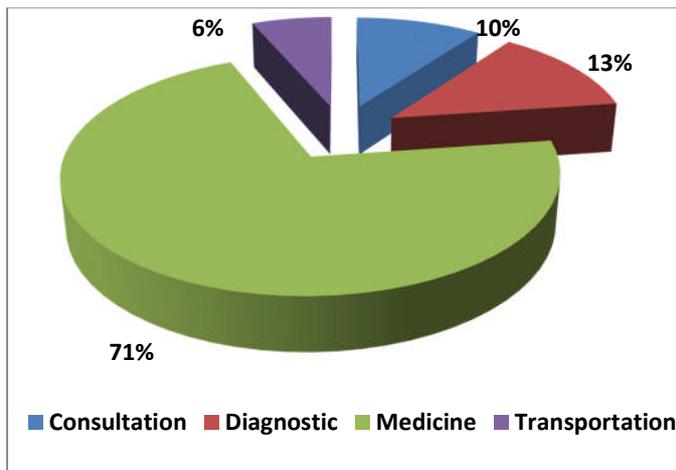
	Hospital Q3 % (n=110)	Last four weeks illness Q37 % (n=1602)
Public sector	31.8	6.2
Private sector	54.6	16.4
NGO Sector	12.7	1.6
NGO facility supported by UPHCSD	0.9 (1.6 in coverage area)	0.2 (0.5 in coverage area)
Pharmacy		74.0
Traditional practitioners place		1.5
Tele medicine/Phone		0.1

Cost of healthcare

Illness of last four weeks:

Average cost of treatment for illness of last four weeks preceding the survey was found to be BDT 736.58 (Table 8). Medicine accounted for the largest share in total cost, amounting to 71% of the cost, followed by diagnostic 13% and consultation 10%. Transportation accounted for 6% of the cost (figure 1, Table 9). Cost of treatment was higher in the public health facilities compared to the private health facilities. The average cost of treating at a public health facility was almost double the cost at private health facility. Most of the patients paid the treatment cost in cash (around 96%). 4.7% of the patients paid them in installments. 1% of the patients were exempted from payment and only 0.1% had insurance coverage to pay for the health expenditure (Table11). 86% of the patients paid the medical bill with their own money while 9.6% paid off the bill by borrowing from someone (Table 12).

Figure 1: Share of various types of expenses in total expenditure for illness during last 4 weeks

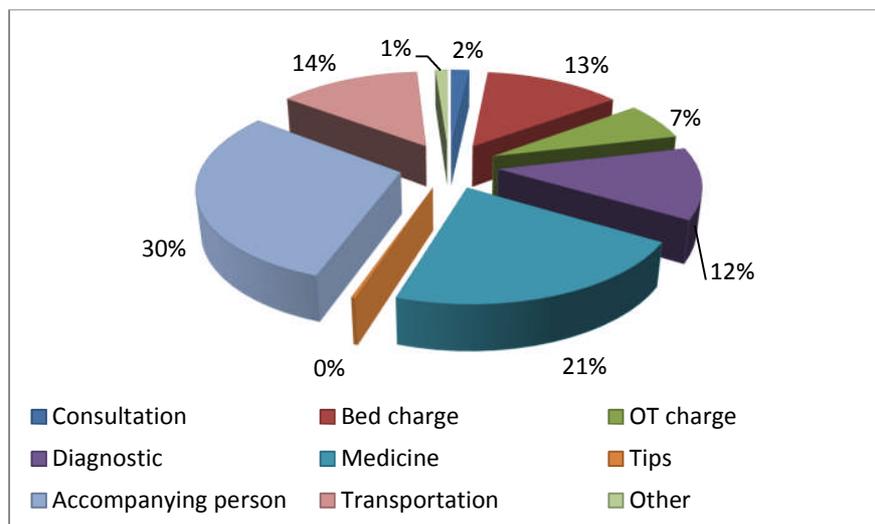


Hospitalization

The average cost of hospitalization came to BDT 17,314 for patients getting admitted in hospital during the last 6 months preceding the survey (Table 8). This amount comes down to BDT 14,203 when we disregard some high expense treatment like treatment for cancer and kidney diseases. In terms of collecting cost data for hospitalization many patients were not able to disaggregate information according to how much it cost them for OT charge, Bed charge, medicine, consultation, diagnostics etc. Thus getting a complete picture of average cost for all these were not possible. From the data that are available it shows that a major portion of the expenses is spent on paying for the person who accompanies the patient. Infact this cost was highest around 30% of the total expenses and the expenses for medicine followed with a 21% share. Bed charge and diagnostic costs were next with 13% and 12% share respectively (figure 2). The cost of hospitalization varied between private and public hospitals with the cost in private hospital/clinics being around 30% lower than public hospitals (Table 10). However, when we disregard the high expense treatment costs, the average hospitalization cost for public facilities comes lower than the private facilities (Table 10a). It is a common phenomenon in the existing health systems structure of Bangladesh that the most complicated and critical cases are handled at the public health facilities.

When asked the mode of payment for hospital bills it was found that 94% of the patients paid the hospital bills in cash and 3.5% paid in installments. Around 1.8% of the patients received waiver of fees. No insurance coverage was seen for any of the patients (Table 11). When exploring the source of fund it was found that 38% of the patients had to borrow money to pay for the hospital bills. 10.4% received donation from relatives and friends. For 0.6% of the patients, they had to sell assets to pay for the hospital costs (Table 12).

Figure 2: Share of various types of expenses in total expenditure for hospitalization



Chronic illness:

For chronic illness information was collected on average monthly cost for treating chronic illness. Data shows that on average the chronic patients in the slums spend BDT 538 per month (Table 8).

Table 8: Average cost of treatment

Cost	BDT /patient
Average cost of hospitalization (n=110)	17,314.25
Average cost of hospitalization (excluding cancer and kidney disease cases n=103)	14,203.39
Average cost of treating last four weeks sickness (n=1602)	736.58
Average monthly cost for chronic illness (n=926)	538.23

Table 9: Average cost of treatment disaggregated

	Hospitalization cost(BDT) (n=110)	Treatment cost of last four weeks sickness (BDT) (n=1602)
Consultation	49.0	59.5
Bed charge	369.1	
OT charge	181.8	
Medicine	603.2	428.5

Diagnostic	344.2	77.5
Transport	380.5	21.9
Tips/ Other	7.7	17.8
Accompanying person	848.4	

Table 10: Average hospitalization cost by type of facility

Facility type	Average hospitalization cost in BDT (n=110)	Treatment cost of last four weeks sickness in BDT (n=1602)
Public (36)	22,889.4	1271.7
Private (n=60)	17,504.0	616.22
NGO facility (n=14)	2,622.0	683.6

Table 10a: Average hospitalization cost by type of facility (excluding high cost treatment)

Facility type	Average hospitalization cost in BDT (n=103)
Public (n=31)	12,792.57
Private (n=58)	17,938.97
NGO (n=14)	2622
Total (n=103)	14,209.39

Table 11: Method of payment for treatment

	Hospitalization % (number of responses)	Last four weeks illness % (n=1602)
Cash	93.9 (107)	95.7
Waived/exempted	1.8 (2)	0.9
Paid in kind	0	0.6
Installment/credit	3.5 (4)	4.7
Insurance	0	0.1
Others	0.9 (1)	0.7
Total	100 (114)	

*Multiple responses were recorded

Table 12: Source of fund for hospital bill payment and illness during last four weeks preceding the survey

	Hospitalization % (number of response)	Last four weeks illness % (number of response)
Own cash	48.6 (79)	86 (1453)
Borrowed money	38 (62)	9.6 (162)
Sold assets	0.6 (1)	
Donation (friend, relatives)	10.4 (17)	1.5 (26)
Insurance	0.0	0.2 (4)
Others	0.6 (1)	1.6 (27)
Was exempted	1.8 (3)	1 (17)
Total	100 (163)	100 (1689)

Reason for not seeking healthcare

For acute illness, i.e. for illness during the last 4 weeks lack of money was the major reason (64%) for not seeking care followed by illness not being serious or people not feeling the need for it (22.5%).

Although 176 individuals reported the need for hospitalization during the 6 months preceding the survey, only around 62% got admitted. The survey explored reasons for not getting hospitalized even though the patient felt the need to. The answers were multiple response. Majority of the responses were (45.4 %) lack of money. The other responses included health facility being far away from home (2.3%), lack of people to accompany patient (11.6%), 7.0% of the responses were fear of hospital. 4.6% of the responses were not getting leave from work and in 8.0% responses the doctor at the hospital did not feel it was necessary (Table 13).

For chronic illness patients, majority did not think their illness was serious enough to be treated (56.8%). However, 25% patients could not seek care due to lack of funds (table 13).

Table 13: Reason for not seeking care

Reasons	Hospitalization	Last four weeks illness	Chronic illness
	% (number of responses)	% (number of responses)	% (number of responses)
Illness not serious		22.5 (25)	56.8 (46)
Lack of money	45.4 (39)	64.0 (71)	
Cannot afford			24.7 (20)
Its normal in old age			1.2 (1)

Treatment is not beneficial			1.2 (1)
Poor quality of service			1.2 (1)
Did not know who to consult		0.0	1.2 (1)
Did not feel it was necessary	12.8 (11)		
Distance to health facility	2.3 (2)	1.8 (2)	0.0
No accompanying person	11.6 (10)	.9 (1)	0.0
Fear of hospital	7.0 (6)	0.0	
Others	20.9 (19)	10.8 (12)	13.58 (11)
Doctor did not admit	8 (7)		
Did not get sick leave	4.6 (4)		
Total	100 (87)		

Health related shocks and coping mechanism:

151 household heads out of the total 1,023 (15.1%) reported experiencing health related shocks. Health related shock was defined as healthcare related expenditure that had created financial stress on households in terms of reduced income from workdays lost, difficulty in paying for food expenses, selling of assets to fund healthcare and the like.

The answers were multiple response and 49.3% of the responses were for facing a fall in income, 36.1% were for problem in buying food for the households and 10.9% were for selling assets and another 3.6% responses were for facing other difficulties as a result of the financial shock resulting from illness. Other responses included cutting down on additional expenses which were not deemed necessary (like entertainment expenses), borrowing or taking out loans from NGO savings programs (Table 14).

Table 14: Effect of health related shocks on household expenses

Effect of shock	% (responses)
Fall in income	49.3 (135)
Selling asset	10.9 (30)
Problem in buying food	36.1 (99)
Other difficulties	3.6 (10)
Total	100 (274)

Conclusion and recommendation:

The study findings shed light on some very important aspects of healthcare seeking behavior and related healthcare expenditure of slum dwellers in Dhaka and Gazipur city corporations.

The use of qualified care, i.e. service from MBBS doctors, was comparatively low among patients from slum areas. It was lowest for treating acute illnesses (28%) which were reported for the period of four weeks preceding the survey. The percentage of treatment from qualified doctors was comparatively higher (49.7%) while treating chronic illnesses. On the other hand, people accessed healthcare service from private facilities more than the public facilities. Local drug stores played a significant role in providing healthcare for acute illnesses (74%) which again is a matter of concern as these drug stores sell prescription drugs without consulting any formally qualified doctors. The drug sellers themselves provide the drugs to the patients which can lead to dangerous outcomes resulting from irrational or inappropriate use of drugs.

While looking into the healthcare expenditures, it was observed that people spend a good amount of money out-of-pocket to avail healthcare. For acute illness average healthcare expenditure was found to be around BDT 634 whereas for chronic illness the average monthly cost came to BDT 538. For hospitalization the average per patient expenditure was around BDT 17,314 when all cases were included. However, the figure comes down to BDT14,209 when we disregard the high cost treatments like treatment for cancer and kidney diseases. What is striking is that despite spending such high amount for healthcare out-of-pocket people end up receiving poor or questionable quality of care from providers who are not formally trained to provide healthcare.

For those who required healthcare but could not avail it, the major reason was lack of money to pay for healthcare. Further, the high OOP also resulted in health related shocks for households in terms of lowering their income, food expenses, selling of assets and cutting down on other household expenses. At a time when the global development leaders are setting target to achieve universal health coverage under the sustainable development goal targets and ensure no one is denied healthcare for lack of money or no one is faced with financial hardship while paying for healthcare, these findings are alarming and demands actions at the grass roots level.

The following recommendations are being made based on the findings presented in this report:

1. Use of public healthcare services must be increased to ensure access to quality care. The available local public sector facilities need to be popularized among the slum dwellers. Wider publicity of the facilities and the available services could help in this regard.
2. The reason behind the low level of use of public sector health facilities in the slum areas need to be understood more explicitly. An indepth qualitative study need to be carried out to understand the reasons behind the low level of utilization of the public healthcare centres including those supported by the urban primary healthcare service delivery project.

3. An insurance mechanism to pool the risk of illhealth among the slum dwellers could help to shield the slum dwellers from the health related financial shocks and being pushed further into poverty. The different cooperative groups that are existing within the community can be leveraged to arrange a mandatory health insurance scheme that is partially supported by the government. A pilot trial of such a scheme can hint towards its effectiveness in terms of providing financial risk protection for urban slum dwellers.
4. A Non-communicable disease (NCD) or chronic disease management centre could be established to help patients in slum areas manage their illness in time and reduce the burden of illness and its related expenses. Side by side, a lifestyle modification package including suggestion on food habit, physical activity etc. can be designed to assist people at risk of developing NCDs. Forming peer groups and implementing the package among them could be useful.