Original Article

OUT-OF-POCKET EXPENDITURES OF THE INJURED PATIENTS ADMITTED IN CASUALTY UNIT OF CMCH

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ABSTRACT

Background: Cost of treatment is a major concern in Bangladesh, as well as in many other lower- and middle-income countries and more than half of treatment cost is beard by the patient's family which is out-of-pocket expenditures. The casualty unit of a hospital is the ultimate place for moderate to severely injured patients.

Methods: A hospital-based cross-sectional study was commenced to estimate the out-of-pocket expenditures (OPE) incurred by the injured patients among 140 admitted injured patients. Data were collected by face-to-face interview through a pretested semi-structured questionnaire.

Results: The mean age was 33.3±12.8 years and most of the patients (46.0%) resided in urban areas. The mean monthly family income was 26242.9±12698.9 taka. The majority of the patients had a single wound (71.4%), which was simple hurt (78.6%) in grading. The mean of the total direct costs was 8,936.5±9,437.7 taka and the mean of the total indirect cost was 2,057.0±3,189.9 taka. The mean of total OPE was 10,993.5±11,126.9 taka. Patient's sex, residence and their grade of injuries ($p<0.05$) were statistically significant with total OPE by the patients.

Conclusion: This study provided some insight into the OPE in the casualty unit of CMCH. Proper referral system and implementation of health insurance can reduce the OPE burden. This study might help developing strategies in hospital settings.

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INTRODUCTION

Out-of-pocket expenditure (OPE) is the direct expenses of families, including gratuities and in-kind payments, to health practitioners and suppliers of medicines, therapeutic appliances, and other goods which contribute to the enhancement of health status. It also includes transport costs for accessing healthcare and over-the-counter medicines and supplies, but does not include pre-paid fees for health-related taxes or insurance.[1] The healthcare expenditures are mostly impulsive and have a negative impact on poor individuals. A moderate to severe injury may impose unexpected and unforeseen healthcare related vulnerabilities, increased indebtedness due to income loss, and even employment.[2] Thus, consequently impacts one's living standards and further welfare loss.[3] The casualty unit of government hospitals is the final destination for accidental and physical assault cases.

According to a survey, 1 in 10 dollars spent on healthcare services cover costs for treating conditions related to accidents and injuries.[4] The healthcare cost for both public and private hospitals is a huge financial burden on individuals in low- and middle-income countries.[5]

The WHO's Universal Health Coverage emphasizes the need to reduce individuals' out-of-pocket expenses.[6] In Bangladesh, 63.0% of the medical expenses are beard by the patient in 2010,[7] and it became 72.68% in 2019.[8] This cost of services in private health facilities is unaffordable or difficult to afford for most people.[9] To achieve universal health coverage, Bangladesh still needs to work on the health-care financing strategy, have to generate new resources for health, ensure efficient and equitable utilization of resources, and utilization of financial risk protection.[10]

METHODS

This was a hospital-based cross-sectional study conducted to estimate the out-of-pocket expenditures (OPE) incurred by the injured patients admitted in the casualty unit of Chittagong Medical College Hospital (CMCH). Data were collected from the 140 patients admitted to the casualty unit of CMCH through a pretested semi-structured questionnaire. Participants were interviewed face-to-face according to their convenience from January 2018 to December 2018. The data were checked and cleaned followed by making a template, categorizing data, coding and recoding into IBM SPSS v23. The analysis was carried out by using both descriptive and inferential statistics and presented with frequency tables and charts. All associations were considered significant at a $p<0.05$ level. Informed written consent was obtained from each participant. Confidentiality of data was ensured and unauthorized access to data was not allowed. Ethical approval was obtained from the Institutional Review Board (IRB) of the National Institute of Preventive and Social Medicine (NIPSOM), Dhaka 1212, Bangladesh. (NIPSOM/IRB/2018/471)

RESULTS

A total of 140 admitted patients were interviewed in the casualty unit. Table 1 depicts the socio-demographic characteristics of the patients. The mean age was 33.3±12.8 years and above half of the patients (53.5%) were less than 30 years of age. The four-fifths of the patients (79.0%) were male and two-thirds of the patients (66.4%) were married. Maximum (31.4%) of the patients had completed their primary education while a few of them were illiterate (7.1%). Most of the patients (46.0%) resided in urban areas. The mean monthly family income was 26242.9±12698.9 taka and nearly two-thirds of the families (62.8%) had monthly income of 15,001-30,000 taka.

Table 1: Socio-demographic characteristics of the respondents (n=140)

Characteristics		Frequency (n)	Percentage (%)
Age (years)	≤20	23	16.4
	21-30	52	37.1
	31-40	25	17.9
	41-50	30	21.4
	>50	10	7.1
	Mean±SD	33.3±12.8	
Sex	Male	110	79.0
	Female	30	21.0
Marital status	Married	93	66.4
	Unmarried	47	33.6
Level of education	Illiterate	10	7.1
	Primary	44	31.4
	Secondary	42	30.0
	Higher secondary	35	25.0
	Graduation and above	9	6.4
Residence	Urban	65	46.4
	Rural	54	38.4
	Coastal	16	11.4
	Hill tracts	5	3.5

Monthly family income (Taka)	≤15000	25	17.9
	15,001-30,000	88	62.8
	>30,000	27	19.3
	Mean±SD		26242.9±12698.9

Table 2 describes the pattern of injuries among the respondents. The majority of the patients had single wound (71.4%), which was simple hurt (78.6%) in grading. The mostly occurred incidences mode was road traffic accident (40%) and injuries by blunt weapon (24.3%).

Table 2: Pattern of injuries (n=140)

Characteristics		Frequency (n)	Percentage (%)
Number of wound	Single	100	71.4
	Multiple	40	28.6
Grade of injuries	Simple hurt	110	78.6
	Grievous hurt	30	21.4
Mode of injuries	Road traffic accidents	56	40.0
	Blunt weapon	34	24.3
	Stab	18	12.9
	Fall from height	20	14.3
	Gunshot	5	3.6
	Others (Multiple, burn etc.)	6	6.3

Table 3 demonstrates the expenditures detail which was spent for the management of injuries. The mean of the total direct cost was 8,936.5±9,437.7 taka; where the mean of total medical cost was 6,318.6±7,273.9 taka and the total non-medical cost was 4,674.9±5,140.8 taka. The mean total indirect cost was 2,057.0±3,189.9 taka. The mean total OPE was 10,993.5±11,126.9 taka.

Table 3: Respondent's total out-of-pocket expenditures

Type of cost		Mean	±SD
Direct cost			
Medical cost (Taka)	Investigations in CMCH lab (n=119)	618.2	552.9
	Investigations outside CMCH lab (n=26)	2,717.3	2,621.2
	Operation (n=67)	3,996.3	2,912.5
	Drugs (n=140)	3,012.2	3,920.4
	Dressing (n=59)	448.8	1,114.9
	Blood transfusion (n=24)	1,018.8	1,093.0
	Total medical cost (Taka)	6,318.6	7,273.9
Non-medical cost (Taka)	Foods (n=114)	868.8	1,004.1
	Travel cost to come hospital (n=140)	1,402.9	2,019.9
	Travel cost during return from hospital (n=140)	705.7	1,061.8
	Total non-medical cost (Taka)	4,674.9	5,140.8
Indirect cost			
	Unofficial payment (n=124)	355.4	384.3
	Travel cost of attendant (n=105)	677.3	587.0
	Tips (n=132)	88.3	80.9
	Loss of income of respondent (n=56)	2,883.0	3,379.6
	Loss of income of attendant (n=33)	2,145.5	1,599.0
	Informal compensation (n=15)	5,116.7	5,013.7

Out-of-pocket expenditures			
		Frequency (n)	**Percentage (%)**
Total direct cost (Taka)	≤10,000	100	71.4
	10,001-20,000	24	17.1
	>20,000	16	11.4
	Mean±SD	8,936.5±9,437.7	
Total indirect cost (Taka)	≤2,000	102	72.9
	2,001-3,000	8	5.7
	>3,000	16	11.4
	Mean±SD	2,057.0±3,189.9	
Total OPE (Taka)	≤10,000	100	71.4
	10,001-20,000	24	17.1
	>20,000	16	11.4
	Mean±SD	10,993.5±11,126.9	

Table 4 interprets the association of different variables with total OPE by the patients. Patient's sex (p=0.052), residence (p=0.009) and grade of injuries (p=0.000) were statistically significant with total OPE by the patients. The OPE ≤10,000 taka for the management of injuries was most prevalent among the female patients (86.7%), urban residents (78.5%) and had a history of simple hurt (88.2%).

Table 4: Association of different variables with total OPE (n=140)

	Total OPE (Taka)				**Chi-Square ($\chi 2$)**	**p-value**
	≤10,000	**10,001-20,000**	**>20,000**	**Total**		
	n(%)	n(%)	n(%)	n(%)		
Age (years)						
≤20	15(65.2)	2(8.7)	6(26.1)	23(100)	†7.463	0.465
21-30	39(75.0)	9(17.3)	4(7.7)	52(100)		
31-40	17(68.0)	5(20.0)	3(12.0)	25(100)		
41-50	20(66.7)	7(23.3)	3(10.0)	30(100)		
>50	9(90.0)	1(10.0)	0(0.0)	10(100)		
Sex						
Male	74(67.3)	20(18.2)	16(14.5)	110(100)	5.928	*0.052
Female	26(86.7)	4(13.3)	0(0.0)	30(100)		
Marital status						
Married	68(73.1)	17(18.3)	8(8.6)	93(100)	2.256	0.351
Unmarried	32(68.1)	7(14.9)	8(17.0)	47(100)		
Level of education						
Illiterate	9(90.0)	1(10.0)	0(0.0)	10(100)	†10.572	0.176
Primary	30(68.2)	6(13.6)	8(18.2)	44(100)		
Secondary	25(59.5)	13(31.0)	4(9.5)	42(100)		
Higher secondary	28(80.0)	3(8.6)	4(11.4)	35(100)		
Graduation and above	8(88.9)	1(11.1)	0(0.0)	9(100)		
Residence						
Urban	51(78.5)	10(15.4)	4(6.2)	65(100)	†15.563	*0.009
Rural	38(70.4)	12(22.2)	4(7.4)	54(100)		
Coastal	9(56.3)	2(12.5)	5(31.3)	16(100)		
Hill tracts	2(40.0)	0(0.0)	3(60.0)	5(100)		
Monthly family income (Taka)						
≤15000	19(79.2)	3(12.5)	2(8.3)	24(100)	†1.292	0.868
15,001-30,000	63(71.6)	14(15.9)	11(12.5)	88(100)		
>30,000	18(66.7)	6(22.2)	3(11.1)	27(100)		
Number of wound						

Single	71(71.0)	17(17.0)	12(12.0)	100(100)	0.113	0.957
Multiple	29(72.5)	7(17.5)	4(10.0)	40(100)		
Grade of injury						
Simple hurt	97(88.2)	13(11.8)	0(0.0)	110(100)	†81.304	*0.000
Grievous hurt	3(10.0)	11(36.7)	16(53.3)	30(100)		

*****Statistically significant value †Fisher's exact test value

DISCUSSION

The study showed that the mean age was 33.3±12.8 years and the mean monthly family income was 26242.9±12698.9 taka. About half of the patients (53.5%) were less than 30 years and came from urban areas (46.0%). The majority of the patients had single wound (71.4%), which was simple hurt (78.6%) in grading. The mostly occurred incidences mode was road traffic accident (40%). These findings are nearly similar to the studies.[11,12]

The cost of treatment of the injured patients admitted to the casualty unit of CMCH was identified as direct cost and indirect cost as well as medical cost and non-medical cost. The mean of the total direct cost was 8,936.5±9,437.7 taka; where the mean of the total medical cost was 6,318.6±7,273.9 taka and the total non-medical cost was 4,674.9±5,140.8 taka. These findings are similar to the study in Bangladesh.[13,14] The study also showed that the mean of the total indirect cost was 2,057.0±3,189.9 taka. These studies have reported unofficial or informal payments at public health facilities in Bangladesh.[15] The mean of the total OPE was 10,993.5±11,126.9 taka. These findings are almost similar to the studies.[4,13]

The study revealed that there were significant associations found between the patient's sex, residence and their grade of injuries ($p<0.05$) with total OPE by the patients. The OPE ≤10,000 taka for the management of injuries was most prevalent among the female patients (86.7%), urban residents (78.5%) and had a history of simple hurt (88.2%). These findings are almost similar to the studies.[5,13,16] Reducing out-of-pocket spending on healthcare services is essential to protect every individual and household contrary to financial risks. Better management is the key point to quality service and proper utilization of scanty healthcare resources.

CONCLUSION

This study revealed that the average OPE in the casualty unit of CMCH was 11,000 taka, where the direct cost was 9,000 (82%) and the indirect cost was 2,000 (18%). The major contributors to direct medical costs were investigation costs, medicine costs and operation costs, while transportation costs and food costs contributed to the direct non-medical costs. Unofficial payments along with loss of income of the patient and attendants sum up the indirect cost. None of the patients were under the coverage of any insurance or social financial safety. Significant associations were found between OPE with the residence, gender of the respondents and grade of injuries. This study will provide valuable information about OPE which will help the policy makers for future improvement.

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