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Article

Exploring the Direct Health Expenses Incurred by Households in a Specific Community of Comilla District in Bangladesh

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Abstract

Bangladesh, a lower-middle-income country in South Asia, has made substantial strides in healthcare since its independence in 1971. However, healthcare expenses remain a significant challenge for households, particularly in rural areas. This study focuses on understanding the direct health costs incurred by households in a community of Comilla District, Bangladesh. The research investigates the burden of out-of-pocket health expenditures, encompassing factors such as doctor consultations, medications, diagnostics, and hospitalizations. Despite improvements in health indicators, the increasing healthcare expenditure is exacerbated by the dual burden of disease and demographic transitions in Bangladesh. Limited research has explored healthcare expenditure at the community level, especially in Comilla District. Therefore, this study examines the healthcare expenditure patterns, demographics, and treatment choices of households in this community. A cross-sectional study was conducted, involving 200 rural household heads in specific areas of Daudkandi, Comilla. The study found that households with lower monthly incomes allocate a higher percentage of their earnings to medical expenses, reflecting a financial burden. Additionally, a significant proportion of households resort to seeking treatment from quack doctors. The findings underscore the need for targeted interventions to mitigate the financial strain on households and inform healthcare policies. By understanding the direct health costs incurred by households in Comilla District, this study contributes to the development of strategies for improving healthcare access, reducing costs, and enhancing overall community health outcomes.

Introduction

Bangladesh is a lower-middle-income country located in South Asia that has made considerable progress in healthcare since its independence in 1971[1]. However, despite the improvement in health indicators, healthcare expenditure in Bangladesh remains a significant challenge for households, particularly in rural areas[2]. Healthcare expenditure is a significant component of household expenses, and it is increasing due to the double burden of disease, including both communicable and non-communicable diseases, as well as the demographic and epidemiological transitions occurring in Bangladesh[3]. As a result, understanding the direct health costs incurred by households is essential to inform healthcare policy, planning, and resource allocation.

The burden of out-of-pocket health expenditures, comprising expenses such as doctor consultations, medications, diagnostics, and hospitalizations, has long been a concern in Bangladesh. A significant proportion of households are often forced to bear these expenses directly, sometimes leading to catastrophic financial consequences[3]. Factors such as income levels, availability of health insurance, proximity to healthcare facilities, and prevalence of chronic diseases can contribute to the disparities in health expenditure patterns within a community[4,5].

Several studies have assessed healthcare expenditure in Bangladesh. A study found that households in rural Bangladesh spent 7.5% of their total expenditure on

healthcare, which was higher than the national average of 5.1%[6]. Similarly, another study reported that healthcare expenditure accounted for approximately 7% of the total household expenditure in Bangladesh.

The Comilla District, located in the southeastern region of Bangladesh, is emblematic of the nation's healthcare challenges, including shortage of staff and equipment[7]. However, there is limited research exploring healthcare expenditure at the community level, particularly in the Comilla district. As healthcare costs continue to rise globally, understanding the direct health costs incurred by households in this community is of paramount importance to policymakers, researchers, and public health advocates.

Therefore, this study aimed to explore the direct health costs incurred by households in a community of Comilla district in Bangladesh. By assessing the healthcare expenditure of households in this community, this study can provide a better understanding of the financial burden of healthcare on households, which can inform policy and resource allocation decisions. Furthermore, this study can help identify the healthcare needs of the community and contribute to the development of interventions to improve health outcomes and reduce healthcare costs.

Methods

A descriptive cross-sectional study was conducted to determine the direct health expenditure of households in a rural community located in Daudkandi, Comilla, Bangladesh. The study took place between January and June 2019, focusing on two specific rural areas: Kawadi and Tulatoli villages in Daudkandi, Comilla, Bangladesh. A sample of 200 rural household heads was randomly selected using a random sampling technique. Data collection involved the use of a structured survey questionnaire, which was developed based on previous studies in the field. Face-to-face interviews were conducted to collect data, adhering strictly to ethical guidelines. The study objectives were clearly defined and explained to the respondents, who were required to provide written informed consent before participating in the interviews. Participants were assured that their personal information and responses would be kept confidential and used solely for research purposes. They were also informed of their right to withdraw from the interview at any time, either before or during the interview process. To ensure data accuracy, all interview questionnaires were reviewed for completeness and correctness before data entry. The collected data were entered into the computer using statistical software such as SPSS-24 and MS Excel. Before analysis, the data were carefully cleaned, checked, and edited. Descriptive analysis was performed, including the calculation of means, standard deviations (SD), frequencies, and percentages. Cross tabulation and the Chi-square test were used to examine associations between variables. Statistical significance was considered at a p-value of less than 0.05 (2-sided). Throughout the study, informed consent was obtained from each respondent, and strict confidentiality measures were implemented to protect their identities. The information obtained during the research was solely used for research purposes and not utilized for any other intent.

Results

Demographic Information of the participants:

The study collected demographic information from 200 households in Comilla District, Bangladesh, with an average household size of 4.55. Out of the total households, 176 were headed by males, accounting for 88% of the total households. On the other hand, 24 households were headed by females, making up 12% of the total households. The majority of households consisted of 3–4 members (42%) per household, followed by 5–6 members (32%), and 2 or fewer members (8%). A smaller percentage of households had 7 to 8 members (13%), while only 5% had 8 or more members. In a total of 200 households, the study found 910 household members consisting of 450 (49.45%) females and 460 (50.55%) males, with a male-to-female ratio of 102:100 (number of males per hundred females). In terms of occupation, the highest proportion of respondents were farmers (32%), followed by businessmen (17%), housewives (16%), and labourers (15%). The remaining 20% fell into other occupational categories (Table 1).

The study demonstrated that the majority of households (44.50%) spent less than 1,000 BDT on health-related expenses. Around 30% of households spent between 1,000 and 4,000 BDT. A smaller proportion of households spent between 5,000 and 8,000 BDT (10%) and 9,000 to 12,000 BDT (9.50%). Only 6% of households reported spending more than 12,000 BDT on health expenses in the given year. It was also observed that 50% of households had a monthly income of 5,000 BDT or less. About 35% of households reported a monthly income ranging from 5,001 to 10,000 BDT. A smaller percentage of households had monthly incomes between 10,001 and 15,000 BDT (7%), 15,001 and 20,000 BDT (4%), and 20,001 and 25,000 BDT (2%). Only 2% of households had a monthly income exceeding 25,000 BDT (Table 1).

Given the treatment facilities availed by the households, the study found that 20% of respondents sought treatment from government hospitals, while 10% opted for private clinics. A significant proportion of households (34%) sought treatment from quack doctors. Additionally, 20% of respondents used homoeopathic treatment, 10% sought help from Kabiraj (traditional medicine practitioners), and 6% employed other treatment options (Table 1).

Table 1: Demographic information of the participants

Characteristics	N (200)	%
Sex of household heads		
Male	176	88.00
Female	24	12.00
# of household members		
2 or less	16	8.00
3 – 4	84	42.00
5 – 6	64	32.00
7 – 8	26	13.00
8 +	10	5.00
Occupation of respondents		
Farmer	64	32.00
Businessman	34	17.00
House wife	32	16.00
Laborer	30	15.00
Others	40	20.00
Direct health spending in year (in BDT)		
<1K	89	44.50
1K – 4K	60	30.00
5K – 8K	20	10.00
9K – 12K	19	9.50
>12K	12	6.00
Monthly family income		
≤5000	100	50.00
5001 – 10000	70	35.00
10000 – 15000	14	7.00
15001 – 20000	8	4.00
20001 – 25000	4	2.00
25000 +	4	2.00
Types of treatment facilities		
Govt. hospital	40	20.00
Private clinic	20	10.00
Treated by quack doctors	68	34.00
Homeopathic treatment	40	20.00
Kabiraj	20	10.00

Regarding the expenditure on medical advice, it was observed that the majority of families (32%) reported spending less than 1,000 BDT annually. As the medical expenses increased, the percentage of families spending on medical advice showed a slight decrease.

Specifically, 28% of families in the 1,000 to 4,000 BDT category sought medical advice, followed by 27.5% in the 5,000 to 8,000 BDT category and 24.5% in the 9,000 to 12,000 BDT category. Surprisingly, the percentage of families seeking medical advice increased again in the highest expenditure category, with 30% of families spending more than 12,000 BDT on medical advice (Table 2).

Table 2: Evaluation of Annual medical expenses incurred by families for different categories of medical expenditure (n=200)

Amount of medical expense in BDT	n	Medical Advice (%)	Investigation (%)	Drugs purchase (%)
<1K	89	32	9	59
1K – 4K	60	28	12	60
5K – 8K	20	27.5	12.5	60
9K – 12K	19	24.5	14.5	61
>12K	12	30	15	55

Evaluation of Annual Medical Expenses by Categories Medical Expenditure:

In terms of medical investigation expenses, a consistent pattern was observed across the expenditure categories. Around 9% of families in the less than 1,000 BDT category spent on medical investigations. This percentage increased slightly to 12% for families spending between 1,000 to 4,000 BDT and 12.5% for families in the 5,000 to 8,000 BDT category. In the 9,000 to 12,000 BDT expenditure category, 14.5% of families incurred medical investigation expenses. However, in the highest expenditure category (>12,000 BDT), the percentage decreased to 15% of families spending on medical investigations (Table 2).

Table 3: Distribution of couples by educational level (n=300)

Level of Education	Respondents		Respondent's Husband	
	n	%	n	%
Illiterate	108	36	76	25.3
Never went to school, but can read and write	53	17.7	61	20.3
Primary	67	22.3	59	19.7
Secondary	39	12.9	48	19.0
Higher Secondary	12	4.0	18	6.0
Graduate	9	3.0	19	6.3
Masters	12	4.0	19	6.3

The majority of families allocated a significant portion of their medical expenses to purchasing drugs. In the less than 1,000 BDT category, 59% of families spent on drug purchases. This percentage remained consistent across higher expenditure categories, with 60% of families in the 1,000 to 4,000 BDT and 5,000 to 8,000 BDT categories, and 61% of families in the 9,000 to 12,000 BDT category spending on drugs. Interestingly, in the highest expenditure category (>12,000 BDT), the percentage of families spending on drugs decreased to 55% (Table 2).

The study revealed that the majority of families spent less than 1,000 BDT annually on medical expenses, with a significant portion allocated to drug purchases. As medical expenses increased, the percentage of families spending on medical advice and investigations showed slight fluctuations, while the percentage spending on drug purchases decreased in the highest expenditure category. These findings highlight the distribution of medical expenses among families in the surveyed population and provide valuable insights for healthcare policymakers and practitioners in devising strategies to address healthcare affordability and accessibility challenges (Table 2).

Monthly Family Income and Medical Expenditure Ratio:

The study revealed that households with a monthly family income of 5,000 BDT or less allocated approximately 35% of their income towards medical expenses. Among households with a monthly family income ranging from 5,001 to 10,000 BDT, the medical expenditure ratio was 32%. As the monthly family income increased to the range of 10,001 to 15,000 BDT, the medical expenditure ratio slightly decreased to 25%. Similarly, households with a monthly income between 15,001 to 20,000 BDT also allocated 25% of their income towards medical expenses. Similarly, a further increase in family income, ranging from 20,001 to 25,000 BDT, resulted in a consistently decreased medical expenditure ratio of 20%. Lastly, among households with a monthly income exceeding 25,000 BDT, the medical expenditure ratio was found to be 18%. These results indicate a pattern of declining medical expenditure ratios as the monthly family income increases. Lower-income households tend to spend a higher proportion of their income on medical expenses, while higher-income households allocate a relatively smaller percentage of their income towards healthcare costs (Table 3).

Table 4: Monthly family income-monthly medical expenditure ratio of households (n=200)

Monthly family income	Medical expenditure (BDT)	% of total income
≤5000	1750	35%
5001 – 10000	3200	32%
10000 – 15000	3750	25%
15001 – 20000	5000	25%
20001 – 25000	5000	20%
25000 +	5000	18%

Discussion

The present study investigated the demographic characteristics of 200 households in a community located in Comilla District, Bangladesh. The average household size was found to be 4.55 members, which indicates that families in this community tend to have slightly larger households compared to the national average[8]. This finding may have implications for resource allocation, living arrangements, and social dynamics within the households. In terms of the gender distribution of household heads, the study revealed a significant gender disparity. Out of the total households surveyed, 88% (176 households) were headed by males, while only 12% (24 households) were headed by females, which is consistent with the national standard[9]. This indicates a clear dominance of male household heads in the community. Such disparities in household leadership can influence decision-making processes, resource control, and access to opportunities, potentially impacting gender equality within the community. The majority of households consisted of 3–4 members, accounting for 42% of the total households. These findings align with the commonly observed family size in many regions of Bangladesh. The second most prevalent household size was 5–6 members, comprising 32% of the households. Smaller households with 2 or fewer members constituted 8% of the total households, indicating the presence of single-member or couple-only households. Furthermore, 13% of households had 7 to 8 members, and only 5% of households had 8 or more members, suggesting that larger extended families are relatively less common in this community.

The study also analyzed the gender composition of household members. Among the 910 household members surveyed, 450 (49.45%) were females, while 460 (50.55%) were males, which replicates the national averages[9]. This near equal distribution of genders within the households suggests that there is no significant gender imbalance in terms of the total number of family members. Lastly, the study assessed the male-to-female ratio, which was found to be 102:100 (number of males per hundred females). This ratio indicates a slightly higher number of males for every 100 females in the community. While the difference is relatively small, it could be indicative of underlying demographic trends and may have implications for social dynamics and gender-specific issues within the community.

The study discovered that the majority of families spent less than 1,000 BDT annually on medical expenses, with a significant portion allocated to drug purchases. As medical expenses increased, the percentage of families spending on medical advice and investigations showed slight fluctuations, while the percentage spending on drug purchases decreased in the highest expenditure category. These findings highlight the distribution of medical expenses among families in the surveyed population and provide valuable insights for healthcare policymakers and practitioners in devising strategies to address healthcare affordability and accessibility challenges. The study reveals a proportional relationship between monthly family income and monthly medical expenditure among the surveyed households. As the monthly

family income increased, the percentage of income spent on medical expenses tended to decrease. A recent study also found a similar scenario[10]. This indicates that households with lower incomes allocate a higher percentage of their earnings to medical needs, which may have implications for healthcare accessibility and affordability. These findings underscore the importance of understanding the income-to-expenditure ratio when assessing the financial burden of medical expenses on households. Policymakers and healthcare providers can use this information to tailor assistance programs and policies that target vulnerable populations with lower incomes to alleviate the financial strain of medical expenditure and ensure equitable access to healthcare services.

Limitations of The Study

This study was conducted to focus on a specific community within Comilla District, which may limit the generalizability of findings to broader populations. Additionally, the cross-sectional design restricts the ability to establish causal relationships or capture longitudinal changes in demographic patterns. Further research is required to provide comprehensive findings.

Conclusion

The findings underscored the challenges faced by households in accessing affordable and quality healthcare, particularly in rural areas with limited healthcare infrastructure. The burden of direct health costs not only affects households' financial stability but also has broader implications for their overall well-being and socioeconomic prospects. Many households are forced to make difficult trade-offs between healthcare expenses and other essential needs, potentially leading to a cycle of poverty and hindered development. The insights from this research emphasize the urgency of targeted interventions to mitigate the direct health cost burden on households. Policymakers should consider strategies to improve healthcare affordability, such as expanding social health insurance coverage, strengthening public healthcare facilities, and regulating private healthcare providers to ensure equitable access and reasonable pricing.

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