

Original Article

Burden of chronic illness and associated disabilities in Bangladesh: Evidence from the Household Income and Expenditure Survey

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Abstract

Objective: The purpose of this study was to investigate the distribution of chronic illness and associated disability, out-of-pocket payment (OOPP), and other related factors using survey data from Bangladesh.

Methods: This study analyzed Bangladesh Household Income and Expenditure Survey data that include socio-economic and demographic data, such as consumption, expenditures, and assets, along with information regarding chronic illness and disability. Multiple linear regression models were used to identify factors significantly associated with OOPP. Furthermore, a binary Logistic regression model was employed to assess the association of the explanatory variables with disability status.

Results: A higher prevalence of chronic illness was found for those with chronic gastritis (18.70%), and 41.92% of the population had at least one side disability. The average OOPP healthcare expenditure for chronic illness was estimated to be US\$7.59. Higher OOPP was found among the upper 2 wealth quintiles. Overall OOPP health expenditure was significantly higher among individuals with an associated disability ($P < 0.001$). The likelihood of having an associated disability was higher among those individuals with a lower education level ($OR = 2.36$, 95% $CI: 1.95–4.06$), those who not earning an income ($OR = 2.85$, 95% $CI: 2.53–3.21$), those who did not seek care ($OR = 1.73$, 95% $CI: 1.57–1.90$), those who sought care from a pharmacy ($OR = 8.91$, 95% $CI: 7.38–10.74$), and those in the lowest wealth quintile ($OR = 7.21$, 95% $CI: 6.41–8.12$).

Conclusions: The high OOPP illustrates the necessity of financial risk protection for the population at low socio-economic status. Therefore, we recommend that the government strengthen the healthcare system with appropriate support directed to the rural and elderly populations.

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Keywords: Chronic illness; Disability; Out-of-pocket payments; Burden; Bangladesh

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Introduction

The burden of chronic illness is increasing and is a significant cause of mortality and morbidity worldwide.¹ According to the 2015 Global Burden of Disease (GBD) study, non-communicable diseases (NCDs) caused 71.3% of global deaths in 2015, equivalent to approximately 39.8 million deaths. Total deaths attributable to NCDs rose by 14.3%, an increase of 5 million deaths since 2015²; approximately 80% of these deaths occurred in low- and middle-income countries (LMICs).³ The rapidly increasing rates of chronic illness constitute a major public health challenge, undermining social and economic development.⁴ In the latest GBD study, the leading causes of NCD deaths were cardiovascular disease (17.9 million) and cancers (8.8 million), though the global death due to cancers increased by 17.0% since 2005.² Chronic illnesses, including heart disease, stroke, cancer, chronic respiratory disease, and diabetes, account for half of annual mortality (54%) and the burden of illness (47%) in the Southeast Asian Region.⁵ Chronic illnesses are expected to exceed communicable, perinatal, prenatal, and food diseases on the list of leading causes of death in all countries by 2020.¹ According to the comprehensive estimates in the GBD study, deaths from chronic NCDs are expected to increase up to 77% from 1990 to 2020, and chronic NCDs are the cause of disability in 68% of people living with disability worldwide and 84% in LMICs.^{6,7} Bangladesh is presently in the middle of the epidemiologic transition, characterized by a shift in burden of disease as primarily attributable to infectious and deficiency diseases to mostly attributable to non-communicable chronic illnesses.^{8,9} Recent evidence suggests that chronic illnesses are responsible for almost half of the annual mortality (51%) and burden of disease (41%) in Bangladesh.⁸ Chronic illnesses are not only responsible for premature death, but also have major adverse effects on quality of life and contribute to substantial economic costs on households, communities, and society.² The high prevalence and duration of chronic conditions often require long-lasting continuing care that contributes to an increase in the disability burden.^{10,11} The most difficult outcome for individuals with a chronic illness and disability is prevention of working, performing normal daily tasks, and socializing, which necessitate help from a caregiver and thus increases economic burden for the individual, household, and the country. Further, patients with chronic conditions usually incur high level of out-of-pocket payment (OOPP) for healthcare that leads to income deficiencies for other necessities, and impedes access to

healthcare, therefore reducing quality of life.^{10,12} OOPP may be a severe hardship if it consumes a large proportion of income, particularly for people with multiple chronic conditions, along with disability, who require regular health service for the management of their illness.

Chronic illnesses with or without a disability are usually related to high economic burden. Similar to many LMICs, Bangladesh is also facing the burden of disease where OOPP remains the most substantial support for healthcare, and health insurance is almost nonexistent, with the exception of small scale non-governmental organization-financed schemes.^{13,14} Private health expenditure constitutes a significant share of total healthcare (63.3%) in Bangladesh, of which 97.4% is covered through OOPP.¹⁵ The increasing prevalence of multiple chronic conditions will contribute to increasing healthcare utilization and increasing costs.¹⁶ Moreover, individuals with chronic disease and associated disabilities have poorer health, and the healthcare costs for the disabled present a severe financial hardship that may be catastrophic to financial well-being.¹⁷ It has already been demonstrated that households with at least one member with chronic conditions face higher financial risks than other households^{18–20}; financial risk might increase with associated disability. Studies have shown that as the need for OOPP health expenditure increases, there is a corresponding decrease in the use of health services in LMICs.^{21,22} Reliance on OOPP results in catastrophic health expenditure and impoverishment in LMICs, including Bangladesh.^{22,23} A study in Bangladesh reported that incidence of catastrophic health expenditure among households with members having chronic conditions is significantly greater, and the financial risk of the lowest income households was about 3 times higher than the highest income households.²⁴ While there is accumulated evidence showing a rapid rise in chronic disease, literature on the extent to which households experience financial burden related to OOPP due to chronic disease and disabilities is limited. The objective of this study was to observe the distribution of chronic illness with associated disability, and to assess the financial burden of households due to chronic conditions and associated disabilities using nationwide survey data.

Material and methods

Data source

This study used data from a large nationally representative survey, the Bangladesh Household Income and Expenditure Survey (HIES) 2010, conducted by

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