

論文内容の要旨

論文題目 Determinants of out-of-pocket health payments, catastrophic expenditures and coping strategies in urban Bangladesh

(バングラデシュ都市部における医療費自己負担、高額医療費支出 及び対処戦略の決定要因に関する研究)

氏名 エムディー ミジャヌール ラハマン
Md. Mizanur Rahman

Introduction

The double burden of disease is a major challenge for fragile health systems in low- and middle-income countries. In these countries, poverty and illness are closely linked: poverty leads to ill health and ill health maintains poverty. Both non-communicable diseases (NCDs) and infectious diseases cause financial hardship, directly through out-of-pocket (OOP) spending on treatment and indirectly by limiting labor participation in income-generating activities. In low- and middle-income countries where public funding for health services is inadequate and risk-pooling mechanisms limited or unavailable, OOP payments and illness-related income loss can lead to asset depletion, debt and reductions in essential consumption, sometimes resulting in financial catastrophe. Identifying determinants of OOP health expenditure and distress financing may reveal opportunities to reduce costs and protect households from financial catastrophe.

In the Asia-Pacific region, the burden of OOP payment is highest in Bangladesh (15%), Vietnam (15%), China (12%) and India (10%) and lowest in Malaysia (0.8%), Thailand (2%) and Indonesia (4%). Despite the possibly high incidence of catastrophic expenses and high OOP expenditure in Bangladesh, knowledge about determinants of OOP payments and catastrophic expenditures is limited. In addition, research on coping strategies to pay for health expenses for major illness is still in its infancy in Bangladesh. None of the extant studies in Bangladesh consider the whole picture of illness in household members, their care-seeking behavior, treatment costs or distress financing risks. Hence this study is expected to add substantial knowledge by incorporating information on detailed illness profiles, the burden of OOP payments, care-seeking behavior, and healthcare payment coping strategies. The main aim of this study is to:

- (1) Describe the prevalence of self-reported illness and identify its risk factors
- (2) Identify determinants of OOP payments, catastrophic expenditure and distress financing
- (3) Establish the relationship between sources of financing and catastrophic expenditure

Data and Methods

Study area and design

This study took place in Rajshahi city of Rajshahi district in north-west Bangladesh, the third largest city in the country. Rajshahi district has a population of 2.6 million, with an average household size of about four, and is broadly representative of many urban areas in Bangladesh. The literacy rate is 71% and 62% for males and females respectively. This was a cross-sectional study based on a three-stage, cluster-sampling methodology, which collected information from 1600 households during August to November 2011 and had a response rate of 99.6%. Interviewers recorded information using a structured questionnaire on household member's socio-demographic characteristics, household consumption expenditure, and on all types of illness experienced in the past 30 days and the past 12 months respectively.

Dependent variables

This study addressed four major outcome variables: self-reported illness; OOP payment for healthcare seeking; catastrophic health expenditure; and distress financing. Catastrophic health expenditure was estimated based on household capacity to pay in the 30 day recall period. Distress financing was defined as funding illness costs by borrowing, selling, reducing food expenditure, removing children from school or taking additional paid work.

Independent variables

The study modeled households' OOP health payments and risk of catastrophic expenditure as a function of household characteristics and economic status, presence of illness and care-seeking behavior, using average illness per child and adult as a measure of illness. In analyzing coping strategies, a range of variables were collected at the level of the illness episode, the individual and the household. Episode-of-illness level variables included type of illness (e.g. asthma, heart diseases), and health facility used. Individual variables included age, gender and education; and household level variables were household size and household economic status, measured using consumption expenditure quintile.

Statistical analysis

Descriptive statistics were calculated for continuous data using the mean (confidence interval) for normally distributed data and the median (inter-quartile range) for non-normally distributed data. Determinants of OOP payments were estimated using a double hurdle model. Poisson regression was used to identify the determinants of catastrophic expenditure, with model selection based on backward stepwise model-building. The relationships between episode-level, individual-level and household-level characteristics and the two outcomes—reporting illness and distress financing in the past 30 days prior to interview—were estimated using two-level and three-level models, respectively. All analyses at both the univariate and multilevel analysis stages were adjusted for the probability sample design. Data management and statistical analysis was performed using Stata/SE Version 12.0.

Results

In total 3300 household members in Rajshahi city (about 45% of the total 7202 household members) were found to have had at least one illness in the past 30 days. The most commonly reported illnesses included common tropical infectious diseases among children under five (particularly cold/fever, diarrhea/gastroenteritis and pneumonia), and non-communicable diseases (notably hypertension, gastritis/peptic ulcer, rheumatic arthritis, diabetes, heart diseases and asthma) among adult and elderly populations. The risk of reporting illness was significantly higher among those aged over 44 years, women and poor households. On average households spent 11% of their total budgets on health and nearly 9% of households faced financial catastrophe. The poorest households spent significantly lower amounts on health but had a four times higher risk of catastrophe than the richest households. The risk of facing catastrophe was three times higher for users of private facilities compared to others. Risk of catastrophic health expenditure increased by a factor of eight among households that used inpatient care. The key determinants of OOP payments and catastrophic expenses were economic status, use of inpatient or outpatient health services, presence of chronic illness in the household, and illness among children and adults. Subjects were forced to adopt distress coping strategies to pay for healthcare costs in 13% of all illness episodes. Saving and borrowing were more heavily used for inpatient treatment than outpatient treatment. Heart diseases, asthma, typhoid, tumor, utilization of public or private outpatient facilities and being in a poor household were significant determinants of the need to adopt distress coping strategies. The study also showed that those facing financial catastrophe i.e. those spending more than 40% of the household capacity to pay or 15% of household total expenditure were at significantly higher risk of borrowing, borrowing or selling, and distress financing respectively.

Conclusion

The high amount of OOP payments for healthcare and complete absence of formal health insurance in health financing systems in Bangladesh may expose households to financial risks associated with major illness or accidents. Households using inpatient as well as outpatient services were more likely to face financial catastrophe. Households can only be protected from these situations by reducing the health system's dependency on OOP payments, providing more financial risk protection and ensure existing subsidized programs are incorporated in public health services. The Government of Bangladesh should reallocate budgets, to and increase the priority of NCD issues in their health agenda.