論文の内容の要旨

論文題目　Out-of-pocket health payments and coping strategies in urban Nepal
（ネパール都市部における医療費自己負担と対処戦略に関する研究）

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Objective: Out-of-pocket (OOP) health payment, a payment made directly by households, remains a major source of health financing in many developing countries. Excessive reliance on OOP payment causes catastrophic health spending and impoverishment. Disease-specific public subsidies are increasingly being introduced in low-income countries to prevent healthcare payment-related financial catastrophe. Assessing the incidence and intensity of catastrophic out-of-pocket spending by disease type may reveal how far existing public subsidies that target specific diseases are protecting the population from the OOP spending. This thesis aims to analyze the current financial protection landscape in Nepal using a cross-sectional, population-based survey data. Specifically, the thesis will: a) provide the first and most comprehensive evidence on catastrophic payments, to highlight the financial burden of major illnesses at the household level, and b) provide an in-depth understanding of the determinants of distress financing using a combination of parametric and non-parametric approaches.

Methods: I conducted a cross-sectional multi-stage probability-sampled population survey in five municipalities of Kathmandu Valley from November 2011 to January 2012. A total of 1,997 households were interviewed. The questionnaire used for the study included questions about household demographic information, education, consumption and durable goods, self-reported disease episodes, care-seeking behavior, health-related expenditure, inpatient health expenditures and coping strategies. The illness episodes in this study refer to all morbidities in the past 30 days

and chronic conditions that continued for more than three of the past 12 months. A pilot study was conducted in Lalitpur City to validate the study tools prior to the survey. First, this thesis employed a commonly-used threshold value for catastrophic spending, which is 10% of the total household consumption. I assessed the incidence and intensity of catastrophic spending by costs associated with the treatment of the 10 most commonly-reported diseases. A concentration index was used to assess whether the catastrophic spending is unequally distributed across the income groups. I also used a Poisson regression model to measure the effect of disease types and other risk factors on catastrophic expenditures. Second, the risk factors for distress financing due to chronic illnesses in the last 12 months were investigated using a random-effects Poisson regression model. Distress financing denotes any form of coping strategies that have a long-term impact on household welfare, including borrowing, taking loans, selling household assets, removing children from school, reducing food intake and seeking additional work to pay for healthcare treatment. I used classification and regression trees (CART) to illustrate decision-making processes leading to distress financing, since CART yields the conditional probabilities of an event given different scenarios displayed in a decision tree structure.

Results: This thesis showed that 13.8% of the households in urban areas of Nepal faced catastrophic OOP spending, and that the incidence and intensity of catastrophic spending were concentrated among the poor. Descriptive analysis of disease-specific OOP expenditure suggests that hypertension, cold/cough/fever and diabetes were the three common diseases that amount to catastrophic spending. After adjusting for household consumption quintile and other factors, hypertension and cold/cough/fever were no longer significantly associated with catastrophic spending. This study suggested that the more serious diseases are independently associated with catastrophic spending even after adjusting for household consumption, indicating that their

impoverishing effects span all social strata in urban Nepal. Major chronic non-communicable diseases such as diabetes, asthma, gastritis/peptic ulcer, arthritis and heart diseases were found to increase the risk of catastrophic expenditure in addition to injury. Second, this thesis illustrated that 2.5% of chronic illness episodes caused distress financing, which is the most severe form of coping strategy for financing healthcare costs. The event of hospitalization, home ownership, total treatment costs above the median cost (NRs. 6,000, approximately 70 US dollars at the current exchange rate), the education level of the household head and having injury were the risk factors for distress financing. Among these factors, CART analysis predicted that the most important factor for distress financing is whether the treatment cost exceeded NRs. 5,424 (approximately 63 US dollars at the current exchange rate). Further, among the illnesses that cost above NRs. 9,734 (approximately 113 US dollars at the current exchange rate) for people below 52 years old, the risk of distress financing increased in poor households.

Conclusion and recommendations: The major findings from the present study—high incidence of catastrophic OOP spending and distress financing—suggest that existing financial protection mechanisms in urban Nepal fall considerably short both in depth and in coverage. Despite current public health subsidies in the country that aim to safeguard people from poverty and destitution due to medical costs, too few cases benefit from such subsidies. As a policy priority for the urban population of Nepal, effort should be directed to moving towards a broad-based risk-pooling mechanism and, ultimately, universal health coverage (UHC). Introduction of a financial protection mechanism in extremely resource-poor settings such as Nepal may be challenging due to a lack of available resources. Given the limited fiscal space for the health sector, a rapid increase in health expenditure is not likely to occur in the short term. As a politically feasible alternative, initial steps could include a phased introduction of social health insurance as an alternative to tax-based health

financing, starting from hospitalization and injuries among the formal sector employees in urban areas. Second, improving the management of public healthcare service may provide a relatively low-cost mechanism for improving financial protection amongst the poorest members of the urban Nepalese society, by encouraging the use of public facilities. Improved and cost-effective management of public facilities will enable existing healthcare funds to be better targeted to those most in need of financial protection. Third, preventing the onset of non-communicable diseases and further complications associated with them may reduce the economic burden. Such interventions should include population-wide education for healthy diet, importance of regular exercise, reduction of smoking and alcohol consumption and regular health check-ups at primary healthcare facilities. Further, the government of Nepal should consider intensifying injury-prevention programs in urban municipalities, through road and workplace safety measures such as speed limits and effective implementation of traffic signals in main roads. Health financing with adequate risk protection is a universal goal in all countries. This study has shown the limitations of the current health system in Nepal, and potential for future reform. By incorporating the recommendations suggested here, combined with a strong commitment by policy–makers to build a strong regulatory framework in health sector, the people of Nepal can move toward enjoying the benefits of financial protection and improved health.