

Are Ill Always Poorer? Evidence from HIES 2012/13

Jeyaprabha, Suresh
Department of Economics
Faculty of Commerce & Management
Eastern University of Sri Lanka
pjpraba11@yahoo.com.au

Introduction

The relationship between poverty and ill-health is multi-faceted and causality appears to work in both directions (Grant, 2005). Ill-health in the form of malnutrition, disability, communicable and non-communicable diseases are involving two types of economic cost. First, ill health limits the ability to work thereby reducing labour income and secondly, the additional care and medical expenditure reduces disposable income (Genoni, 2012). The loss of income and additional cost related with illness increases the risk of falling into poverty and more ill-health, as multi dimensional poverty is an important determinant of poor health (Foege, 2010). Factors associated with poverty such as lower income, poor housing conditions, lack of drinking water, lack of proper sanitation, low levels of health education and lack of health care facilities combine to impact on health (Case and Deaton, 2005; Cattaneo et al., 2009; Seligman et al., 2010; Adjei & Buor, 2012). The objective of this study is to find out the impact of ill-health on the probability of being poor. The rest of the article is structured as follows. The next section discusses theoretical and empirical literatures on the relationship between poverty and health. Section III presents the methodology used in this study. Section IV presents the estimation results and interpretation. The final section presents the concluding remarks and policy implications.

Literature Review

Are the wealthy always healthier than the poor? Several empirical studies address this question, for example Case and Wilson, 2000; Case and Deaton, 2005 and Biggs et al., 2010. Using the Langeberg Survey of South Africa, Case and Wilson (2000) found strongly significant correlation between earned income and chronic diseases, and suggested that causality works the other way. That is, the healthier are wealthier due to higher probability of being employed and earning more income. Thereby, wealthier households are more likely to spend on healthcare. In a later study, using data from twenty-two Latin American countries, Biggs et al. (2010) found that the wealthier people are not always healthier; much depends on how the wealth is distributed among the population. More recently, Ogundari and Abdulai (2014) studied the determinants of the health care expenditure and found that increase in household income by 10 per cent leads to an increases in healthcare expenditures by about 23 per cent in rural and 15 per cent in urban areas of Nigeria. Therefore, causality appears to work both ways between wealth and health.

Empirical studies also found that the disabled are less likely to begin education and are more likely to be multi dimensionally poor (Filmer, 2008 and Mitra et al., 2013). Using data from household survey in Afghanistan and Zambia, Trani and Leob (2012) found that persons with disabilities are significantly unlikely to be employed. In India, even if the disabled could go to work, the wage they received was lower than the wage that the non-disabled received (Mitra and Sambamoorthi, 2008). The disabled are also more likely to be poor due to exclusion and marginalization, which reduce opportunities to participate in the household as well as in society (Yeo and Moore, 2003).

Sufficient nutrition and food is essential for better health. Poor people always suffer lack of food and nutrition which then causes diseases. Malnutrition is a major concern among poor communities in developing countries because it leads to a higher prevalence of stunting, being under- weight and wasting (Ramachandran, 2007 and Van de Poel et al., 2007).

The burden of communicable and non-communicable diseases also increases the risk of falling into poverty due to out of pocket payment consuming a large part of household income (Binnendijk et al., 2012). Adjei & Buor (2012) found a strong relationship between poverty and the occurrence of whooping cough, skin diseases, measles and intestinal disorders in Ghana. Using data from Demographic and Health Surveys collected in the 1990s from 22 Sub-Saharan African countries, Filmer (2005) found that the incidence of fever was high among the poor but not statistically significant, but that the treatment for fever is strongly related with the income distribution, with richer people being more likely to get treatment. Hence, there is strong empirical evidence in both directions between poverty and health.

Methodology

The objective of this study was to find out the impact of ill health on the probability of being poor. The main data source of this study is the Household Income and Expenditure Survey (HIES) conducted by the Department of Census and Statistics (DCS) of Sri Lanka. This study uses the Cost of Basic Needs (CBN) approach to compute the poverty line. In Sri Lanka, a household is considered to be poor if the persons living in the household had per capita total consumption expenditure below Rs. 3624 in year 2012/13.

As this study proposes to estimate the probability of being poor, the appropriate model to use would be the logistic model, with the binary dependent variable taking value 1 if the household is poor and 0 otherwise. The logistic model is a linear probability model which has parameters reflecting the changes in the probability of being a poor household to changes in the explanatory variables. The model takes the form below:

$$\Pr(WP = 1 | X) = F(\alpha + \beta X)$$

Where $F(z) = e^z / (1 + e^z)$ is the cumulative logistic distribution and the parameters β are estimated by maximum likelihood. Based on past studies, possible explanatory variables expected to have an effect on household poverty in the context of Sri Lanka, are given in Table 1, which include socio-demographic, location and health status variables.

Table 1: Model Explanatory Variables

Variables	Description
Socio-Demographic Characteristics	
age	Age of the household head
edu	Years of schooling of the head of the household
hhsize	Household size
child_sh	share of children (age \leq 14) among household members
oldparents_sh	share of old parents (age \geq 75)among household members
Geographical Location	
Urban	1 if urban sector and 0 otherwise
Rural	1 if rural sector and 0 otherwise
Estate	Base location
Health proxies	
Num_disabled	Number of Disabled members (naturally disabled or disabled by accident) in household
visit_hospital	1 if visit to government hospital during last one month period for outpatient treatment 0 otherwise

Results

The data used for the estimation of 20540 poor households in Sri Lanka. The estimation results are presented in Table 2. According to table 2, the marginal effects of the socio demographic variables shows that the age of the household head, household size, proportion of children in the household and proportion of old parents in the household have significant positive effects on the household being poor while the education has a significant negative effect on a household being poor. The marginal effects highlight that, for every 1 percent increase in the size of the household, the probability of being in a poor household would increase by about 6.4 percentage points. Likewise, every 1 percent increases in proportion of children in the household increases the probability of being poor by 12 percent while the probability of being poor increased by 10 percent if the proportion of old parents increased by 1 percent in the household. It is important to note that the household head's education is an important factor in reducing the probability of the household being poor. The marginal effect shows that for every additional year of household head's education, the probability of being poor will decrease by 0.9 percentage points.

Marginal effects of the geographical location of the households show that the likelihood of being poor will be 28.8 and 9.1 percentage points lower, respectively, if the household is located in the urban or rural sector, compared to being located in the estate sector. That

is, a household in the estate sector has a much higher chance of being poor compared to those living in the rural and urban sectors.

Two variables related to health also show a significant positive relationship with the probability of being a poor household. The marginal effect depicts every 1 percent increases in the total number of disabled persons in any household increases the probability of being poor by 4.4 percent while the likelihood of being poor will be 4.6 per cent higher, if the household visits a government hospital during the period of the last one month compared to the households that have not visited the government hospital during the last month. So we can conclude that health is one of the factors associated with poverty and ill health leads to higher probability of a household being poor.

Table 2: Marginal Effect Estimation Results

Variables	Marginal Effect	Standard Error
age	0.0007304***	0.0001676
educ	-0.009685***	0.0006833
hhsz	0.0648631***	0.0019576
oldparents_sh	0.1004985***	0.0246955
child_sh	0.1277999***	0.0165893
urban	-0.2881369***	0.0114291
rural	-0.0912405***	0.0100476
num_disabled	0.0440015**	0.0168368
visit_hospital	0.0461383***	0.0074911

*** $p < 0.001$ ** $p < 0.01$

Conclusion

Since limited studies had been carried out regarding the nexus between health and poverty in Sri Lanka, this study has provided a very useful comprehensive examination of the relationship between poverty and health. The model found that disability and ill health are positively associated with the probability of the household being poor. In addition to the health dimension, socio demographic and location related variables are also significantly related to poverty in Sri Lanka. Hence, the policy implications of this study are to focus on the interventions relating to the health sector in Sri Lanka as this too can help to reduce ill health and poverty.

Keywords: Disability; Ill-Health; Poverty; Probability; Poor

References

- Adjei, P. O. W., & Buor, D. (2012). From poverty to poor health: Analysis of socio-economic pathways influencing health status in rural households of Ghana. *Health Sociology Review*, 21(2), 232-241.
- Binnendijk, E., Koren, R., & Dror, D. M. (2012). Can the rural poor in India afford to treat non-communicable diseases. *Tropical Medicine & International Health*, 17(11), 1376-1385.

- Case, A., & Deaton, A. (2005). Health and wealth among the poor: India and South Africa compared. *American Economic Review*, 229-233.
- Filmer, D. (2008). Disability poverty and schooling in developing countries: Results from 14 household surveys. *The World Bank Economic Review*, 22 (1), 141-163.
- Grant, U. (2005). Health and Poverty Linkages: Perspectives of the chronically poor, Background paper for the chronic poverty report 2008-09, Chronic poverty research centre.
- Genoni, M. E. (2012). Health shocks and consumption smoothing: Evidence from Indonesia. *Economic Development and Cultural Change*, 60 (3), 475-506.
- Mitra, S., Posarac, A., & Vick, B. (2013). Disability and poverty in developing countries: A multidimensional study. *World Development*, 41, 1-18.
- Ogundari, K., & Abdulai, A. (2014). Determinants of household's education and healthcare spending in Nigeria: Evidence from survey Data. *African Development Review*, 26 (1), 1-14.