Introduction

In recent decades, the world has witnessed enormous progress in improving health and longevity. However, rising out-of-pocket health expenditure poses a great challenge for many countries. The World Health Report 2008 estimated that nearly 100 million people around the world suffer financial catastrophe due to out-of-pocket expenditure on healthcare services and 100 million people are pushed into poverty as a result of health expenditure. Inadequate social security programmes and institutionalized care, especially in developing countries, pushes families to resort to various sources to finance their health care. In some countries, such as India, borrowing, use of past savings or sale of household assets (Gietler et al., 2009; Islam and Maitra, 2012). International remittances are considered to be one of the important external income sources for households to meet unexpected health shocks and to escape from poverty.

The New Economics of Labour Migration (NELM) argues that remittances reduce a household’s financial constraints that limit production and investment activities in an imperfect credit market environment and enable them to invest in human and physical capital (Stark and Bloom, 1985; Taylor, 1999).

In this way, remittances provide an insurance mechanism to the migrant family staying behind.

Case of Kerala

Kerala’s performance in human development indicators is far ahead that of the other states in India despite slow economic growth and low per capita income. The state has succeeded in significantly reducing mortality and fertility rates and in improving the health status of its population (Bhat, 1986).

This success can be attributed largely to the effective use of healthcare services, higher literacy (especially women’s education), political awareness, the minimum level of nutrition through public distribution system, social movements, development of road networks and transportation (Nag, 1989; George and Naq, 2004).

Despite Kerala’s Higher performance in human development indicators, the state has the highest percentage of morbidity among Indian states, which has been increasing since the last two decades both in the rural and urban areas (NSSO, 1998, 2014).

The morbidity rate in rural areas increased from 118 persons to 310 persons per 1,000 population during the period 1995-96 to 2014 and in urban areas, it increased from 88 persons to 306 persons per 1,000 population during the same period.

The state government has drastically reduced the prevalence of communicable diseases by implementing various immunisation programmes and expansion of healthcare facilities, whereas non-communicable diseases have been rising in the recent decade (Kuthy, 2000; Thessa and Mehndiratta, 2011).

In 2007, nearly 6.52 million persons suffered from one health problem. Of this, 4.48 million persons suffered from one or more of the eight chronic diseases, viz., diabetes, heart problem, arthritis, cholesterol, blood pressure, asthma, cancer and kidney disease. (Zachariah and Ragan, 2008).

In 2014, more than 65 percent of spells of ailments were treated in the private sector and translated into a higher level of morbidity among the population during the same period.

Health care in Kerala (contd.)

Kerala’s government has increased inpatient hospital expenditure by 12.2 per cent from 1993 to 2001 and 19.3 per cent in 2007-08 (Tumble, 2011).

This indicates that remittances have been one of the important income sources not only for the economy, but also for remittance-receiving households.

The state government failed to increase investment in the health sector due to the rising fiscal deficit in the budget during the last two decades. The cost of purchasing medical services increased slightly from 1.02 per cent to 1.5 per cent of the GSDP between 2001-02 and 2013-14 (Economic Review, 2015).

The lack of public spending on health led to deterioration in the quality of healthcare services and inpatient hospital. As a result, the government hospitals are unable to meet the increased demand for healthcare services and the public responded to this shortfall by relying more on private hospitals. In 2012, 23.74 per cent of the population living in Kerala was treated in the private sector.

In 2014, more than 65 per cent of spells of ailments were treated in the private sector due to rising expenditure pressure and public spending has decreased in private hospitals. In 2003, the percentage of patients treated in private hospitals was 150 million.

However, the model estimates in equation (1) may be biased because of the correlation between error term and remittance income. The correlation arises mainly from two sources. First, originates from the unobservables omitted variable bias. Remittances income and household health care expenditure may be may be correlated by wide range of characteristics we lack information on such as household wealth or the family genetic problems affecting the employment, wealth and in turn affects the health expenditure incurred by the household. Second, omitted variables may arise due to joint determination of remittance income and health expenditure. To address the potential omitted variable bias and joint determination of remittance income and health expenditure, we instrument remittance variable in equation (1) using information on migration networks as instruments for migration and remittances (McKenzie and Rappart, 2007, Khan and Valasteeshwaran, 2016).

Table 3: Impact of remittances on household per-capita health expenditure (E estimates)

Table 4: Impact of remittances on access to private healthcare services (E-Probit estimates)

Table 3 Impact of remittances on household per-capita health expenditure (E estimates)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remitt_hhd</td>
<td>0.106***</td>
<td>0.097***</td>
<td>0.151***</td>
</tr>
<tr>
<td>(0.018)</td>
<td>(0.020)</td>
<td>(0.039)</td>
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</tr>
<tr>
<td>Observations</td>
<td>14,117</td>
<td>10,979</td>
<td>3,138</td>
</tr>
</tbody>
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Table 4 Impact of remittances on access to private healthcare services (E-Probit estimates)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remitt_hhd</td>
<td>0.463***</td>
<td>0.397***</td>
<td>0.704***</td>
</tr>
<tr>
<td>(0.054)</td>
<td>(0.062)</td>
<td>(0.120)</td>
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<tr>
<td>Observations</td>
<td>11,179</td>
<td>8,799</td>
<td>2,380</td>
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</tbody>
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Empirical Results

The study uses Kerala Migration survey 2010 funded by Government of Kerala in collaboration with Centre for Development Studies, Trivandrum, Kerala.

The sample households were selected based on the stratified random sampling method. The total sample size is 65,000 individuals corresponding to 15,000 households. Out of total individuals, 12,990 persons had at least the primary level prior to the survey. Of this, 2757 persons (19.8 per cent) live in remittances receiving households and 10,415 persons (80.2 per cent) live in non-remittances receiving households. Out of this, 11,035 persons (85 per cent) consulted doctors, in which 61 per cent went to private hospitals.

Empirical Specification

\[ y_{ij} = \beta_0 + \beta_1 \text{Remit}_hhd + \beta_2 X_{ij} + \epsilon_{ij} \]

Where, \( y_{ij} \) is a continuous variable in case of per capita health care expenditure and also represents binary outcome variable for access to public hospital as one and zero for government and other hospitals. \( X_{ij} \) is a binary variable which is equal to one for household which received remittances from international migrants and the reference group is household that has not experienced migration and has not received any remittances. For robustness check we use remittances as continuous variable, where non-remittance-receiving households are assigned - value zero. \( X \) represents a set of vectors related to covariates describing individual, household, community, regional and wealth characteristics and \( \epsilon \) is the error term.

Conclusion

We found that the model estimates in equation (1) may be biased because of the correlation between error term and remittance income. The correlation arises mainly from two sources. First, originates from the unobservable omitted variable bias. Remittances income and household health care expenditure may be may be correlated by wide range of characteristics we lack information on such as household wealth or the family genetic problems affecting the employment, wealth and in turn affects the health expenditure incurred by the household. Second, omitted variables may arise due to joint determination of remittance income and health expenditure. To address the potential omitted variable bias and joint determination of remittance income and health expenditure, we instrument remittance variable in equation (1) using information on migration networks as instruments for migration and remittances (McKenzie and Rappart, 2007, Khan and Valasteeshwaran, 2016).