

RESEARCH

Open Access



Illness to poverty in India: a qualitative exploration of hardship financing for healthcare

Arya Rachel Thomas^{1,3*} , Santosh Kumar Sahu^{1,2} and Umakant Dash^{1,4}

Abstract

In India, regardless of the government's efforts to control health expenditures, people face large out-of-pocket expenditures (OOPE) for medical bills. Thus, people rely on hardship financing practices such as borrowing or selling to meet their health needs. The southern state of Kerala leads India in a demographic transition, resulting in a lower demographic dividend and an increased older adult population. In this context, we aim to understand how financial shocks from illnesses impact poor households in the Pathanamthitta district of Kerala. The present study seeks to investigate the effectiveness of public hospitals and current government insurance schemes in combating health expenditures, identify the hardship financing strategies households use to mitigate health spending and understand the consequences of hardship financing. 50 in-depth interviews and 5 key informant interviews were conducted across 6 grama panchayats and 1 municipality in the district, and a thematic analysis was used to analyse the data. The findings demonstrate the inability of the existing insurance schemes and public health facilities to provide health care without financially and emotionally draining the people. We find that the strategies to attenuate health costs often start with borrowing and transition to selling assets once the poverty deepens. The study urges policymakers to address the issue of large OOPE on drugs. It also displays the aftereffects of hardship financing-decreased household consumption, and foregone care. The study highlights the need for policy initiatives that provide financial protection against illness as well as social security and welfare assistance to mitigate the existing socio-economic damages from the lack of financial protection.

Keywords Hardship financing, Out-of-pocket expenditures, Demographic transition, India, Kerala

Background

Across the globe, 996 million people encounter catastrophic health expenditures (CHE), of which the majority are from low- and middle-income countries (LMICs) [1]. Ensuring financial protection in health care access and utilisation is central to universal health coverage (UHC). Despite the efforts towards reaching UHC, the impoverishing effects of health expenditure among the extreme-poor people continue to be at 72% [2]. In India, regardless of the government schemes and policies to control health expenditure, the out-of-pocket expenditure (OOPE) exceeds the government spending on

*Correspondence:

Arya Rachel Thomas
thomas.arya@gmail.com

¹Department of Humanities and Social Sciences, Indian Institute of Technology Madras, Chennai, Tamil Nadu 600036, India

²School of Sustainability, Indian Institute of Technology Madras, Tamil Nadu 600036 Chennai, India

³The Hong Kong University of Science and Technology, Hong Kong, Hong Kong S.A.R.

⁴Gokhale Institute of Politics and Economics, Pune, India



© The Author(s) 2025. **Open Access** This article is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, which permits any non-commercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if you modified the licensed material. You do not have permission under this licence to share adapted material derived from this article or parts of it. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/>.

health. The government health expenditure as a share of total health expenditure (THE) is 40.6%, whereas OOPE as a share of THE is 48.2% [3, 4].

An important reason for the large OOPE could be the dual burden of diseases in India [5]. Even though the burden of communicable diseases has declined over time, they still co-exist with the rising burden of non-communicable diseases (NCDs). About 67% of the disease burden in India is contributed by NCDs [6]. And the burden of NCDs is profound among older adults. Across the world, households with older adults suffer the largest brunt of catastrophic health expenses, the highest being in Asia [1].

Theory of full insurance

According to the theory of full insurance, if a household is completely insured, then the exogenous shocks will not affect the consumption levels of the household [7–9]. Studies use this theory to test the extent to which households can absorb shocks due to health expenditure and the evidence of risk sharing between family members and community networks.

In 1991, Cochrane agreed with the theory of full insurance when illness episodes are short-lasting (<100 days); however, the study finds evidence against the theory of full insurance for long-term illnesses and involuntary unemployment [7]. In 1994, Townsend also found that in high-risk villages in south India, there is a minimal influence of idiosyncratic illness shocks on consumption levels, thereby agreeing with the theory of full insurance [9]. In 1995, Kochar found that households can mitigate crop shocks by using labour as insurance [10]. Nonetheless, health shocks will affect consumption as they limit the ability of the labour market to insure households. Gertler and Gruber, in 2002, using activities of daily living to measure illness shocks, found that severe illnesses led to decreased consumption in Indonesian households [8]. Genoni, in 2012, finds contrasting evidence in Indonesia that households can smooth consumption despite illness shocks (measured using detriment in physical functioning), agreeing with the theory of full insurance [11]. To generalise, the past literature indicates that consumption levels remain unaffected when illness shocks are short-term or less severe. Once the severity or duration increases, households struggle to smooth consumption.

Financing of health care in India

The unanticipated nature of health shocks adversely affects consumption patterns or may lead to poverty deepening [8, 12, 13]. There are three strategies to provide financial protection in health care: social health insurance, publicly funded health insurance that purchases care from private or a mix of providers, and

tax-based financing of free or highly subsidised health care [14].

In India, the social insurance schemes, such as CGHS or ESIS, cater to the needs of the people primarily engaged in the formal sector workforce. Also, there is a limited capacity of public hospitals in the country to provide free or subsidised care [15, 16]. Moreover, only 12.9% of rural and 8.9% of urban people are covered by government-sponsored health insurance schemes [17]. Thus, people rely on hardship financing practices like borrowing money or selling assets to meet their health-care expenses [18, 19]. These hardship financing strategies negatively impact household welfare long-term [20, 21]. Borrowing from informal credit markets are the more often-used strategy [22]. In Udaipur, India, poor people living on less than \$1/day spend, on average, 3.84% of their income on interest rates for informally borrowed credit [23]. Using NSS 1995/1996, a study shows that in India, of the total hospitalization expenses, 52% in rural and 44% in urban areas are financed by hardship financing [20].

The levels of demographic transition and social development vary across the Indian states. The south Indian state of Kerala is experiencing a demographic shift, which is at least 25 years ahead of the rest of India [24]. The state's population growth rate is the lowest of all Indian states, with the Pathanamthitta district having the least and a negative growth rate [25]. Moreover, compared to all other Indian states, Kerala has the highest disease-adjusted life years from NCDs than communicable, maternal, neonatal or nutritional disorders (CMNNDs) [26]. The government of India introduced a measure of economic threshold called the poverty line to identify and financially assist people experiencing poverty. The threshold divided the households into above the poverty line (APL) and below the poverty line (BPL). The BPL status was common in Kerala [27]. Moreover, the OOPE is very high in these poor households, and the government-sponsored schemes were unsuccessful in containing them [28]. Moreover, with the rising older adult population, Kerala has the highest old-age dependency ratio in the country [29]. According to the 2011 census, when the ratio was 142 for India, it was 192 for Kerala.

At this juncture, it is essential to explore beyond the large OOPE and understand the reality of how illness affects day-to-day living. The qualitative approach in the study will help us to uncover the experiences of ordinary Indians in dealing with health shocks. The present study explores the pathways through which health shocks may navigate the household to a state of financial impoverishment and poverty trap.

Methods

Study setting and data collection

The present study is conducted in the Pathanamthitta district of Kerala. In Kerala, 7.3% of the rural and 15.3% of the urban population live under the poverty line [30]. The Pathanamthitta district of Kerala comprises of one district panchayat, eight block panchayats, 53 grama panchayats, four urban municipalities and one census town (Government of Kerala) [31].

The qualitative survey for the present study was carried out between the months of May and July 2023 across rural and urban regions of the district. Our sample households are spread across one municipality (urban) and six grama panchayats (rural), namely *Thiruvalla municipality, Kozencherry Panchayat, Naranganam Panchayat, Cherukol Panchayat, Perungara Panchayat, Kaviyoor Panchayat, Niranam Panchayat*. We also collected information from key informants who were stakeholders in various institutions in these study regions. A purposive sampling technique was used to identify the households with two inclusion criteria. We identified (1) poor households which faced (2) severe illness shocks in the recent past. We used semi-structured open-ended questionnaires to conduct in-depth interviews of the households and key informants. In-depth and key informant interviews were conducted in Malayalam, the state's local language.

Ethical approval for conducting our research was received from the IIT Madras- institutional human ethics committee (IEC/2023–01/SKS/25). The research was conducted in accordance with the rules of the Indian Council of Medical Research (ICMR) National Ethical Guidelines for Biomedical Research involving Human

Participants. We received written informed consent from the participants before conducting the interview. All in-depth interviews were conducted in the participant households. Two key informant interviews were conducted face-to-face, and the rest through telephonic conversation. All the interviews were audio-recorded with the prior consent of the participants. The questionnaire used for the study, translated into English, is given in Tables 1 and 2. We continued the interview process until data saturation was achieved [32, 33]. On average, the interviews lasted 30–35 minutes per household and key informant.

Data analysis

We used a six-step thematic analysis to analyse the data [34]. Firstly, all the audio recordings were transcribed verbatim into English from Malayalam, and then we got familiarised with the information. In the second step, we highlighted the important information with different colours to label different research questions. Thirdly, we looked for patterns in this highlighted information to identify the initial themes. In the fourth step, we reviewed the themes identified, and fifthly, we refined the themes defined to get a better understanding of the themes. In the final step, we wrote the report based on the themes. We did not use any software for conducting textual analysis.

Results

50 households and five key informants participated in the study. Table 3 gives the descriptive statistics of the analysis. Most households under investigation (42 out of 50) lived BPL. There are 22 households from the urban

Table 1 The in-depth interview questionnaire for households

SI No	Questions	Prompts
1	Can you give a brief introduction about yourself?	Name, age, job, household composition, household income source, education of members, BPL card, information on any financial support
2	Do you have any financial crisis apart from that caused by illness?	General idea of the economic status of the household
3	Did any member of your family suffer from a severe illness in the last year? How severe was the illness?	What was the illness? (NCD or non-NCD), which member suffered? hospitalization details (gender, which hospital, days bed-ridden, working days lost, death)
4	Was it an unexpected illness? Did it lead to a financial crisis?	Level of preparedness for a shock
5	What was the most significant expense during the treatment?	Direct and indirect costs involved.
6	Did anyone help you out during this time?	Role of family, friends
7	What are the other strategies you used to meet the health expenditure?	Information about dissaving, borrowing, selling of assets/livestock.
8	Are you aware of the government schemes to combat illness, and if yes, were they helpful?	Identify the scheme they used, extend of financial protection received
9	How do you think this health shock has affected your family's well-being?	Has it changed food consumption levels? Did they sacrifice the consumption of other goods? Did labour substitution happen? Has it led to poverty?
10	Do you think you will resort to any of these coping strategies again if you suffer from illness again?	Rational for resorting to hardship financing
11	What do you think can be the solution to this problem?	Household perspectives

Table 2 Key informant interview questionnaire

SI No	Questions	Prompts
1	Can you give a brief introduction about yourself?	Name, job
2	What does your organization do, and what are your roles in this organization?	Affiliation, leadership roles
3	What is the general health situation of the identified households in this area?	The economic and ethnic background of the people, common diseases in the area, financial strains of the people
4	What is the general situation of public funded hospitals in the area?	Reality of government interventions, working conditions of government hospitals
5	Are you aware of the financial coping strategies poor households undertake?	Ill-effects of hardship financing
6	How is your organization contributing to improving the health of the household?	Day-to-day role and challenges
7	What do you think can be further done to combat health expenditure?	Stakeholder perspectives

town and 28 from rural areas. A significant section of our study group population is daily wage workers. The main reported illness in our study group of 50 households was cancer, with 13 households reporting it, followed by 11 households reporting heart diseases, and seven reporting strokes. About 18 households in rural and 10 in urban areas report having more than one member suffering from illness. All of the households we have identified to be struggling financially from ailments are suffering from NCDs or injuries. 22 of our 28 rural households had insurance coverage, whereas 13 of our 22 urban households had insurance coverage. None of the households under study is self-insured.

Figure 1 illustrates the two alternative financial responses to illnesses. The 'A' section represents the ideal state where the government can fully protect households from financial shocks of illnesses and thereby achieve the goal of UHC. Whereas 'B' symbolises the present scenario in India, where the government fail to safeguard people from health expenditure, the resultant hardship financing, and the poverty trap that arises from it. The 'B' section of the figure shows the actual household financial responses to illnesses we have observed in our study population, revealing the pathway of four major themes that emerged from our research – unanticipated health shock, government intervention, hardship financing strategies, and poverty.

Unanticipated illness

The unanticipated nature of the health shock and the unpredictability in the timing of its appearance come as an emotional and financial burden in Indian households. The majority of ill individuals in our study population suffer NCDs, and almost all of them are multimorbid. Among participants in rural areas, cancer is the most common ailment, followed by heart disease. In our urban participants as well, cancer is the most common, followed by stroke as the second most common disease. A key informant from a rural area reported cancer and kidney disease as the most common and financially impoverishing diseases found among the patients, which they help through their palliative care centres. The adverse

impact of illness is magnified when the household's primary income provider suffers an unanticipated health shock and becomes unable to work. We also find evidence of multiple household members suffering from severe health shocks at the same time. A female participant stated:

My husband was the breadwinner of our family, but he is no longer able to work because he fell and injured his spine. Our financial status worsened after this, which got me worried about my family, and as a result, I suffered a heart attack.

Another male participant stated: "My wife died a long time ago. Soon after, I got paralysed and lost my job because of the illness. Our financial situation is so bad that we cannot afford a helper. Children help me in the morning, do all the household chores by themselves, and then they go to college to study. We were really sad initially, but now decided to face this. I have to live for my children."

Government intervention

The majority of the households under study were aware of the state-sponsored health insurance schemes. However, only a few households were satisfied with the financial security provided by these schemes. The existing schemes cover hospitalisation expenditures, including surgeries in government or empanelled private hospitals. However, in most households in our study population, the benefits they receive from the schemes are often limited. We observe the following reasons why the participants are unable to have their healthcare needs met through government intervention:

- Some participants do not have an insurance card and, therefore, do not receive any benefits. Six out of 28 participants in the rural areas, and nine out of 22 in the urban areas, do not have insurance cards.
- Even among those who have the card, when faced with a severe illness shock, they are immediately taken to the nearest hospital, preferably a private

Table 3 Descriptive statistics

In-depth interviews (n = 50)	Rural (n = 28)	Urban (n = 22)
Area of Residence		
Thiruvalla Municipality	-	22
Kozencherry Panchayat	03	-
Naranganam Panchayat	08	-
Cherukol Panchayat	04	-
Perungara Panchayat	11	-
Kaviyoor Panchayat	01	-
Niranam Panchayat	01	-
Ill member composition		
With more than one member suffering from severe illnesses	18	10
One member ill	09	13
Marital Status		
Married	21	12
Unmarried	07	10
Source of household income		
Households with a source of income	06	05
Daily wage worker or menial income	19	10
white collar jobs	03	07
Gender		
Male	12	09
Female	16	13
Age		
0–30	01	02
31–45	03	03
46–60	13	06
60+	11	11
Major Illness		
Cancer	07	06
Paralysis	02	04
Injury	01	01
Kidney-related	04	01
Heart disease	09	02
Ischemic stroke	-	07
Other	05	01
Family size		
Nuclear	17	12
Extended	11	10
Insurance		
Yes	22	13
No	06	09
Income status		
APL	02	06
BPL	26	16
Key Informant Interview (n = 5)		
Rural		Urban
1. Convenor of pain and palliative care center of a church		1. Nurse at a pain and palliative care center of a political party
2. Coordinator of a charitable society		2. A former municipal councilor and government school teacher
		3. ASHA worker

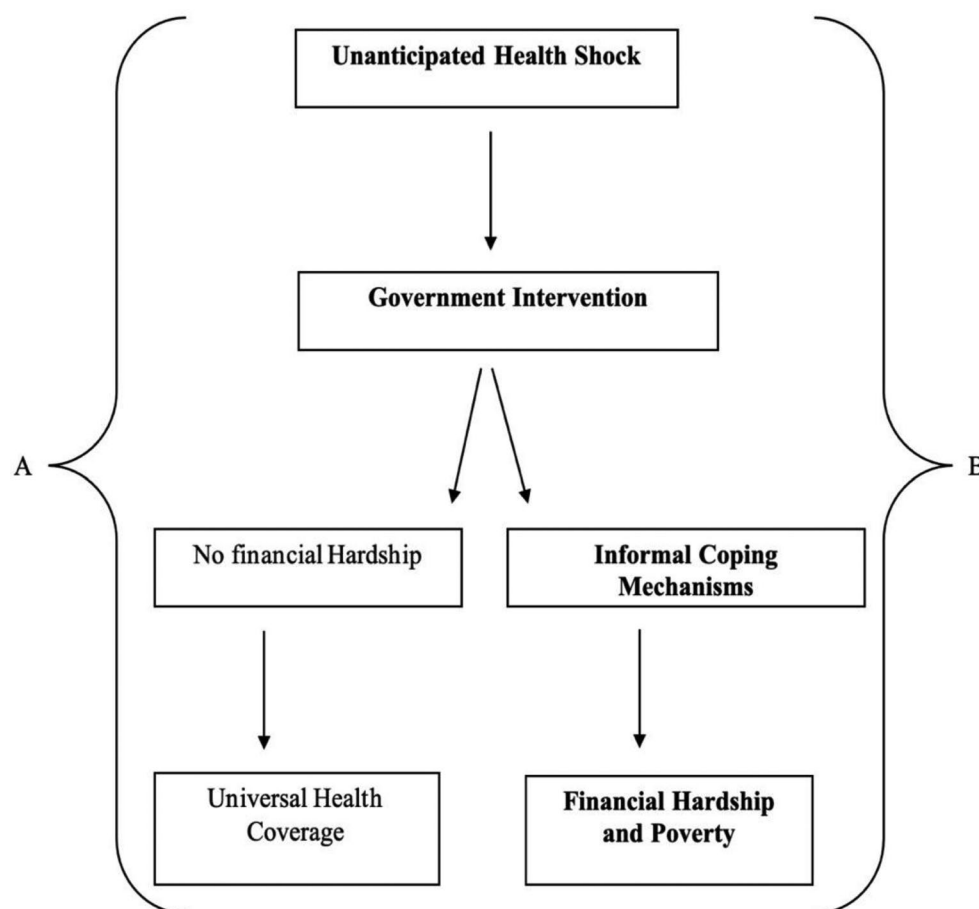


Fig. 1 Alternative financial responses to illnesses

hospital. Several participants believe that the chances of survival are higher in private hospitals.

- c) However, many private hospitals are not empanelled under government insurance schemes. The poor households cannot use their insurance card for the treatments in these hospitals and have to pay out of pocket. Even if they are empanelled, the hospitals are increasingly reluctant to accept patients with government insurance cards.
- d) Government hospitals do not often provide the healthcare that is required, or access is a problem due to overcrowding, issues related to delays, and a lack of confidence in their quality of service. Though government hospitals are expected to provide free or subsidised care, there is substantial OOPE on medicines and diagnostics, and there are also substantial user fees.

A key informant stated that:

The Kerala government is yet to reimburse crores of rupees to the medical companies and empanelled private hospitals for treating the poor patients

through Karunya health insurance card. So now the private hospitals indirectly discourage poor patients with insurance cards from taking treatment at their hospitals.

Secondly, even in government hospitals, some participants face several obstacles to accessing health insurance. One participant stated:

My son was hit by a car, and we rushed him to a government hospital. The scheme did not cover the initial expenses at the hospital because, in the rush, we forgot to carry our health insurance card.

Among those who were able to get health access, some faced long waiting hours, especially in public hospitals for cancer treatment. Some illnesses are not covered by insurance, and the patient will have to pay out of pocket for them. A participant stated:

We have an Arogya insurance card, but my husband has liver cirrhosis. The scheme does not cover his expenses.

Similarly, a participant whose wife and mother suffer from cancer stated: “The previous health insurance scheme had a shorter waiting period. Currently, the many procedures before doing chemo make it cumbersome for us. The hours-long paperwork and queue every time we go for chemotherapy and radiation take a toll on the patient and bystanders. Even then, the scheme does not cover the follow-up treatment expenses. Sometimes, we come across patients who stand in the queue for hours before they realise the scheme does not cover their treatment.”

Apart from the long waiting hours, some participants experienced delayed treatment and negligence towards people with low income at public hospitals.

One participant stated: “My son had multiple leg fractures. In the hospital, they kept shifting him between departments for two weeks without properly treating him. And because of this, his leg got severely infected.”

Similarly, a participant stated: “When my wife was diagnosed with cancer, the doctor at the public hospital gave us a date for surgery six months away, which terrified us. And when we expressed our concern and asked him if she would be all right until then, he said it is in God’s hands.”

Finally, and most importantly, a big problem of the existing health insurance programs faced by our study participants is the exorbitant expenses of medicine and tests not covered by the scheme or the public hospitals. All the participants in our study who are beneficiaries of government-sponsored health insurance schemes have large out-of-pocket payments on drugs and medical tests like blood tests, scans, mammograms, etc. Sometimes, even when the hospitals have the facilities to do tests, they make the patients do expensive tests from outside, leading to impoverishment. A participant stated that:

For my surgery in the government medical college, we received a benefit from having the Arogya insurance card, but had to get done a lot of tests outside for which we spent around Rs. 30,000. Every month, I spend Rs. 4,000 on medicines and an additional Rs. 900 for blood checkups.

Similarly, a key informant stated that: “In our government hospitals, the patients do not get all the medicines they need. They only get free basic medicines for cholesterol, blood pressure or sugar (diabetes). Other medicines prescribed have to be bought from shops. But poor people do not have the ability to afford them. The government should look into it. Only charitable societies really help them.”

The households in our study with bed-ridden patients faced an additional significant expenditure on diapers, cleaning pads, etc.

The mother of a young adult suffering kidney failure stated: “We do not have enough bedsheets. To be honest, we don’t even have many changes of clothes. My son does not have control over his bowel movement. So, we have to keep changing bedsheets. Now I use my “sari” (an Indian women’s traditional garment) instead of bedsheet because we don’t have enough.”

Apart from the health insurance schemes, the participant households benefited from various social security pensions and government distress relief funds. Many older adult households do not have a source of income and depend mainly on these pensions for their day-to-day expenses. However, the participant households also reported that the pensions are often irregular.

Financial coping mechanisms

Except for a few households where poverty resulted from an unexpected illness of the main breadwinner, most of the participant households were already poor. Their ability to save out of income is limited, and they prioritise saving money for building/repairing homes or for the weddings of their children. Saving for potential health contingencies is not a priority in these households. Some participants consider possessing land or gold jewellery as a defence against emergencies. A participant stated:

We had saved some money for our daughter’s wedding. Now, when my son suddenly fell sick, we had to use all the money for him. We have nothing left. Our daughter is unmarried because of this. I don’t know what to do.

Similarly, another participant stated: “Four weeks ago, I had severe back pain, so I went to the government hospital. The doctor asked me to take an X-ray. But once I went to the hospital staff, they said the X-ray machine in the hospital does not work. So, I had to go to a private center to take it and pay Rs.350. The auto-rickshaw ride itself cost me Rs. 150, and the medicine Rs. 550. I used the money I had kept aside to buy cooking gas cylinder for this purpose. Because of these expenses, I can’t afford to visit the hospital for a follow-up.”

The study has identified a set of coping strategies that the participant households resort to finance health care. Most households resort to more than one strategy in the process. Apart from conventional coping strategies like borrowing and selling assets or contributions from friends and families, we have observed evidence of increasing foregone care and changing lifestyles.

Borrowing money and selling of assets

Borrowing money is the most frequently used strategy in our study population. Participants have borrowed money by pawning their house, gold jewellery, or loaning

money from microfinance, chit funds, or other informal credit lenders. Many households have pawned their own, relatives' or friends' gold to finance health care. The only exceptions are the people who do not have any gold to pawn. The poor people often rely on the informal credit market rather than formal banks for money. This is because of the urgency and inability to produce sound collateral that the formal banks require. However, borrowing from these sources gives a very temporary relief. Very often, the interest rates that come with the informal credit are unaffordable, leading to the loss of their collateral and pushing them further into poverty. A woman stated:

Since my father was ill for a long time, we always struggled financially. But at that point, we survived because my mother was still working. But now she is sick. We have gold loans, borrowed money from money lenders. We are trying to sell this house to pay back the money.

Chit funds are trust-based financial agreements among a group of people widely used in India to pool funds. Each group member has to contribute a certain amount of money in regular, predetermined intervals, and one member of the group gets the lump sum amount collected per session, and it keeps happening until all members benefit from it. This strategy is widely used among poor households in our study population to meet their large financial needs, especially among women of the household who meet through neighbourhood groups such as Kudumbashree in Kerala. However, many of them struggle to pay back the money. A woman stated:

I started a monthly chit fund, and usually, I keep the collected money from all the group members. But suddenly, when my mother fell ill, I took her to the hospital and ended up spending that money on her treatment. Tomorrow, I have to pay everyone back the money. I don't know how I will do it!

Very often, as the financial instability worsens, the strategy shifts from borrowing to selling off assets. People resorted to selling expensive jewellery, land, homes or livestock to meet their expenses. A participant woman stated:

My husband is an alcoholic. I am a daily wage worker. The whole house runs on my income. If I am ill and don't go to work today, the entire family will starve the day. We have two loans from microfinance, loaned money from Kudumbashree worth Rs. 30,000, pawned gold for money, and sold our goats over time. So weekly I have to pay Rs. 1000 to pay

these back. So, if I miss work, I cannot afford it and will again have to pawn or sell something.

Contributions from friends/family or charitable organisations

Our study shows mixed evidence of contributions from friends/family members depending on the area of residence. Most participant households report direct or indirect contributions from friends and family members to a household which suffers from unexpected needs. However, the gifts from friends or neighbours differ in urban areas compared to rural areas. The participants from urban areas report lower financial or non-financial help from their neighbours. One woman from a participant urban household stated:

The government did not help us because, on the records, we are still APL. We live in the municipality area and are the only poor people in this locality. Everyone assumes we are well-off, and not even neighbours help us.

Especially in participant households with a history of sound financial status before the illness episode, friends and family assume that the households are able to help themselves and thereby wouldn't extend a helping hand. Unfortunately, potential health needs were never a priority in any of these households, and none of them were able to afford it at the time of our survey. A woman who suffers from chronic asthma and whose husband is paralysed stated:

Since we are Gulf returnees, no one offered to help us in our community and neighbourhood. Not even siblings helped due to this. But in reality, my husband was an alcoholic, and thereby have no savings.

For some families, more than a financial burden, they felt abandoned by their dear ones during a crisis. A participant stated that:

When I met with the accident, my family held me closer. But my friends did not even give me emotional support.

Moreover, most of the participants felt that their extended family members also had financial constraints. Similar to our study participants, most of their extended families also belonged to lower-income brackets. Therefore, the families had limitations in supporting them. Regardless of these shortcomings, many households, especially in rural areas, received help from family/friends or charitable organisations. The churches, political parties, palliative care trusts, charity of private hospitals, non-governmental organisations, and government

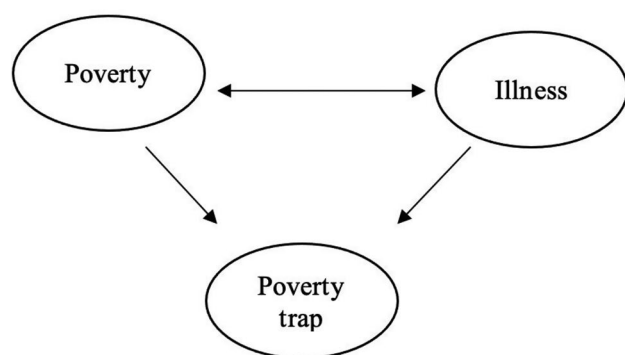


Fig. 2 Mutually causal relationship between illness and poverty

relief funds are the most commonly identified organisations that helped the households.

A mother of a paralysed young adult stated, “My son’s friends are of great help to us. Since my son is a bit hefty, his father alone cannot carry him to the car when we go to the hospital. So, every time we go, his friends come, and their help is very valuable. In fact, an old friend of his from school, with whom he had not even been in touch for a long time, randomly called one day. On realising that my son was paralysed and struggling, along with some other friends, he brought a car full of necessary items for him. They also help him financially. They bought a medical appliance worth Rs. 18,000 for him.”

Poverty

Figure 2 displays a mutually causal relationship between illness and poverty and the resultant poverty trap that may arise from it. For participant households already living in poverty, the sickness episode worsened their financial status. However, for some others, they were pushed into poverty due to illness. This is due to an unexpected severe illness, especially to the primary breadwinner of the family and the resultant unemployment. This is especially true for participants who do not have formal savings or emergency funds for unforeseeable contingencies. The government-sponsored insurance schemes are available only to the poorest section of society, and poor people are often identified based on the colour of their ration card (saffron or yellow).

A ration card is a document reflecting the income status of the household for official purposes of the state government. The card’s colour varies from yellow to saffron to white, in the increasing order of the household’s income status. Depending on the card’s colour, food grains are distributed progressively to people experiencing poverty. Participant households forced into poverty from illness costs report that the procedures for converting their ration card from APL to BPL are challenging and cumbersome. A participant stated that:

We used to live abroad. I was a supervisor in a company. My wife was a teacher. She died six years ago, and eight months later, I got paralysed. Since then, I cannot do anything without help. I lost my job, and this financially handicapped us. We returned to India, don’t have a house, and are temporarily living in this ancestral house, which isn’t partitioned among my siblings yet. Despite our poverty, our ration card colour is white, reflecting our economic status as APL, thereby making us ineligible for government-sponsored benefits. We are unaware of government schemes, nor has the panchayat helped us. Since I cannot go by myself, I have sent my daughter multiple times to request the authorities convert the ration card. They came for enquiry and told us we would call over the phone and inform you of your status. They never called. It has been two to three years.

Another participant echoed: “My only daughter died of cancer. My husband suffers from cancer. He doesn’t have a job anymore. He recently went to Pathanamthitta (district head office) to try to convert our ration card colour from APL to BPL. But they refused to do so because our house is big.”

Reduced consumption

In our study, the poverty resulting from illness, or worsened by illness, affects household consumption levels, often reflected in food consumption. Some participants have been forced to compromise on other day-to-day expenses. Depending on the household income levels, food grains are distributed to the households through their ration cards. Participant households report that the food grains supplied through ration cards greatly help them, and many poor households depend solely on these food grains to survive. However, the food grains the government provides are insufficient in providing all the nutrition the people need.

A woman participant stated: “I suffer from cancer. But I live alone and have no one to help me. Therefore, I am forced to go for daily wage work. I don’t know why, but recently, when I walk by, my body is trembling, and I am shivering. I don’t feel any energy. I eat the ‘ration rice’. Apart from the rice, we used to receive food kits from the panchayat for a few months. Now they stopped giving it.”

Sometimes, some participants even isolate themselves from the rest of their community to reduce their day-to-day expenses. A participant household stated:

I am a heart patient, and medical lab test is a big expense for us. Because of this, we have to put limits on our food consumption. After paying for newspapers, milk, and contributions to the church, we are

struggling to meet our expenses inside the house, like food consumption. Moreover, in our culture, if we go to a funeral or a wedding, we usually give the concerned family some money. But now, because of our financial limitations, we no longer go for such events.

Foregone care

Another crucial aftereffect of poverty in our study population is households being forced to give up health care. Especially in participant households already suffering from severe illness, if a second member falls ill, one of the person's health needs might get compromised. In our study population, delayed or foregone care is often higher for an elderly household member or a member who is not the family's primary income earner. A woman participant stated:

My children are daily wage workers. Both of them met with accidents and are currently struggling to go for regular jobs. Therefore, when my husband suffered a heart attack, we could not do surgery for two months because of a lack of money. Finally, the doctor saw how poor we were and gave me a doctor's certificate with which I went to churches and charity organisations requesting money.

An elderly participant stated: "I suffer from heart disease. We belong to the BPL category but do not have Arogyashri (government) insurance. The doctor told us about the limitations of medicine and that an operation is necessary. He said the surgery would cost Rs.800,000 in a private hospital; at least, we need to have Rs.500,000 in hand. But since we cannot afford it, I decided not to do it."

Thus, in our study population, the unanticipated health shocks and the resultant informal financial coping mechanisms worsen existing poverty or even push people into poverty.

Discussion

Drawing on our qualitative findings, this section discusses the reasons that drive people to resort to hardship financing in the event of an illness, as well as the impoverishing effects of hardship financing on their households. We identify two main barriers to the realisation of the "theory of full insurance" in our study population. The first reason is the latent inability of the poor household to self-insure. In India, self-insurance is as low as 0.2% in rural and 3.8% in urban India [17]. We find evidence of low savings rates and self-insurance against health needs in our study population. A related study based in Bangladesh shows that savings in poor households are for earmarked purposes in the foreseeable future but not for unforeseeable needs [35]. In our study population, we see

similar evidence of reserving funds for building/repairing homes or for the weddings of their children. It is very common for people to dip into money earmarked for other purposes to meet the shocks arising from illnesses.

Secondly, the expected free or subsidised care through public hospitals nor the current government-sponsored insurance schemes in India, are able to provide adequate financial protection to the people. Over the years, the government of India has introduced various health insurance schemes targeting people with low incomes to address their healthcare needs and to offer them financial protection for health needs [36]. The Kerala government implemented Karunya Arogya Suraksha Padhathi (KASP) in July 2020, converging Pradhan Mantri Jan Arogya Yojana and existing state-level schemes [37]. However, literature shows that people receive little benefit from the insurance schemes in India [38, 39]. Moreover, there is evidence of increased hardship financing for insured individuals [18]. An important approach through which India aims to ensure financial protection in health is the tax-based financing of free or subsidised care in the public hospital. However, we find that all the participants of our study faced hurdles to healthcare while using public hospitals due to long waiting hours, complicated procedures and negligence in health provisions. But most importantly, almost all the participants faced exorbitant expenses for medical tests and drugs. Often, the hospital provides only the basic medicines; the rest must be bought from private pharmacies, contributing to the largest portion of their OOPe. Although the literature indicates that the most crucial reason for impoverishment in Indian households from health shocks is the large OOPe on drugs and pharmaceuticals, especially for the people living BPL (88%) [40]. The government schemes do little to address it.

Along with this, the state experiences a rising burden of NCDs. The state of demographic transitioning that Kerala experiences is at least 25 years ahead of the rest of India. Parallely, there has been an epidemiological transition from communicable to NCDs. The enormous burden of NCDs and the incomplete financial protection despite the subsidised health care at government hospitals and government-sponsored insurance schemes force people to resort to hardship financing. Literature suggests that borrowing is a more commonly used strategy throughout the LMICs, except in Africa [22]. Similarly, our findings show that borrowings are the most frequently used strategy to finance health needs. It is often the first strategy people resort to while facing illness-related expenditures due to their low savings rate. Besides, we also find that selling assets is a supplemental hardship financing strategy that people use, usually in the long run, if they cannot meet their financial needs through borrowing alone. Moreover, the strategies vary across rural and urban

areas regarding contributions from family/friends as a strategy to mitigate health shocks. There is evidence of the protective effects of neighbourhood social cohesion in reducing the food shortage in racial and ethnic minority households [41]. We find that social connections could be stronger among poor households in rural areas compared to urban areas, with our limited participant observations.

The cost of resorting to hardship financing strategies of borrowing or selling is often poverty. It pushes already BPL households further into a poverty trap [42]. At the same time, we also find that some households have become BPL after the health shock. These households were not eligible for government-sponsored insurance before the health shock. In our study, the lack of a safety net during a health shock deteriorated their financial status. These households are often referred to throughout the literature as the “missing middle” [43, 44]. They are the people between the poor and relatively rich who find private voluntary insurance too expensive but, at the same time, are ineligible for state-sponsored insurance. Thus, unanticipated severe health shocks and lack of health insurance expose these people to CHE [44].

In exploring the poverty arising from health shocks, we find that some participants compromise on their food consumption and even forgo the health care of some members, often the elderly and other household members who are not the primary income earners. Global evidence underlines this reality. Evidence from Bangladesh shows that one out of every four people incurs CHE, and 14% of the people face foregone care [45]. In the United States, with the increase in debt, there is an increase in foregone care [46], whereas social insurance has been able to overcome foregone care in China to some extent [47]. There is evidence of disproportionately large foregone care in poorer and rural areas in India [48]. The literature also points to a lowered household consumption arising from health expenditures [49, 50]. We also find that this relationship between illness and poverty could be mutually causal, where illness pushes people into poverty, and poverty may, in turn, worsen their financial status [51].

Our study has some potential limitations that need to be addressed. Firstly, the small sample size makes it difficult to generalise the results for a larger population beyond the locality where the study was conducted. Secondly, some respondents, especially in the urban areas, were a little reluctant to admit their actual financial status, which may lead to respondent bias. Additionally, the purposive sampling method of the study increases the risk of observer bias. However, the study helps shed light on the role of government in safeguarding people from falling into a poverty trap from health contingencies.

Conclusion

The qualitative findings from the paper suggest that the low savings rate, coupled with the underperforming government insurance schemes and the lack of free or adequately subsidised quality care in public health facilities, force the households in the study population to resort to hardship financing to pay their healthcare bills. The strategies to attenuate the health cost often start with borrowing and transition to selling assets once the poverty deepens. The paper highlights the various pathways through which illness shocks and the resultant hardship financing can lead to poverty in a low-income setting. Relying on these coping mechanisms has long-term consequences and may lead to further poverty deepening and social vulnerability, and households may even be forced to reduce consumption levels and forgo care for the elderly or some family members who are not the primary income earners. The study's findings suggest that the relationship between illness and poverty can be mutually causal. It is critical to monitor the households that are pushed to a BPL status and those being pushed from poverty to extreme poverty due to the health care costs.

The study also shed light on the social security or welfare assistance needs of poor people who are burdened by their severe illnesses or disability brought about by their illness. For instance, there is a pressing need to improve the regularity of social security pensions and government distress relief funds and offer an alternative means of income for the disabled who have lost their livelihood source. The study highlights the need for policy initiatives that provide financial protection against illness as well as social security and welfare assistance to mitigate the existing socio-economic damages from the lack of financial protection.

Acknowledgments

We want to acknowledge Dr. Thomas Mathew for the support during data collection.

Author contributions

ART has contributed to the conception, analysis, design of work, analysis, interpretation of data, manuscript writing, and revision of work. SKS has contributed to obtaining ethical clearance and design of the work. UD has contributed to the conception and design of work. All authors reviewed the manuscript.

Funding

The authors receive no funding for the completion of this study.

Data availability

No datasets were generated or analysed during the current study.

Declarations

Ethical approval and consent to participate

Received ethical clearance from IIT Madras- institutional human ethics committee (IEC/2023-01/SKS/25) for conducting the survey.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Received: 15 May 2024 / Accepted: 3 October 2025

Published online: 07 November 2025

References

- World Bank, & World Health Organization. Global monitoring report on financial protection in health 2021. 2021a.
- World Bank, & World Health Organization. Tracking universal health coverage 2021 global monitoring report. 2021b.
- Government of India. Economic survey 2022-23. 2023. <https://www.indiabudget.gov.in/economicsurvey/>.
- National Health Systems Resource Centre. National health accounts estimated for India (2019-20). 2023.
- Yadav S, Arokiasamy P. Understanding epidemiological transition in India. *Globalizat Heal Act*. 2014;7(1):23248.
- Sarma PS, Sadanandan R, Thulaseedharan JV, Soman B, Srinivasan K, Varma RP, et al. Prevalence of risk factors of non-communicable diseases in Kerala, India: results of a cross-sectional study. *BMJ Open*. 2019;9(11). <https://doi.org/10.1136/bmjopen-2018-027880>.
- Cochrane JH. A simple test of consumption insurance. *J Polit Econ*. 1991;99(5):957–76.
- Gertler P, Gruber J. Insuring consumption against illness. *The Am Econ Rev*. 2002;92(1):51–70. <https://doi.org/10.1257/000282802760015603>.
- Townsend RM. Risk and insurance in village India. *Econometrica*. 1994;62(3):539–91.
- Kochar A. Explaining household vulnerability to idiosyncratic income shocks. *The Am Econ Rev*. 1995;85(2):159–64. <https://doi.org/10.2307/2117911>.
- Genoni ME. Health shocks and consumption smoothing: evidence from Indonesia. *Econ Dev Cult Change*. 2012;60(3):475–506. <https://doi.org/10.1086/664019>.
- Atake E-H. Health shocks in Sub-Saharan Africa: are the poor and uninsured households more vulnerable? *Health Econ Rev*. 2018;8(1):26. <https://doi.org/10.1186/s13561-018-0210-x>.
- Quintussi M, Van de Poel E, Panda P, Rutten F. Economic consequences of ill-health for households in northern rural India. *BMC Health Serv Res*. 2015;15(1):179. <https://doi.org/10.1186/s12913-015-0833-0>.
- Musgrove P. Public and private roles in health: theory and financing patterns. *World Bank Discussion Papers*; No. WDP. 1996;339.
- Kumar A, Meratwal G, Barik RR, Tandon P. Effect of public-funded health insurances in financial protection for hospitalisation in Rajasthan state, India: evidence from a national sample survey. *Clin Epidemiol and Global Health*. 2023;24:101453. <https://doi.org/10.1016/j.cegh.2023.101453>.
- Rao MG, Choudhury M. Health care financing reforms in India. 2012.
- SSO. Key indicators of social consumption in India: health. 2019.
- Thomas AR, Dash U, Sahu SK. Illnesses and hardship financing in India: an evaluation of inpatient and outpatient cases, 2014-18. *BMC Public Health*. 2023;23(1). <https://doi.org/10.1186/s12889-023-15062-7>.
- Thomas AR, Muhammad T, Sahu SK, Dash U. Examining the factors contributing to a reduction in hardship financing among inpatient households in India. *Sci Rep*. 2024;14(1):7164. <https://doi.org/10.1038/s41598-024-57984-1>.
- Flores G, Krishnakumar J, O'Donnell O, van Doorslaer E. Coping with health-care costs: implications for the measurement of catastrophic expenditures and poverty. *Health Econ*. 2008;17(12):1393–412. <https://doi.org/10.1002/hec.1338>.
- Wagstaff A, Lindelow M. Are health shocks different? Evidence from a multi-shock survey in Laos. *Health Econ (U Kingd)*. 2014;23(6):706–18. <https://doi.org/10.1002/hec.2944>.
- Kruk ME, Goldmann E, Galea S. Borrowing and selling to pay for health care in low- and middle-income countries. *Health Aff (Millwood)*. 2009;28(4):1056–66. <https://doi.org/10.1377/hlthaff.28.4.1056>.
- Banerjee AV, Duflo E. The economic lives of the poor. *J Econ Perspect*. 2007;21(1):141–67. <http://www.radix.uita.mx/ennvihi/>.
- Goswami B. Understanding the demographic changes in Kerala: an exploration. *J Soc and Econ Devel*. 2023. <https://doi.org/10.1007/s40847-023-00262-2>.
- Government of Kerala. Economic review 2016. 2017.
- Dandona L, Dandona R, Kumar GA, Shukla DK, Paul VK, Balakrishnan K, et al. Nations within a nation: variations in epidemiological transition across the States of India, 1990–2016 in the global burden of disease study. *Lancet*. 2017;390(10111):2437–60. [https://doi.org/10.1016/S0140-6736\(17\)32804-0](https://doi.org/10.1016/S0140-6736(17)32804-0).
- Menon J, Vijayakumar N, Joseph JK, David PC, Menon MN, Mukundan S, et al. Below the poverty line and non-communicable diseases in Kerala: the epidemiology of non-communicable diseases in rural areas (ENDIRA) study. *Int J Cardiol*. 2015;187(1):519–24. <https://doi.org/10.1016/j.ijcard.2015.04.009>.
- Philip NE, Kannan S, Sarma SP. Utilization of comprehensive health insurance scheme, Kerala. *Asia Pac Educ Rev J Public Health*. 2016;28(1_suppl):775–85S. <https://doi.org/10.1177/1010539515602306>.
- Rajan SI, Shajan A, Sunitha S. Ageing and elderly care in Kerala. *China Report*. 2020;56(3):354–73. <https://doi.org/10.1177/0009445520930393>.
- Kerala State Planning Board. Economic review 2022. 2023. https://spb.kerala.gov.in/sites/default/files/2023-02/ENGLISH%20FINAL%20PRESS%2004.02.2023_0.pdf.
- Kerala G. Pathanamthitta. 2023 September 13. <https://pathanamthitta.nic.in/en/>.
- Guest G, Bunce A, Johnson L. How many interviews are enough? An experiment with data saturation and variability. *Field Method*. 2006;18(1):59–82. <https://doi.org/10.1177/1525822X05279903>.
- Lincoln Y, Guba E. Naturalistic inquiry. *Sage*; 1985.
- Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Res in Psychol*. 2006;3(2):77–101. <https://doi.org/10.1191/1478088706qp0630a>.
- Kabir A, Datta R, Raza SH, Maitrot MRL. Health shocks, care-seeking behaviour and coping strategies of extreme poor households in Bangladesh's Chittagong Hill tracts. *BMC Public Health*. 2019;19(1). <https://doi.org/10.1186/s12889-019-7335-7>.
- National Health Authority. About Pradhan Mantri Jan Arogya Yojana (PM-JAY). Government of India; 2019. <https://nha.gov.in/PM-JAY>.
- State Health Agency Kerala. Karunya Arogya Suraksha Padhathi. National Health Authority; 2023. <https://sha.kerala.gov.in/karunya-arogyasuraksha-padhathi/#>.
- Garg S, Chowdhury S, Sundaraman T. Utilisation and financial protection for hospital care under publicly funded health insurance in three states in Southern India. *BMC Health Serv Res*. 2019;19(1):10041. <https://doi.org/10.1186/s12913-019-4849-8>.
- Karan A, Yip W, Mahal A. Extending health insurance to the poor in India: an impact evaluation of Rashtriya Swasthya Bima Yojana on out of pocket spending for healthcare. *Soc Sci Med*. 2017;181:83–92. <https://doi.org/10.1016/j.socscimed.2017.03.053>.
- Shahrawat R, Rao KD. Insured yet vulnerable: out-of-pocket payments and India's poor. *Health Policy Plann*. 2012;27(3):213–21. <https://doi.org/10.1093/heapol/czr029>.
- Denney JT, Kimbro RT, Heck K, Cubbin C. Social cohesion and food insecurity: insights from the geographic research on wellbeing (GROW) study. *Matern Child Health J*. 2017;21(2):343–50. <https://doi.org/10.1007/s10995-016-2119-5>.
- Dupas P. Health behavior in developing countries. *Annu Rev Econom*. 2011;3(1):425–49. <https://doi.org/10.1146/annurev-economics-111809-125029>.
- Bhat R, Holtz J, Avila C. Reaching the missing middle: ensuring health coverage for India's urban poor. *Health Syst Reform*. 2018;4(2):125–35. <https://doi.org/10.1080/23288604.2018.1445425>.
- Anurag K, Rakesh S. Health insurance for India's missing middle. *Niti Aayog*; 2021. <https://doi.org/10.31219/osfio/s2x8r>.
- Rahman MM, Islam MR, Rahman MS, Hossain F, Alam A, Rahman MO, et al. Forgone healthcare and financial burden due to out-of-pocket payments in Bangladesh: a multilevel analysis. *Health Econ Rev*. 2022;12(1):5. <https://doi.org/10.1186/s13561-021-00348-6>.
- Kalousova L, Burgard SA. Debt and foregone medical care. *J Health Soc Behav*. 2013;54(2):204–20. <https://doi.org/10.1177/0022146513483772>.
- Li X, Chen M, Wang Z, Si L. Forgone care among middle aged and elderly with chronic diseases in China: evidence from the China health and retirement longitudinal study baseline survey. *BMJ Open*. 2018;8(3):e019901. <https://doi.org/10.1136/bmjopen-2017-019901>.
- Patenaude B, Rao KD, Peters DH. An empirical examination of the inequality of forgone care in India. *Health Syst Reform*. 2021;7(2). <https://doi.org/10.1080/23288604.2021.1894761>.

49. Panikkassery AS. Impact of out of pocket health expenditure on consumption pattern of below poverty line households in India. *Millennial Asia*. 2020;11(1):27–53. <https://doi.org/10.1177/0976399619900608>.
50. Wang H, Zhang L, Hsiao W. Ill health and its potential influence on household consumptions in rural China. *Health Policy*. 2006;78(2–3):167–77. <https://doi.org/10.1016/j.healthpol.2005.09.008>.
51. Lasco G, Yu VG, David CC. The lived realities of health financing: a qualitative exploration of catastrophic health expenditure in the Philippines. *Acta Med Philipp*. 2022;56(11).

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

About Arya Rachel Thomas Arya Rachel Thomas is an economist and researcher whose work focuses on health economics, development policy, and migration studies. She completed her PhD in the Department of Humanities and Social Sciences at the Indian Institute of Technology (IIT) Madras, where her research explored issues such as household health expenditures, hardship financing, and aging-related challenges. She has also served as a postdoctoral fellow at the Hong Kong University of Science and Technology (HKUST).

About Santosh Kumar Sahu Santosh Kumar Sahu is an Associate Professor in the Department of Humanities and Social Sciences at the Indian Institute of Technology Madras, and is also affiliated with the School of Sustainability, and the Energy Consortium at IIT Madras. His research interests span industrial economics, energy economics, climate change, and sustainable energy policy, focusing on the intersection of economic development and environmental sustainability.

About Umakant Dash Umakant Dash is a Professor in the Department of Humanities and Social Sciences, where his research focused on financial economics, health policy analysis, economic evaluation of healthcare programmes, and inter-industry analysis. In 2021, he was appointed Director of the Institute of Rural Management, Anand (IRMA), and more recently, he has taken on the role of Vice Chancellor at the Gokhale Institute of Politics and Economics, Pune.