

An Empirical Study on the Impact of Health Micro-Insurance on Healthcare Access and Financial Risk among BPL Households

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Abstract

Health micro-insurance has become a crucial tool for enhancing health care access and financial protection for poor-income families. The effect of health micro-insurance on the access to health care and financial risk on Below Poverty Line (BPL) households in Bangalore Rural District has been investigated through an empirical study. A descriptive and analytical research design was employed with primary data being gathered from the BPL households of 400 respondents, which were distributed on a structured questionnaire. The results indicate that health micro-insurance (HMI) substantially improves access to health care services, lowers medical debts, and boosts financial protection against health risks. Awareness was also cited as an important determinant of enrolment and utilization of insurance schemes. The results can help direct policy recommendations for the strengthening of HMI programmes in this population group to achieve greater effectiveness, accessibility and outreach.

Keywords: Health Micro-Insurance, Healthcare Access, Financial Risk Protection, BPL Households, Out-of-Pocket Expenditure, Financial Inclusion, Bangalore Rural District.

Introduction

Even in low-income developing countries, health-related financial shocks continue to be one of the major causes of poverty for these households. Access to good healthcare is still limited, despite considerable development of infrastructure, through high OOP health expenditure, insufficient insurance coverage, and financial protection. According to the WHO, every year in the world several million households face catastrophic financial costs from health expenditure, owing to their lack of financial resources to cover these costs, they have to borrow money, sell productive assets or cut their daily expenses. With small families increasing their financial vulnerability to health crises due to out-of-pocket expenses, around half of their domestic budget in India goes toward these costs, which becomes an causes financial insecurity and hinders utilization of healthcare services.

HMI, a financial inclusion tool has become a key financial tool specifically targeting the low-income and economically vulnerable populations for access to affordable health insurance. Whereas conventional health insurance products feature large premiums, lengthy enrollment processes, and minimal hospitalization coverage, HMI enrolls poor households and includes hospitalisation coverage, in a much simplified manner with lower premiums. A number of government schemes have worked to bring health insurance to the BPL households and other disadvantaged classes in India, such as RSBY and later PM-JAY. These drive down catastrophic price of healthcare use plus ensure good access to healthcare services.

Healthcare accessibility is more than just the ability to access healthcare facilities, it can involve the ability to pay for health care (HC), the timely use of health care services (HCS), the quality of HCS and continuity of care. Economic factors can contribute to low uptake of early HCS for low-income families, resulting in late diagnosis, poor health outcomes and higher treatment costs. HMI can help address these obstacles by reducing direct medical costs and thus increasing usage of institutional HC in combination with decreased use of self-medication and informal HC providers. Even though specific schemes and specific regions offer different levels

of financial protection, there is evidence that insured household members are more likely to obtain hospitalization and special medical services than uninsured household members.

Another important aim of HMI is the protection of financial risk. Serious illness often come as one of the biggest unforeseen financial hares for poor households. Hospitalization costs are often high as a perpetuation of poverty, leading to asset being sold, distress and indebtedness. Transferring healthcare risks via a larger share of people being adequately covered should decrease OPEC, catastrophic health expenditure, and medical impoverishment among people. Good health insurance systems are supposed to mitigate OPEC, catastrophic health expenditure and medical impoverishment by distributing healthcare costs among a greater share of the population covered. There is, however, mixed evidence on effectiveness of public funded and micro-health insurance schemes. Some studies find benefit in terms of healthcare utilization, and others find limited reductions in financial burden (as a result of insufficient coverage, exclusions, limited awareness, administrative inefficiencies and ongoing reliance on providers in the private healthcare system).

In spite of widespread welfare state campaigns, awareness of the benefits of insurance, how to apply for it and how to claim insurance, is relatively low in BPL households. Information asymmetry, lack of digital literacy skills, geographical barriers, and scarcity of empaneled healthcare facilities are common issues in rural and semi-urban areas affecting beneficiaries. As a result, coverage with insurance may not guarantee better access to health and/or financial protection. Despite being designed to help the poorest cope with health shocks, the effectiveness of HMI requires focusing on a number of socioeconomic factors including education, family income, health knowledge, services accessibility, trust in the HC providers and the administrative efficiency. Knowing what these determinants are is, thus, crucial for the reinforcement of policy interventions and attainment of Universal Health Coverage (UHC).

Though there are a few national studies that have assessed government-sponsored health insurance schemes, there is scarce empirical literature that looks in detail at the effect of HMI on HC access along with financial risks among BPL households at the district level. This is because the Bangalore Rural District setup is a context that has rural settlements, growing healthcare facilities/results and diverse socio-economic beneficiaries. It is also important that the impact that HMI has on HY and financial resilience of BPL households can inform policy makers, insurers, and public health administrators.

In view of this, the current study has a motive to empirically assess the effect of HMI on access to HC and financial risks faced by BPL families. Findings are likely to add to literature on health financing, financial inclusion and poverty alleviation and provide policy suggestions on the effectiveness of health insurance programmes for economically vulnerable populations.

Literature Review

There has been wide academic interest in HMI as a tool to make universal health coverage and mitigate financial vulnerability among low-income populations a reality. So far the literature has focused on its effects on members' use of HC, financial protection, enrollment decisions, and welfare effects.

In Karnataka, India, Ito and Kono (2010) found that household risk perception, behavioral preferences, and adverse selection significantly drove decisions to adopt a micro-insurance plan. The study confirmed that with affordable premium structures, level of participation was low, indicating that there is still limited awareness, and behavioural biases among people that are a big hurdle to insurance uptake.

The Sampoorana Suraksha Programme is a health micro insurance scheme that was assessed by Savitha and Kiran (2015) in Karnataka. Eligible household units had significantly lower levels of financial distress due to health-care costs than noneligible household units, using household-level data, the authors found. It found that HMI has a positive impact on financial protection, however more widened and enhanced awareness needs to be created to fully harness the potential of HMI.

In a holistic systematic review, Prinja et al. (2017) mapped out all medically relevant public financing of health insurance in India. They found that in general, government sponsored insurance programmes had a positive effect on healthcare utilization, especially for hospitalization services, but had mixed results on the effects of health spending deductibles and health spending shocks. The review focused on the need to enhance the implementation of the scheme, awareness of the beneficiaries and quality of the service.

Banerjee, Duflo and Hornbeck (2014) studied in India the connectionage of health insurance with microfinance institutions. In the absence of incentives in the form of insurance products, their research showed that it is not enough to make products available to improve insurance uptake as there are still limited demand from lack of insurance knowledge and low perceived value. It underscored the role of financial literacy and consumers' awareness in driving the uptake of insurance.

Using quasi-experimental methods, Sood et al. (2014) have evaluated the effect of government health insurance for Below Poverty Line households. They concluded that insurance coverage resulted in some modest improvements in health outcomes and financial protection, in turn improving access to HCS. The authors maintained that just as much investment in the health infrastructure and in the quality of services is needed to fully enjoy the benefits of insurance programmes.

Reshmi et al. (2021) aggregated information from various public health insurance schemes in India. After the systematic review, they found that the schemes like RSBY, Vajpayee Arogyashree, and PM-JAY showed a consistent positive association with higher healthcare consumption but inconclusive on substantial reduction in catastrophic health expenditure. Administrative constraints, lack of awareness and inconsistencies in the implementation of programmes were key challenges identified in the review.

The study by Parmar et al., (2023) has examined the effect of PM-JAY based on aggregated information on more than 57,000 beneficiaries in six Indian States. Their research revealed that they were significant decreases in the amount of OPE and Cehe among beneficiaries who used the private HC system. The results found in the report show that providing good design public finance-based insurance programmes can make a significant contribution to enhancing financial protection for the economically marginalized households.

A systematic review conducted by Habib et al. (2016) in developing countries reveals that micro-insurance has generally been found to have a beneficial effect on financial risk protection by reducing catastrophic expenditure on health, though the effect can be different based on the package, provider networks and settlement efficiency. The authors concluded that institutional arrangements and awareness within the community needed to be strengthened for more sustainable programmes.

Overall, HMI programmes have been found to positively affect the use of HCS and financial protection for low-income families. However, current shortcomings like low awareness, limited enrollment, poor accessibility, poor administrative efficiency and lack of financial protection remain obstacles to the effectiveness of the programmes. The identified gaps highlight the need for conducting local empirical studies in BRL district to obtain context-specific evidence which can assist in health insurance policy reform and re-enforcement.

Objectives:

This study is designed to investigate: the awareness and utilization of health micro insurance among the BPL households, the effect of health micro insurance on access and financial protection from health, its effectiveness in reducing OOP health expenditure, determinants of uptake and utilization of health micro insurance, and policy reforms that can enhance Insurance coverage and improve accessibility for the economically vulnerable groups.

Methodology

This research is descriptive and analytical research done with quantitative research. Primary data will be gathered by using a structured questionnaire with 400 households, living below the poverty line, of Bangalore Rural District and secondary data will be collected from government reports, journals and published literature. The sample size is calculated in accordance with Cochran's formula and this will be taken using multistage stratified random sampling ensuring adequate representation at taluk level and from various demographic groups.

Result and Analysis

The results of the primary data collected from 400 BPL households from Bangalore Rural District are analysed and interpreted in this chapter.

Table 4.1 Gender-wise Distribution of Respondents

Gender	Frequency	Percentage
Male	218	54.5
Female	182	45.5
Total	400	100.0

The representation of the respondents on a gender basis is given in Table 4.1. It is noted that of 218 respondents (54.5 %), 182 (45.5 %) were women. Their distribution suggests that there is balance between male and female respondents in the study, so that there is a balanced voice in the discussions about awareness and use of HMI. The slightly higher percentage of male respondents, is a common pattern in households where decisions are taken malevolent, usually in a rural area.

Table 4.2 Age-wise Distribution of Respondents

Age Group	Frequency	Percentage
Below 30 Years	62	15.5
31–40 Years	98	24.5
41–50 Years	126	31.5
Above 50 Years	114	28.5
Total	400	100.0

The age distribution indicated that the largest group of the respondents aged between 41 and 50 years, representing 31.5% while 28.5% consisted above 50 years age. 24.5% of the respondents are aged between 31 to 40 and 15.5% of them being below 30. The results indicated that most of the respondents were the middle-aged who carry the load of financial decision making in the households, and they are expected to have high experience in using health services and taking healthcare expense decisions.

Table 4.3 Awareness of Health Micro-Insurance Schemes

Response	Frequency	Percentage
Aware	296	74.0
Not Aware	104	26.0
Total	400	100.0

As can be seen in Table 4.3, 74% of the participants (296) were aware of HMI while 26% (104) were not. The results show the overall level of awareness among BPL households is relatively high which is probably due to government awareness programmes and community outreach initiatives. However, the fact that 25 percent aren't aware underscores the need to educate and share information about insurance benefits that are available.

Table 4.4 Enrolment in Health Micro-Insurance

Status	Frequency	Percentage
Enrolled	278	69.5
Not Enrolled	122	30.5
Total	400	100.0

The table show that 69.5% (278) of the respondents were enrolled in HMI schemes while 122 (30.5%) were not enrolled. While most of the respondents have taken part in insurance schemes, a significant proportion of people are uninsured. This finding indicates that there are still factors limiting BPL households to enroll in those that are eligible, including awareness, or knowledge gaps, along with issues of procedure and access.

Table 4.5 Health Micro-Insurance Improves Healthcare Access

Response	Frequency	Percentage
Strongly Agree	96	24.0
Agree	188	47.0
Neutral	58	14.5
Disagree	42	10.5
Strongly Disagree	16	4.0
Total	400	100.0

Mean = 3.77

Table 4.5 shows that 71 per cent of those who responded agreed or strongly agreed that HMI contributed to access to health services. Fewer than 15% were neutral and 15% disagreed. A mean score of 3.77 reflects a positive attitude towards ease in accessing HC facilities, meaning that there is a higher level of willingness by insured households in seeking timely medical treatment and using formal HC facilities.

Table 4.6 Health Micro-Insurance Reduces Medical Expenses

Response	Frequency	Percentage
Strongly Agree	102	25.5
Agree	176	44.0
Neutral	66	16.5
Disagree	40	10.0
Strongly Disagree	16	4.0
Total	400	100.0

Mean = 3.78

Results showed that 69.5% of the respondents agreed that HMI had a considerable impact on their out-of-pocket (OOP) health expenditure. Dissagreed to this (14%) or neutral (16.5%). The average score of 3.78 reinforces the view that Health Micro insurance can do its part to achieve the objective of providing financial support by reducing direct expenditure by the economically weaker sections of the population.

Table 4.7 Health Micro-Insurance Provides Financial Security

Response	Frequency	Percentage
Strongly Agree	84	21.0
Agree	194	48.5
Neutral	62	15.5
Disagree	46	11.5
Strongly Disagree	14	3.5
Total	400	100.0

Mean = 3.72

As indicated in 4.7, 69.5% of the respondents considered HMI as an effective tool for the protection of financial risks in the event of being hospitalized or having medical needs arise. Overall confidence in the insurance schemes is found to be relatively high (15%) because the percentage of disagreement is not too high. A mean rating of 3.72 indicates that, on average, the respondents feel that HMI is a positive influence on financial stability.

Table 4.8 Overall Satisfaction

Response	Frequency	Percentage
Highly Satisfied	74	18.5
Satisfied	176	44.0
Neutral	80	20.0
Dissatisfied	54	13.5
Highly Dissatisfied	16	4.0
Total	400	100.0

Mean = 3.60

The results show that 62.5% of people stated that they were satisfied with HMI services, which can be considered as high satisfaction. Twenty percent did not change their mind, and just 17.5% were displeased. Overall, the level of satisfaction is high, as evident by the high mean score of 3.60 which suggests the health beneficiaries consider HMI as a useful support to meet their healthcare needs.

One-way ANOVA test has been used to investigate if the groups (age) differ significantly in terms of their perception on the effect of HMI on the access to HC.

Table 4.9 One-Way ANOVA Results

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	18.562	3	6.187	4.826	0.003
Within Groups	507.934	396	1.283		
Total	526.496	399			

To determine the differences in perceptions of healthcare access by age group a One-Way ANOVA test was performed and the results are shown in Table 4.9. The calculated value of F is 4.826 and significant level of F is 0.003 which is less than 0.05, the level of significance. This means a significant difference between age groups in terms of the respondents' perceptions. Thus, the beneficiaries' perception of the effect of HMI on health access would vary by age.

For assessing the association between the awareness of HMI and the enrollee status, the Chi Square test has been used.

Table 4.10 Cross-tabulation

Awareness	Enrolled	Not Enrolled	Total
Aware	248	48	296
Not Aware	30	74	104
Total	278	122	400

Table 4.11 Chi-Square Test

Test	Value	Df	Asymp. Sig.
Pearson Chi-Square	98.742	1	0.000

The Chi-Square test shows that there was a significant association between awareness and enrolment in HMI schemes ($\chi^2 = 98.742$, $p < 0.001$). Respondents who knew about the insurance schemes were significantly more likely to be in the insurance scheme than respondents who did not know about the insurance schemes. The results imply that awareness can be an important element in enhancing enrolment in health micro insurance programmes of BPL households.

Table 4.12 Hypothesis Testing

Hypothesis	Statistical Tool	Result
H1: Health micro-insurance significantly improves healthcare access among BPL households.	Mean Score Analysis	Supported
H2: Health micro-insurance significantly reduces financial risk among BPL households.	Mean Score Analysis	Supported
H3: There is a significant difference in perceptions of healthcare access among different age groups.	One-Way ANOVA	Supported
H4: There is a significant association between awareness and enrolment in health micro-insurance schemes.	Chi-Square Test	Supported

Discussion

The study's results show that HMI contributes to the improvement of access to HC and protection from financial risks for the BPL households in the Bangalore Rural District. Majority of respondents knew of and had HMI, which led to the better use of healthcare services and decrease in out-of-pocket (OOP) medical spending. The results further indicate that awareness is a significant factor in enrolment and that perceptions of access to the health services vary significantly depending on age. The study overall echoes existing literature in support of HMI improving financial security and healthcare consumption among lower income households. Questions of limited awareness among the respondents and non-enrolment however highlight the need to enhance the effectiveness of HMI programme by increasing awareness and easing up procedure of enrolment and also improve the accessibility of healthcare services to all.

Conclusion

The study findings suggest that HMI scheme has been effective in increasing access to healthcare services and is a key tool in mitigating financial risks for the BPL population in Bangalore Rural District. The results show that both insured and non-insured households tend to enhance their financial security by improving their use of health services and the drop in their OOP medical expenditure. While awareness and enrollment rates are reasonably good, there are many gaps in insurance education levels and reach within the scheme. Overall, HMI has proved to be a useful tool to advance financial inclusion, prevent catastrophic health spending and facilitate the entrenchment of UHC.

Recommendations

Based on this evidence, it is recommended that the awareness programmes around HMI schemes be stepped up in the interest of the government's bodies, insurance companies and healthcare institutions to increase awareness of HMI schemes amongst the households of the BPL. Making it easier to sign up for the scheme, increasing the number of hospitals that are able to provide membership and offering better mechanisms to process claims and greater support services for beneficiaries can boost scheme usage and effectiveness. Additionally, the health insurance programme requires regular and active monitoring and evaluation, and local authorities and community organisations need to work together to enhance financial protection and access to quality health services for the economically disadvantaged.

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