HOUSEHOLD HEALTHCARE EXPENDITURE AND HEALTH FINANCING PATTERN: A STUDY IN RURAL SETTINGS OF ASSAM

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Chapter 7

SUMMARY OF FINDINGS AND CONCLUSION

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7.1. Introduction

In the following sections, the findings of the study have been summarized in a comprehensive manner. These findings have been assessed in the context of the state's existing health system and its financing mechanisms. Finally, to address the issue at hand, some policy specific suggestions have been drawn based on these results.

7.2. Findings of the Study

7.2.1. Extent of Healthcare Expenses among rural households

(i) The study reveals that, on average, a rural household of Assam has to pay a significantly high amount of money out of their pockets. The range of OOP health expenses is quite widespread, with extensive variability from household to household. The alarmingly high per capita cost of direct, indirect, and total healthcare expenses is a clear indication the healthcare is a cause for high financial burdens on individuals.

(ii)The majority of the reported IP, OP, and death cases in the survey were from public facilities, with a few ailments involving combined consultation from both public and private healthcare facilities. Although the reported visits to private healthcare facilities are relatively lower for the sample, the study captures a high level of discrepancy in the cost of treatment in public and private facilities. The IP cost in private facilities is more than twice the IP and OP cost of treatment in any public facility. Furthermore, the OP treatment in private facilities costs the households multi folds more than public facilities. The cost of healthcare in public and private facilities stands at extreme ends, irrespective of the type of treatment (IP/OP).

(iii) The study has identified a set of different variables influencing the OOP health expenses with the help of the Spearman rho correlation coefficient. These factors can be divided into three sets of variables, i.e., (a) Household Demographics, (b) Disease/Treatment Pattern, and (c) Health Care Cost Components. These determinants influence the extent of a household's annual healthcare expenditure diversely, as shown in the table below (Table 104).

According to the study, the most influential factors concerning the household's annual healthcare spending are different healthcare cost components. The influence of demographic variables and ailment treatment patterns ranges from weak to moderate

only. OP costs and especially OP treatment costs in private facilities have a bold impact on a household's overall health spending. The cost of the diagnostic test and medicines can steer up the OOP expenses for rural families extensively. The influence of IP cases and the various costs associated with them are moderate in nature. However, the cost of treatment in public facilities barely affects a rural family's annual OOP expenses. The presence of chronic conditions and sudden death of family members due to medical reasons can also moderately stir up a family's OOP medical expenses.

Table 104: Variables influencing the OOP health expenses

Strength of Association	Variable Categories		
	Household Demographics	Disease/Treatment Pattern	Health Care Cost Components
Strong	-	-	• OP cost • OP cost of treatment in private facilities • Diagnostic costs • Cost of medicines
Moderate	-	• Number of IP cases in a year • Number OP cases reported in a month	• IP cost of treatment • IP cost of treatment in public facilities • IP cost of treatment in private facilities • Consultation/service fee
Weak	• Size of the family • Headcount of senior citizens in the family • Annual income of the household	• Number of chronic cases in family • Number of chronic patients in the family • Death count in a family during or post treatment	• OP treatment cost in public facilities • Cost of treatment in public facilities leading to death of the patient • Cost of treatment in private facilities leading to death of the patient

Source: Compiled by the Author

7.2.2. Financing Measure adopted by families from rural settings

(i) The study recorded seven financing measures used by rural households, and they are household's monthly/annual income, savings money, sale of household assets, borrowing from family/friends or moneylenders, credit from SHG/MFI/other FIs, and financial assistance from health scheme/health insurance. The households may take up any one or multiple of these alternatives to pay their medical bills. Although the families chiefly try to cover these expenses with their earnings and savings, often it is not enough. In such cases, families from rural settings mostly rely on micro-credit from SHGs/MFIs

and financial aid from friends/relatives. There are still some families that have opted for informal channels of borrowings, as well. Either way, the it has been noticed that the odds of increased indebtedness extremely in many cases.

(ii) For each treatment type (IP/OP or death post or during treatment), the average amount of money utilized from annual income is the least. The vast spread of the money drawn from the other funding sources available refers to the likelihoods of the various devastating implications on households' economic conditions, such as exhaustion of household savings, asset loss, and increase in debt level. Moreover, there were a few households from the sample that had received financial assistance from some health scheme in the past year. Even though the number of such families is low, the spread of the financial aids received infers that these schemes have compensated the beneficiaries considerably.

(iii) The One-way ANOVA tests confirmed significant differences in the amount of money spent from household income, savings money for IP, OP cases, and treatments leading to patient death across the households from different income groups.

(iv) Based on the reported cases of treatment, three types of healthcare utilization pattern can be observed for the rural households in case of IP, OP, and ailments leading to death cases: (a) houses that have availed treatment in the public facility only, (b) households consulted only private facilities for treatment and (c) the households that have visited both public and private facilities for treatment. The study shows that the provider selection affects the extent of financing from various alternatives. According to the one-way ANOVA statistics, across the three types of healthcare provider selection patterns for IP treatments, the significant difference in means is detected for three financing measures: annual household income, borrowing from relatives/friends with interest, and borrowing from moneylenders. The amount of money spent out of household income for OP treatments seemed to vary significantly for three types of healthcare facility usage patterns. A significant intergroup difference exists in the average amount of household savings utilized for OP cases between houses that have visited only the public facilities and the households visiting private facilities solely. In the case of the OP visits, a significant difference in average borrowing from friends/relatives prevails across the three healthcare provider selection groupings, similar to the IP cases.

(v) The chi-square tests show that from the two sets of variables, i.e., demographic variables and variables for disease treatment pattern, different variables associate with the households' decision on financing alternatives at different levels.

Table 105: Financing Measures Influencing Variable Set (1): Household Demographics

Sl. No	Financing Measure(s)	Strength of Association		
		Strong	Moderate	Weak
1	Savings money	Household's geographic location	Social group of the household.	-
2	Payment or reimbursement from a health insurance plan/health scheme	-	-	Household's geographic location
3	Sale of Assets	-	Household income level, Household's geographic location	-
4	Borrowed from family members or friends from outside the household	-	Households' family size	Household income level
	Borrowed from family members or friends from outside the household (with interest)	Household's geographic location	-	-
	Borrowed from family members or friends from outside the household (without interest)	Household's family size	Household income level	-
5	Loan from moneylenders	-	-	Household income level, social group of the household.
6	SHGs/MFIs & other FIs	Household income level, Household's geographic location	Social group of the household	Households' religion

Source: Compiled by the Author

Out of the seven, three of the available financing measures, i.e., availing credit from SHG/MFIs, spending saving money, and borrowing from relatives/friends (with interest) for health expenses, strongly associates with the households' geographic positioning. The financing decisions regarding various available alternatives tend to vary from place to place, and it also varies across the different family sizes. On the other hand, the households' social and religious beliefs have weak to moderate influence over the rural households' financing decisions for healthcare needs.

Similarly, the different types of disease and treatment patterns also share noticeable linkages with the choices of financing alternatives. The study shows all of the funding options, except the health scheme reimbursements and loans from moneylenders, share a strong connection with critical medical situations, such as IP cases and treatment cases leading to death of the patients. In such cases, the treatment cost is usually high, and often the regular earnings and savings are not enough to clear the bills. As a result, it forces most of the households to draw money from multiple sources. On the other hand, the OP cases and chronic conditions in a family mildly influence the extreme financing measures like using savings money, borrowing from friends/relatives, and micro-credits from SHG/MFIs.

The study has further attempted to quantify the extent to which different factors influence a household's decisions on how to pay for their medical bills with binary logistic regressions. Based on the estimated odds ratios from the logit models, the influential factors can be divided into two categories, i.e., (a) positive influencers and (b) negative influencers. The positive influencers are those variables that are likely to increase the chances of a financing measure getting selected by the households, while with negative influencers, the odds decline significantly. The different factors influencing the financing decisions of the rural households have been summarized in the following table (Table 106) in a descending order.

Table 106: Financing Measures Influencing Variable Set (2): Disease/Treatment Pattern

Sl. No	Financing Measure(s)	Strength of Association		
		Strong	Moderate	Weak
1	Savings money	Death of a family member during/post treatment, Incidence of IP cases	-	Presence of chronic cases, Incidence OP cases
2	Payment or reimbursement from a health insurance plan/health scheme	-	Incidence of IP cases	-
3	Sale of Assets	Incidence of IP cases	Incidence OP cases	
4	Borrowed from family members or friends from outside the household	Incidence of IP cases	-	Incidence OP cases
	Borrowed from family members or friends from outside the household (with interest)	Death of a family member during/post treatment, Incidence of IP cases	-	-

	Borrowed from family members or friends from outside the household (without interest)	Death of a family member during/post treatment, Incidence of IP cases	-	Incidence OP cases
5	Loan from moneylenders	-	Incidence of IP cases	Death of a family member during/post treatment
6	SHGs/MFIs & other FIs	Incidence of IP cases	Incidence OP cases	Presence of chronic cases

Source: Compiled by the Author

Table 107: Categorization Factors Influencing Households' Healthcare Financing Decisions

Sl. No	Financing Measure(s)	Influencing Factors			
		Household Demography		Disease/Treatment Pattern	
		Positive Influencers (Impact)	Negative Influencers (Impact)	Positive Influencers (Impact)	Negative Influencers (Impact)
1	Savings money	• HH Income Group - Income Group 3 in comparison to Income group 5 (2.426)	• Residing District of the HHs - Nalbari with respect to Darrang (0.404) - Morigaon with respect to Darrang (0.227)	• Incidence of IP cases in the household (3.180) • Presence of chronic ailments in the HH (1.590) • Incidence of OP visits in the HH (1.538)	–
2	Payment or reimbursement from a health insurance plan/health scheme	–	–	• Incidence of IP cases in the HH (7.934)	–
3	Sale of Assets	• HH Income Group (in comparison to Income group 5 - Income Group 1(2.941) - Income Group 2 (1.893) - Income Group 3 1(1.849) - Income Group 4 (1.840) • Social group of the HH - SC compared to General group (2.506)	• Residing District of the HHs - Nalbari with respect to Darrang (0.425)	• Death of a HH member due to medical reasons (4.046) • Incidence of IP cases in the HH (2.502) • Incidence of OP visits in the HH (2.144)	–
4	Borrowed from family members or friends from outside the household	• HH Income Group (in comparison to Income group 5 - Income Group 1(1.952)	–	• Incidence of IP cases in the HH (2.138) • Incidence of OP visits in the HH (1.405)	

		- Income Group 2 (1.582)			
	Borrowed from family members or friends from outside the household (with interest)	–	• Residing District of the HHs - Nalbari with respect to Darrang (0.234)	• Incidence of IP cases in the HH (4.875) • Death of a HH member due to medical reasons (4.014)	–
	Borrowed from family members or friends from outside the household (without interest)	–	–	• Death of a HH member due to medical reasons (5.397) • Incidence of IP cases in the HH (5.300)	–
5	Loan from moneylenders	• HH Income Group (in comparison to Income group 5 - Income Group 1(2.705) - Income Group 2 (2.033)	• Social group of the HH with reference to ST group - General (0.557) - OBC (0.410) - SC (0.330)	• Incidence of IP cases in the HH (2.369) • Death of a HH member due to medical reasons (1.991)	–
6	SHGs/MFIs & other FIs	• Residing District of the HHs - Nalbari with respect to Darrang (2.018) • HH Income Group in comparison to Income Group 5 - Income Group 2 (2.602) - Income Group 4 (2.476) - Income Group 3 (1.996) - Income Group 1 (1.909)	• Residing District of the HHs - Morigaon with respect to Darrang (0.538) • Social group of the HH - General with reference to ST group (0.482)	• Incidence of IP cases in the HH (2.474) • Incidence of OP visits in the HH (1.848) • Presence of chronic ailments in the HH (1.443)	–

Source: Compiled by the Author

Note: (1) HH stands for Household, (2) The impact values of each the variables in brackets are the odds ratios for each of the significant factors.

According to the study, household demographics and households' disease/treatment patterns influence the households' financing decisions at different levels. The households' socioeconomic status, beliefs, and geographic positioning are responsible for variations in rural families' financing choices for healthcare needs. There is significant variation in opinion among the different income groups and general and backward social groups. The households from financially weak and backward categories are more susceptible to various available funding sources, irrespective of their consequences. On the other hand, the presence of different medical conditions in households undoubtedly increases the funding from multiple sources. But the emphasis increases multifold for the various financing measures with the elevation in the criticality and severity of the health situation.

7.2.3. Impact of OOP health expenses

(i) Around one-third of the sample households have suffered from catastrophe caused by high direct OOP health expenses. If the indirect cost of healthcare is taken into account, the incidence rate further increases by 2.9 percent. Around one-third of households from each category have incurred catastrophic health expenditure in the past year, indicating that incidence of financial catastrophe is independent of households' financial status.

(ii) The study has identified a set of variables influencing the incidence of catastrophic health expenditures in the study settings with several binary logistic regressions. The identified influential factors are from three categories: (a) Health Risk, (b) Healthcare Treatment Pattern, and (c) Healthcare Financing Pattern. Here the determinants of financial catastrophe have been divided into two categories: (i) positive and (ii) negative. In presence of a positive determinant the chances of incidence of catastrophic healthcare expenses increases, while a negative one reduces the odds. The following table (Table 108) summarizes the categorization of the factors responsible for such financial catastrophes in descending order of odds. It is well evident from Table 108 that both ailment severity and the frequency of visits to healthcare facilities for different types of treatments can obliterate the households' economic conditions. Amidst this, private healthcare facilities have a significant role to play. With the high cost of treatment, the financial risk extends multifold when operated in a private facility. The chances of catastrophe grow further when the high healthcare expenses force the families to sell assets, borrow money from different formal and informal channel like micro-

credits from SHG/MFI, loan from moneylenders, and relatives/friends. Instead, we can also say that the CHE forces rural households to adopt the above-mentioned measures.

Table 108: Factors influencing the incidence catastrophic health expenditures among the rural households

Sl. No	Predictor Variable(s) Category	Type of Influencing Factors	
		Positive Determinants (Impact)	Negative Determinants (Impact)
1	Health Risk	• Number of family members died in the past 365 days due to medical reasons (6.116) • Total number of OP cases in the past 30/31 days (2.906) • Total number of IP cases in the past 365 days (1.922)	• Absence of IP cases in the HH (0.352) • Absence of OP cases in the HH (0.162) • HH without any death due to medical conditions (0.127)
2	Healthcare Treatment Pattern	• Type of Provider visited for OP treatment with reference to only public facilities - Both Public and Private facility (3.143) - Only Private facility (2.050)	–
		• Number of IP case in Private facilities (2.498) • Number of IP cases treated in both Public and Private facilities (2.462) • Number of IP cases in public facilities (1.333)	–
		• Number of OP case in Private facilities (4.877) • Number of OP cases treated in both Public and Private facilities (3.194)) • Number of IP cases in public facilities (2.068)	–
3	Healthcare Financing pattern	• HH that have sold of household assets (2.515) • HH that have availed micro-credit from SHG/MFIs (1.975) • HH that have borrowed from money lenders (1.878) • HH that have borrowed from relatives/friends (1.700)	–
		• HH Borrowed money from relatives/friends without interest (3.643) • HH Borrowed money from relatives/friends with interest (2.118)	

Source: Compiled by the Author

NOTE: (1) HH stands for Household, (2) The impact values of each the variables in brackets are the odds ratios for each of the significant factors

7.2.4. Rural Households Perception about health expenses and its repercussions

(i) According to the study, the larger segment of the households (65.7%) has agreed that their annual health care expenses are pretty high. Moreover, more than half of the sample households (55.4%) have experienced a rapid increase in healthcare expenses with time. The study shows that the sense of agreement that healthcare expenses are very high is the strongest among the lowest-earning households; however, it diminishes as responding families move up the income ladder. With the constant need for treatment, families with chronic conditions among their members believe their health expenses are higher than the rest. In general, OP visits occur frequently, and households with a recent memory of OP visits seem to increase the odds of accepting that healthcare costs are indeed high. IP treatments are usually expensive in both public and private facilities as it involves critical conditions. But the strength of agreement is higher among the households that have availed an IP treatment in a private healthcare facility than the houses that have received IP care in a public facility. The case is the same for OP visits as well. The households' belief on healthcare expenses being too high grows stronger with OP consultation in private care facilities than for OP care in public ones. Most surprisingly, families enrolled under some health security schemes are more prone to believing that healthcare costs are too high.

(ii) For half of the responding households, affordability is still an issue in the case of healthcare costs. The lowest-earning families have firmly denied that the healthcare expenses are affordable, and this belief weakens among the households as their financial condition improves. Contrastingly, while the odds are high for Hindu families believing that their healthcare expenses are quite reasonable, the families from backward social groups found the healthcare costs to be pretty expensive. The survey data showed that healthcare costs become more unaffordable for households with chronic cases among family members. The families that have availed the IP treatments in private facilities have lower chances of considering healthcare cost to be affordable. The households with health scheme enrolments are less convinced that healthcare costs are reasonable. From the financing point of view, when healthcare treatment costs force the families to spend from their savings, the odds of such households complying with the notion that healthcare costs are affordable diminishes.

(iii) Similarly, for around half of the respondent households, their annual income is not enough to cover their medical bill without any difficulties. This sense of

insufficiency is the strongest among the lowest-earning households of the society, and it weakens as the families' economic standing improves. On the other hand, Hindu households think they can manage their medical expenses with their regular incomes, compared to Muslim families. On the contrary, the income level is highly inadequate in light of healthcare expenses for the families from backward groups. This belief is pretty strong among households with chronic ailments as well. Analysis has shown that families feel that their income is not enough to cover their healthcare needs due to the IP treatment costs in private healthcare facilities. Despite the health insurance enrolments, households still doubt if they can offset their medical bills with their regular earnings.

(iv) The study has revealed that a considerable share of the sample houses (47.1%) has experienced a significant decrease in the savings level because of high healthcare expenses. The households' level of agreement regarding exhaustion of saving money is pretty strong among the houses who agree that their healthcare spendings are very high and beyond affordable concerning their regular earnings. Although there are numerous households from higher-income categories that have suffered from the exhaustion of savings because of medical bills, the study has recorded that the depletion in families' saving money is the highest among families with low annual incomes. As per the analysis, in medical situations, households from backward social groups have suffered the most reduction in households' long-term savings. The IP treatments, OP visits, and chronic ailments can cause decline savings levels. But based on households' responses, it is clear that with IP case, odds are the highest, while in the case of OP visits, the probability is the least. We have further noticed that regardless of enrolment under health insurance/assurance schemes, the households had to use up extensively their savings money for medical reasons. In the case of IP treatments, while treatment in private facilities increases the odds of savings exhaustion, treatment in public facilities diminishes such odds.

(v) As per the survey, around two-fifth of the interviewed households are in immense financial debt because of their previous healthcare expenses. The families admitting to having high, unaffordable health expenses for their income have higher chances of being indebted while managing their medical bills. Although the likelihood of facing indebtedness is irregular across all the income-groups, the odds are slightly higher for the financially weak ones. While households from backward classes are prone to facing an increase in financial debts, Hindu families seemed relatively secure from such

hardships. The odd for families being indebted get multiplied in the event of a family member's death due to medical reasons during or post-treatment and it grows with the increase in such death counts. Although IP and OP cases both can cause increased borrowings, the debt levels increase more for IP cases. The type of provider visited for different types of care also significantly influences households' debt levels. The study shows that the odds of increased debt are exceptionally high when a house avails IP treatments in both public and private facilities. However, the odds are almost similar for OP visits to the public as well as private facilities.

(vi) In the study, one-fourth of the respondents have admitted that they had to sell off their household assets due to their healthcare expenses. The high healthcare cost positively influences a household's decision to sell off their assets; however, if these expenses are affordable by the families or their earnings are enough to cover the medical bills, the chances of asset count reduction become uncertain. Houses from the extreme ends of the income group are most likely to suffer from depletion in their asset level. On the other hand, there is a significant difference in odds of losing assets due to health expenses among households from different social groups; families from the backward categories seemed to have suffered the most in this case. In the event of the family member's death due to medical reasons (during/post-treatment), the costs are usually pretty high, thus the chances of high decline in assets. Although IP and OP both types of treatment provoke households to sell their assets to pay their medical bills, the impact is more severe for IP cases than OP visits. Irrespective of the type of treatment (IP, OP), whenever a household availed treatment from private healthcare providers, the probability of suffering from a decline in assets rises.

(vii) Around one-fourth of the households have also admitted that healthcare costs have compelled them to compromise with their treatments. The study has revealed that the lowest-earning group families are most prone to giving up their treatments midway due to financing reasons; the odds of such compromises decline for the households as we move up the income ladder. Compromising with needed healthcare is more prominent among the houses that have visited public facilities for OP consultation. In contrast to that, the odds of compromising with treatment are pretty less when families have availed healthcare services (IP and OP) in private facilities. The families with health insurance/assurance policy enrolments have higher chances of withdrawing treatments midway or completing ignoring them. From the financing viewpoint, the households with

borrowings from friends/relatives and micro-credits from MFIs/SHGs are two times more likely to give up treatment at some point.

(viii) More than one-fourth of the interviewed households have revealed that the families had to make adjustments in their food consumption and food-related expenses to cover the healthcare expenses. The families from the bottom two earning category are inclined to compromising with food expenses to manage their healthcare expenses, but the scenario is relatively better for remaining income-groups. The study has also noticed that small families easily resort to adjusting their food consumption compared to large ones. Compared to the ST group families, the SC group families are most prone to such adjustments, followed by the general category households. However, the odds of Hindu families cutting on the food expenses are relatively lower than Muslim families.

(ix) One-fifth of the surveyed households admitted that they have to reduce their non-food expenditures because of high healthcare costs. Such comprises appeared to be more noticeable among the families that had already undergone budget cuts on food expenses for managing their medical bills. The high costs of treatments seemed to force the bottom two income group households the most to compromise with certain non-food expenses. However, Hindu families from rural settings are the least likely to give up their non-food expenses due to healthcare spending. IP cases and the prolonged chronic condition in the family have a noticeable impact on households' decision to give up specific non-food expenses. With such cases, the families have an increased odd of resorting to the strategy of compromising. The study further revealed that the probability of households resorting to compromising non-food essentials is significantly high despite the health insurance enrolments. From the financing grounds, asset sales and borrowings from friends/relatives force the households to compromise in non-food expenses to meet the gap.

(x) More than half of the households feared that their annual healthcare expenses could negatively impact their economic conditions in the long run. This sense of worry is pretty strong among the respondents from the houses who believed that their annual healthcare costs are pretty high, and it is beyond affordable concerning their earnings. A rapid increase in households' annual health spending over time further raises concerns for rural households. Hindu families seemed less concerned about the economic consequences of the high healthcare costs; on the contrary, the backward group families

showed huge concerns about their financial standing in the long run. Households from all the income groups expressed concerns for their futures at different levels, yet the lowest-earning families felt the most vulnerable. The presence of chronic conditions among the family members found to be raising worries to the next level, followed by the OP visits. The study found that treatments received from private healthcare providers can solely evoke serious concerns among rural families. Houses with extensive borrowing from friends/relatives for healthcare purposes have high odds of worrying about the deterioration of their economic conditions. Despite the health insurance/assurance enrolments, the household still felt vulnerable about their futures.

(xi) The interviewed households particularly have accepted that it is essential to have certain protections against the unseen healthcare costs at present times. The need is the strongest among the houses with chronic patients, followed by households with IP cases during the recall period and OP visits. The families with histories of IP treatments in private healthcare providers in the past year felt the need for financial protection more than households that have visited the public facilities for IP treatments. When healthcare spending forces the families to resort to utilizing money from savings, borrowing from moneylenders, or SHG/MFIs, the odds of households seeking protection against financial risks increases multifold. Surprisingly, in the event of family members' death due to medical reasons, households are more likely to ignore the need for financial security against health risks.

(xii) Most of the households interviewed during the survey believed that the government should be responsible for all the healthcare costs. The desperate need for financial protection against unseen healthcare costs felt by families from rural regions strongly influences their urge that the government should bear their healthcare costs fully. Households with chronic patients have the highest sense of agreement with the notion that the government should take the responsibility of healthcare spending entirely. The same goes for the houses with OP and IP visits within the recall period, although the sense of agreement is slightly lower. The families that have visited public healthcare facilities for OP consultation believe that the government can bear the healthcare expenses; thus, they should take responsibility for the same.

7.2.5. Financial Security against OOP health Expenses

(i) Although there are several health insurance schemes available in India offered by the public and the private sector, only 19.5% of the sample households are

familiar with the concept of health insurance in general, and approximately one-fifth of the interviewed families have health insurance registrations.

(ii) The study found that the sample households have the enrolment of one of the following three policies; A*yushman Bharat Pradhan Mantri Jan Arogya Yojana* (97.1%), *Atal Amrit Abhiyan* (2.4%) policy, and ESI scheme (0.4%). Out of the enrolled families, only 9.4% of the houses had received financial assistance under these policies in the past 365 days, and it is just 2.1% of the entire sample.

(iii) The study findings suggest that the largest segment of the enrolled families from rural areas lack basic understandings of several aspects of their health schemes, like policy-related terms, knowledge of doctors, hospitals, and services covered under these policies. They are also unaware of how to avail the benefits and the grievance redressal procedure for their respective policies. Most families even failed to differentiate between the costs covered by the schemes and the additional payments made out of their pockets. But the majority is aware of the amount of contribution they have paid for these enrolments.

(iv) The majority of the enrollees shared vague viewpoints about the range of services, networks of doctors/hospitals, medical cost coverage, and the quality of care delivered under these policies. According to a large section, the premium share of the policies justifies the benefit coverage. But despite the enrolments, most of the enrollees do not feel safe from the financial consequences of healthcare costs, as there no significant reduction in their OOP health expenses post-enrolment. According to them, the schemes have not been able to turn the health care services utilization into a hassle-free process.

(v) According to the survey, most households got enrolled in their respective policies out of obligation only, and 2.6% of the families registered themselves under these policies on their own to avail of healthcare services for small charges.

(vi) The two prime reasons reported by the enrollees for not exercising the benefits of these health insurance policies are (a) enrollees are not familiar with the administrative procedure to utilize the services and (b) the treatment for the ailments is not covered by the respective policies.

(vii) Affordability issues and lack of awareness are the two main reasons reported by the rural households for non-enrollment. Moreover, one-fifth of the families without any health insurance enrolment stated that they don't prefer such enrolments.

(viii) There is no significant difference in the perception of health insurance plans between households with and without health insurance enrolments. The majority of families from both groups agree that health insurance is essential at present times, and it is vital for shielding both health and financial risks. They even believe that the concept of health insurance policies has the competency to improve the accessibility of quality healthcare services and deal with rapidly rising costs of treatments efficiently; thus, it should be made mandatory for every individual. But for most of them, the health insurance policy is not an affordable product in general.

(ix) Out of the 1080 rural households interviewed for the study, 74.6 percent (806 houses) are willing to get enrolled under a contributory health financing scheme. The distribution of these 806 households is almost similar across the first four income groups. Among the highest-earning families, compliance is relatively a bit low.

(x) The study also identified several determinants for households' willingness to participate in a contributory health scheme from five sets of variables using binary logistic regressions. Based on their impact on willingness, the determinants have been divided into two categories, i.e., (i) amplifying variables and (ii) diminishing variables. On the one hand, amplifying variables are responsible for increased willingness among rural families, while diminishing factors are accountable for restraining it. The following table (Table 109) contains a summary of all the factors that influence the rural households' willingness for a contributory scheme.

Table 109: Factors impacting the willingness of the households to participate in a contributory scheme

<table>
<tr><th rowspan="2">Sl. No</th><th rowspan="2">Variable Category</th><th colspan="2">Determinants</th></tr>
<tr><th>Amplifying Variables (Impact)</th><th>Diminishing Variables (Impact)</th></tr>
<tr><td rowspan="2">1</td><td rowspan="2">Household Demographic</td><td>2. HH Income Group (in comparison to Income group 5
- Income group 4 (2.361)
- Income Group 2 (2.204)
- Income group 3 (1.673)
• HH family size (Ref: 7 or more)
- 3-4 members (1.933)</td><td rowspan="2">3. Residing District of the HHs
- Morigaon with respect to Darrang (0.360)</td></tr>
<tr><td>• Social group (with respect ST)
- General (2.187)
- OBC (2.119)
• Religion (with reference to Muslim families
- Hindu (1.866)</td></tr>
<tr><td>2</td><td>Healthcare</td><td>• Household has visited a private</td><td>• IP treatments in private</td></tr>
</table>

	treatment pattern	facility for OP consultation (1.489) • Household has visited a public facility for OP consultation (1.362) • OP treatments in private facility (count) (1.278)	facility (count) (0.692)
3	Household healthcare financing decisions	• Households that have availed micro-credit from SHG/MFI (2.607)	–
4	Insurance-related information	–	• Household that are aware of the concept of Health Insurance (0.595)

Source: Compiled by the Author

As per the study, except for the most deprived segment of the rural society, the rest of the households are compliant to partake in a contributory health scheme. But the extent of willingness varies across these income groups. There is also a wide variation across the districts, and the households from Morigaon are least compliant with the idea of contributory health policy. Even social and religious beliefs also play a vital role in this case. Hindu families, and the General, OBC group households are more interested in a contributory health policy to minimize the OOP expenses. It also shows that houses with frequent OP visits to public or private facilities are also interested in such schemes. The study found a strong sense of enthusiasm among the families with microcredit from SHG/MFIs due to medical costs. However, the families that haven't witnessed any rise in financial debt due to medical reasons seemed to restrain them from participating in any such scheme. But surprisingly, the study found that households familiar with the concept of health insurance policies are pretty reluctant to this idea, raising questions about the credibility of such schemes among rural families.

(xi) On average, a family from rural settings is willing to pay Rs. 2556 (approx.) in a year, with a high standard deviation of Rs. 2387 (approx.). The distribution of these premium shares is positively skewed, ranging from Rs 60 to Rs 24000, and the most frequently reported premium amount is Rs. 1200 per year. According to the Pearson correlation coefficient, the amount of premium that households are willing to pay increases with an increase in annual income and family size, but not in equal proportion.

(xii) The majority of rural households suggested that such health policy coverage should include the cost of medicine, followed by IP treatment costs and diagnostics test expenses. Approximately 75.18 percent of the families willing to participate in a contributory scheme chose more than one service from the provided five

alternatives. Although the respondents reported 17 different combinations of services that they expected to cover by such policies, there are three combinations of cost of services expected by most of the families, i.e., (a) Medicine, Diagnostic Test, (b) IP, Medicine and (c) Medicine only.

7.3. Suggestions

The study has helped to get an overview of the rural households' annual burden of healthcare expenses and the financing alternatives adopted by the families residing in the rural parts of Assam to pay for healthcare services. It has attempted to unveil root-level information on healthcare expenses incurred by rural families and the economic consequences faced because of it. The study has delivered a preliminary assessment of the households' financial security status against health risks. Based on the significant findings from this study, some specific suggestions have been constructed for the government, the community as well as the households, and illustrated in the following section to further improvement of the financial protection scenario against the uncertain healthcare risks amidst the rural mass of Assam.

7.3.1. Suggestions to the Government and Policymakers

a) Regulating the costs of services in the private health care sector:

Although public healthcare providers deliver various services at affordable rates, the families' reliance on private healthcare facilities is worthy of special attention, thus, the associated treatment costs. It is clear from the study that there is an immense discrepancy in healthcare treatment costs in public and private facilities (Ram, 2019). There are several cases where households had suffered extensively due to treatment in private healthcare facilities. Treatment in private healthcare facilities could strongly affects the overall spending of a house on healthcare. It has been reported as a strong determinant for rural families' annual healthcare expenses by the existing literatures (Ram, 2019; NITI Aayog, 2020; Thomas, et al., 2022). Thus, it can be said that healthcare in private facilities has the potential to raise the financial burden to a great extent for the rural households. The medical cases involving treatment in the private healthcare sector could often force the households to draw money from different financing sources. The odds of the incidence of catastrophic health expenses among rural households are pretty high with treatments in private healthcare facilities. In simple words, such healthcare costs have the ability to exhaust households' savings, assets and force them towards high indebtedness and extreme financial hardship.

The private sector healthcare providers might be a reason for draining out peoples' resources, yet they play a vital role in healthcare service delivery. With issues like fiscal space constraints, increased disease burden, epidemiological shifts, a country cannot solely depend on the public healthcare system to achieve the SDG 3 goals, including the UHC. Since most countries already have fully-functioning mixed health systems, it is reasonable to utilize both public and private providers to accomplish the goals. The private providers can improve geographic accessibility, remove social barriers, and deliver quality care with the existing system structure. However, without adequate governance and regulatory norms, most of the low and middle-income countries like India have been suffering from the private sector's abuse of market power (market skimming monopolistic behavior and predatory pricing), unresolved conflicts of interest, and regulatory capture (McPake & Hanson, 2016; Clarke, et al., 2019). Without any explicit policy regulations, the private sectors often tend to start-out to achieve their own goals and objectives. According to Clarke, et al. (2019), the government must formulate context-specific policies to clarify the private healthcare providers' role in the entire process. From the standpoint of this study, to normalize the healthcare cost in the private sector, the government can work its way forward in the following areas:

(i) Controlling the cost of medicines and diagnostics tests in the private sector

The cost of medicines, including over-the-counter purchases, is responsible for a large share of OOP health spending. In India, the central government regulated the prices of essential drugs under the Essential Commodities Act 1955 by setting price ceilings (following a market-based pricing mechanism) to make drugs cheaper and easily accessible to everyone. In 1997, the government set up the National Pharmaceutical Pricing Authority (NPPA) to fix or revise the prices of pharmaceutical products, enforce the provisions of DPCO (Drug Price Control Order), and monitor the controlled and decontrolled drugs' prices. With two amendments in 2013-14, the Ministry of Chemical and Fertilizers (Department of Pharmaceuticals) entitled NPPA to regulate the availability, pricing of all the drugs specified in the National List of Essential Medicines (NLEM) and some other drugs. But the recent economic survey (Government of India, 2020) revealed that the drug price regulations under DPCO (2013) have instead increased the price of regulated medicines than reducing it further. However, according to a recent report by Medbelle (2019), a UK based digital healthcare company, India ranked among one of the five countries with the lowest median prices for branded and generic drugs

taken as a whole. Although the elaborate price control mechanism has pulled the costs for most medicines below the global median, India still belongs among the countries with the highest out-of-pocket expenses on health. It is a clear indication that the financial burden amidst the mass is pretty high. It means that although the existing price control mechanisms have pulled the prices for medicines below the global median, it has not been able to provide complete relief to the citizens from high out-of-pocket spending, which further raises questions on the existing price control mechanism. Hence, in current circumstances, the policy-makers will have to evaluate the existing price control policies to regulate drugs' costs more rigorously.

(ii) Monitoring of private healthcare providers' pricing policy

Private sectors tend to revolt against the government's regulatory norms that are against their profit-earning objectives. Thus, it has always been a challenge for governments to set and implement price levels for the private health sector. The highly competitive nature of the private sector has turned healthcare into a luxury good. Studies have even reported the prevalence of undesirable practices like recommending unnecessary diagnoses, medications, or splitting fees with other providers to increase revenue, burdening the patients with larger bills (Bhat, 1999). Hence, it is crucial to regulate and continuously monitor the operations of the private sector healthcare providers to prevent them from exploiting the people in need of care. To make the process more efficient, academicians and experts have recommended strategies like the public-private partnership model, financing the private providers through prospective payment mechanisms. The capitation payment from Thailand's healthcare system is one such example. However, each of these strategies calls for public spending to a certain extent. So, in such cases policymakers will have play the deciding role to finalize the most appropriate approach keeping in mind the fiscal constraints.

b) Advancing the financial protection in sync with the need of the hour

SDG 3 has specifically emphasized on ensuring financial protection against healthcare risks. It is at the core of universal health coverage. The government of India has already several initiatives in action to improve the financial security of its population. The AB-PMJAY scheme is one of these initiatives with the ambition to provide safety to vulnerable families from catastrophic expenses of secondary and tertiary care. Even at the state level, the government introduced the Atal Amrit Abhiyan Scheme, a health assurance scheme, for the BPL population and low-income households to provide

cashless treatment and critical care coverage. There are health insurance policies for formal sector employees from public and private insurance providers. The NFHS 5 survey factsheet for Assam has shown a significant increase in financial protection coverage over time compared to NFHS 4 findings. But the main concern here is to what extent these schemes have been able to ensure households' financial safety from medical bills. To assess that, a completely independent study will have to be carried out. So based on the findings of this study, the following suggestions could be proposed:

(i) The study noted that most of the health insurance/assurance enrolments, recorded during the survey, are under publicly funded schemes with no fees or nominal charges since they are mandatory by norms. It could be a subtle indication that people are less likely to get themselves enrolled in any health security scheme without strong mandates. Currently, post COVID-19 pandemic, the government has already made it mandatory for employers to provide health insurance to all their employees. But this is rule is limited to the formal sector only, which is only a small proportion of the countries' total population. So, with all the uncertainties surrounding health, the government could direct their focus towards making health insurance/assurance enrolment mandatory for every citizen of the country to ensure a better and effective coverage.

(ii) According to the latest report by the NITI Aayog report, although India already has multiple schemes in place that have the potential to cover 70% of the total population, the actual coverage is very low (Kumar & Sarwal, 2021). Academicians have often reported that health insurance awareness and literacy are prime barriers to uptake of such policies (Bhat & Jain, 2006; Ghosh & Mondal, 2011). Households' perception also plays an active role in the decision-making process (Kansra & Gill, 2017). From the observations during the survey, it is pretty clear that the rural population is still not familiar with the concept of health insurance, as they frequently confused it with life insurance schemes. Even the households with enrolments are barely aware of the benefits entitled to them. In the absence of complete awareness, the families are highly likely to miss out on most of the provided coverage. Hence, there must be initiatives to familiarize people with the concept of health insurance and its various advantages.

(iii) Although the families have shown interest in participating in a contributory health scheme for financial aids, the amount they are willing to pay for such a policy is pretty low. Moreover, they mostly preferred the safety net against the costs of medicines and diagnostics, implying the respondents are most inclined towards comprehensive health

schemes. So, a contributory comprehensive health scheme seems plausible in the current settings and pilot testing of such a contributory scheme could be carried out validate the demand at a larger scale, (withing the state and across states as well). Considering the various constraints involved in the whole process, the government (central/state) could adopt for a public-private partnership model for a more effective implementation of such policies. However, the preliminary study findings suggest that it will be more appropriate if factors like health risks, family size, and family income are considered for a fair estimation of the annual charges or deciding on the premium amounts for them. Moreover, it will be more appropriate if policies are formulated at group level (or household level) rather than individual level as it is said that group enrolment is the most effective way for risk pooling and it also provides better bargaining power to the policyholders against the providers (Kumar & Sarwal, 2021).

(iv) The rural population of Assam is highly dependent on Microfinance institutions (MFIs) for various short-term and long-term financial requirements, including healthcare, which led to the microfinance crisis in Assam in the year 2019. According to report, Assam is one of the top states with highest counts of non-performing assets (NPA) (NABARD, 2022). The study also provided enough evidence in this regard. Policymakers and insurance providers could utilize these MFIs as a distribution channel for delivering different health insurance policies to the rural mass. The rural population's familiarity with the operating MFIs in their region, their faith, and reliance on them might make these financial institutions the most appropriate channel to raise awareness and acceptance of health insurance policies in the rural parts of the state.

(v) As mentioned earlier, observations during data collection indicate that most rural people are familiar with the concept of life insurance products. When referred to any insurance policies, they can associate with life insurance policies only. People are less hesitant to pay for life insurance policies, as well. Since the idea of health insurance is still not known to the larger share of the rural population, government and policymakers will have to put extra effort and time into raising awareness and making people accept it. It seemed like a long-term approach at present. In the meantime, life insurance riders could be considered and promoted as a short-term alternative to provide financial security against critical medical conditions. Critical illness and disability cover riders are the most common riders offered by insurance providers. Group term life insurance with healthcare riders could be a better alternative in terms extending security to more people with one

policy. Although promoting life insurance products with health security riders cannot entirely resolve the issue of high OOP health expenses entirely, it can promise some relief by ensuring financial security against specific critical conditions.

(vi) Affordability has always been an issue in the uptake of health insurance policies, and despite having several options, almost 30 percent of the population is still devoid of any financial protection (Kumar & Sarwal, 2021). Micro health insurance products could be the answer to this issue of affordability. These products propose to provide limited financial protection against health risks for a low premium. With their limited scope of coverage, it is evident that these policies are not the solution to complete financial security from healthcare. But in the short run, with proper customization based on consumers' demands, these policies could also provide effective assistance in reducing the burden of healthcare costs in India, specifically in the rural parts. Moreover, the MFIs could also play a significant role in the distribution of these policies. The MFIs can promote these policies among their rural customers as an add-on to their existing products for a nominal fee.

(vii) Lastly, to ensure adequate financial security against health risks, the policymakers will also have to emphasize on providing a good network of healthcare facilities and a comprehensive package of healthcare services.

7.3.2. Alternatives to improve financial protection at community level

In case of low-income countries with fiscal constraints, achieving universal financial protection against healthcare expenses calls for innovative ways of financing and delivering various services. In such circumstances, community-based health insurance (CBHI) has been used as an alternative for risk pooling and management of resources at the community-level. Studies from across the globe has proved that CBHI schemes has the potential to provide moderate financial protection and access to necessary healthcare services to enrollees (WHO, 2020). There are several CBHI schemes such as ACCORD, SEWA, etc. are already operating across India, and studies claim that they have been successful in providing partial protection against the healthcare burden (Devadasan, et al. 2007; Dror, et al. 2016). In light of the noticeable positive impact these schemes across India, the contributory health insurance discussed in the study could be pilot tested following the same CBHI model at the community level by collaborating with Non-Government Organizations (NGOs) or any other non-profit organizations or institutes at a small scale. Such initiative involving the local community in the

implementation and management process will also help in building trust for health insurance policies at grassroot level. The same associated organizations could play significant role at the community level in spreading awareness regrading importance of health insurance policies, benefits of different policies currently in action and raising literacy among the policyholders as well.

7.3.3. Strategies for reducing Out-of-pocket (OOP) health expenses at the household level

Although individuals are the ultimate user of the available healthcare services availed by them, but for expenditure estimation purpose households are considered as the basic unit, cluster of users. As per the System of Health Accounts (2011), households are even considered as the financing agent for household's OOP health expenses or otherwise known as financing scheme. Thus, the issue of high OOP health expenses could be primarily tackled at the household level. Considering the depth of the issue of OOP health expenses and the odds of incurring the CHE, standalone large-scale interventions might not completely as effective as one expects it to be. Hence, based on the study findings and observations from the survey following preventive measures could be recommended for household which could help in reducing the burden of OOP health expenses in the log-run:

a) The findings suggest that the preparedness for medical financial emergencies not at all satisfactory for the rural households of Assam. The respondents have agreed that their earnings are not enough to cover the healthcare need. Most of them neither have the ability to finance their own healthcare nor they have any sort of health insurance for that matter. Amidst the rising costs for healthcare, every household should properly plan for their household finance properly, and rather than relying on borrowing they should start investing on their health as well. Health insurances are the best alternative in such scenarios in case of hospitalization cases. Apart from that for regular day to day healthcare and illnesses the households should adopt a habit of creating a reserves for medical expenses as well, just like they do it for other necessities. In specific cases, the households can also opt for Health Savings Accounts with financial institutions for low impact high frequency healthcare needs.

b) The findings of the study reported that the rural households lack proper understanding of health insurance policies in general. More surprisingly, many of the households with pubic-funded health insurance enrolment are also unaware of the details

and benefits of these schemes. During survey it has been observed that due to lack of awareness they failed to utilize the benefits of these schemes at the time of medical emergencies. Lack of awareness and literacy often hampers in the effective delivery of financial benefits to the policyholders (Bhat & Jain, 2006; Ghosh & Mondal, 2011). To ensure household receive the benefits, it is also their responsibility to be proactive in the matter. They must put some extra effort and keep themselves updated with necessary information so that they can utilize the aids that they are entitled to.

c) In today's time, non-communicable diseases (NCDs) one of the prime contributors to the overall disease burden (Indian Council of Medical Research, Public Health Foundation of India and Institute for Health Metrics and Evaluation, 2017), thus also responsible for a significant portion of the healthcare spendings as well. During the survey, a similar trend has been noticed among the sample households as well. The unhealthy lifestyle and consumption habit (use of tobacco, unhealthy diet, physical inactivity and harmful consumption of alcohol) are fueling the uprising of these NCDs in India and across the globe (WHO, n.d.). This means that adopting a healthy lifestyle and protective measures at households-level could actually help in preventing NCDs and thus, minimizing the associated healthcare costs to a great extent.

7.4. Contribution to the Body of Knowledge

The present study documents the current situation of the rural households of Assam in terms of their annual healthcare expense and various consequences. The key contributions of this study to the existing knowledge base are as follows:

a. It is an exclusive attempt to estimate the healthcare costs in rural settings and identify the different financing measures adopted. The study reveals the determinants for the rural households' financing patterns while catering to their healthcare needs.
b. Apart from quantifying the impact of out-of-pocket health expenses at the state level using primary data, the study captures the public's perspective on the issue of healthcare cost and financing at the household level for the first time. It also identified the various factors responsible for perceptions.
c. The study has also delivered an exploratory comparative assessment of the perception, awareness, and opinion about the health insurance schemes between enrollees and non-enrollees.

d. The study made a unique attempt to determine the rural households' willingness to participate in a contributory health scheme and the factors driving their willingness. The study even identified the type of coverage expected by the target population.

7.5. Scope for Further Research

The study delivers an overview of out-of-pocket health expenses incurred by the rural population of Assam and the various aspects associated with those expenses. Although the study attempted to capture the entire scenario, in light of the vastness of the matter of OOP health expenses, there are scopes for further research on several subjects, such as,

(a) A rural-urban comparative analysis of OOP expenses across the state, as well as interstate studies

(b) A comparative study of the public and private healthcare providers to identify the problems and prospects of the state's healthcare delivery systems from the affordability standpoint

(c) A comprehensive investigation of the effectiveness of the different existing health insurance/assurance schemes in reducing OOP healthcare expenses

7.6. Conclusion

High healthcare cost is a predominant barrier to access to quality healthcare services, and without proper financial protection against these high costs, the consequences become highly devastating. In India, the financial burden of healthcare costs is still very high, and the protection against health risks is relatively low. According to NSSO and NFHS data, the top five contributors to OOP expenses are pharmacies, private general hospitals, general public hospitals, medical/diagnostics tests, and patient transportation and emergency rescue service providers. People are still paying the highest share of their medical bills out of their own pockets. Health insurance policies can reduce the burden of high OOP health expenses to a great extent in this case. The newly launched comprehensive health coverage scheme, *Ayushmann Bharat,* is expected to cover a considerable section of the population and further reduce the household's out-of-pocket expenditure for in-patient cases in government and selected empanelled private hospitals. But to ensure complete coverage of population and healthcare services by 2030 as per the SDG agenda, the existing operational framework won't be enough. A large portion of the population is still devoid of proper financial protection, despite having multiple

alternatives to health insurance policies combining the government and private policies. To ensure universal safety from financial risks from healthcare, a significant revision of the current healthcare financing mechanism and coverage criteria could answer the underlined issue of financial security.

The population of India is currently trying to cope with the shocks of unforeseen health risks of the COVID-19 pandemic. Since the beginning of 2020, academicians, scientists, and policymakers have shifted their core focus towards responding to the spread of COVID-19 disease and controlling it. It has immensely disrupted the treatment of the other diseases all this time (WHO, 2020). Although the pandemic is a severe problem right now, it can't overshadow the other existing issues in the health system. Just entitlement and membership in a health coverage scheme won't always be enough; for better results, we will need broader changes in the existing health system (WHO). With rapid epidemiological shifts like these, the health system often needs to tackle dynamic situations. Thus, the need for financial protection also changes rapidly. So, to avert all probable risks, policymakers must comprehensively attend to the matter and revise the protection requirements at a regular interval.

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