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HEALTH INSURANCE OWNERSHIP IN INDIA

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Summary

India's health sector is characterized by fragmented health insurance coverage, an increasing burden of chronic diseases, and high out of pocket (OOP) expenditure on healthcare. Health insurance should be an integral part of a household's portfolio as it helps the household better manage its health expenses and avert health related-financial shocks. Health shocks are among the most common reasons for households falling into a poverty trap. Low-income households are especially vulnerable to health shocks and adverse health diagnoses due to not only delayed health seeking behaviour, but also the volatile nature of their incomes coupled with a lack of safety nets, makes ill-health costlier for them to treat. However, access to health insurance among Indian households (and not only among low-income Indian households) has been historically low. Although health insurance ownership has increased considerably in the last seven years from 29% in 2015-16 to 41% in 2020-21 (NFHS), the overall uptake remains insufficient. Among those who do hold a health insurance account, coverage is often insufficient.

In this study, we conduct a quantitative analysis of household finance data to understand the status of health insurance ownership in India, identify the determinants of health insurance ownership, and understand the relationship between households' access to health insurance and their health expenditure. We use data from Centre for Monitoring Indian Economy's (CMIE's) Consumer Pyramids Household Survey (CPHS), Aspirational India Survey, and Household Income Survey from 2014 to 2020, to answer these questions. The dataset from 2014 to 2020 has a sample of 1,47,868 households from across the country representing both rural and urban geographies. The analysis is largely based on data from the years 2019 and 2020 which offers a comparison between a normal year (2019) and an anomaly (2020 with the Covid-19 pandemic).

Introduction

India's health sector is characterized by fragmented health insurance coverage,[1] an increasing burden of chronic diseases,[2] and high out of pocket (OOP) expenditure on healthcare. Health insurance should be an integral part of a household's portfolio as it helps the household better manage its health expenses and avert health related-financial shocks. Health shocks are among the most common reasons for households falling into a poverty trap.[3] Further, health expenditure, both the catastrophic and recurring kinds, can have a huge impact on a household's ability to sustain or improve its standard of living. Low-income households are especially vulnerable to health shocks and adverse health diagnoses due to not only delayed health seeking behaviour, but also the volatile nature of their incomes coupled with a lack of safety nets, makes ill-health costlier for them to treat. However, access to health insurance among Indian households (and not only among low-income Indian households) has been historically low. Although health insurance ownership has increased considerably in the last seven years from 29% in 2015-16 to 41% in 2020-21 (NFHS), the overall uptake remains insufficient. Among those who do hold a health insurance account, coverage is often insufficient.[4]

The report titled 'Key Indicators of Social Consumption in India: Health' released by the Ministry of Statistics and Programme Implementation (NSS 75th round),[5] shows that more than 90% of health insurance coverage is either by the Government for the public, or by the Government for its employees, or in the form of private employer support. Households taking up health insurance on their own are less than 1% in most demographic segments, except for the urban population belonging to the 3rd, 4th, and 5th expenditure quintiles. With a large portion of the population not covered under any health insurance, it is imperative to understand the factors influencing health insurance ownership. The RBI Committee Report on Household Finance notes, "little is known about why the usage of health insurance is low overall, and why most households in India borrow to finance medical expenses".[6] This gap in evidence is the key motivation for us to pursue this research.

In this study, we conduct a quantitative analysis of household finance data to understand the status of health insurance ownership in India, identify the determinants of health insurance ownership, and to understand the relationship between households' access to health insurance and their health expenditure. We use data from Centre for Monitoring Indian Economy's (CMIE's) Consumer Pyramids Household Survey (CPHS), Aspirational India Survey, and Household Income Survey

[1] Ministry of Health & Family Welfare, Government of India. 2021. *National Family Health Survey (NFHS-5)2019-21.*
[2] Sinha, Rajeshwari, and Sanghamitra Pati. "Addressing the escalating burden of chronic diseases in India: need for strengthening primary care." *Journal of Family Medicine and Primary Care* 6, no. 4 (2017): 701.
[3] Krishna, Anirudh. "Poverty and health: defeating poverty by going to the roots." *Development* 50, no. 2 (2007): 63-69.
[4] Insufficient coverage here means that even after having health insurance, a lot of households end up paying a huge sum of money from their own pockets either due to the nature of the insurance products bought by the households or due to medical expenses exceeding the cover provided by the insurance scheme. This has been seen in some of the unpublished (field) work of Dvara Research. This article by Deccan Herald also points towards insufficient coverage: Deccan Herald. 2022. *The Perils of India's Lack of Medical Insurance.* April.
[5] National Statistical Office. 2019. *Key Indicators of Social Consumption in India: Health.* November.
[6] Household Finance Committee. 2017. *Indian Household Finance.* Reserve Bank of India.

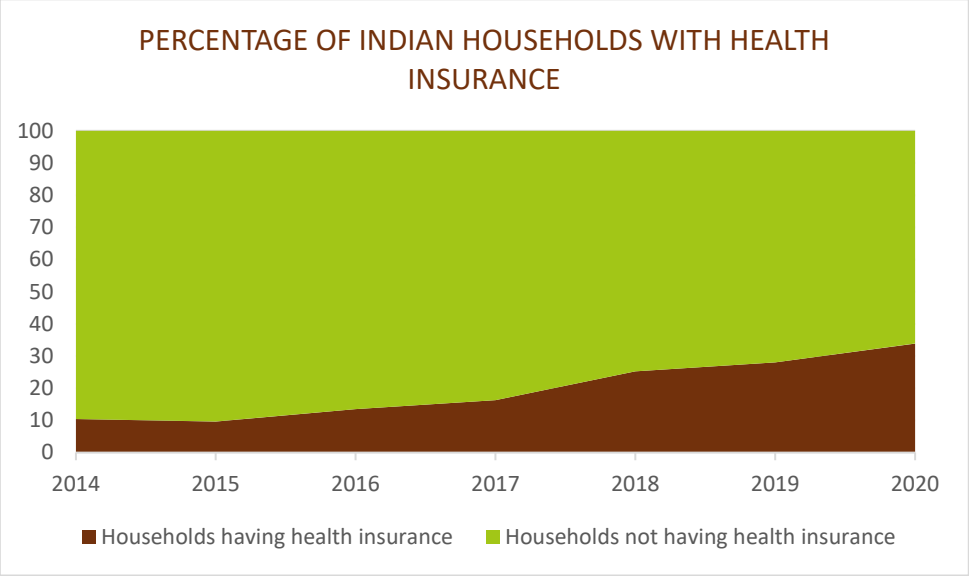
from 2014 to 2020, to answer these questions. The dataset from 2014 to 2020 has a sample of 1,47,868 households from across the country representing both rural and urban geographies.[7] The analysis is largely based on data from the years 2019 and 2020 which offers a comparison between a normal year (2019) and an anomaly (2020 with the Covid-19 pandemic).

This report is set in four sections. Sections I to III lays out the descriptive statistics of the different trends in the household ownership of health insurance and health expenditure while Section IV summarizes the findings from our regression analysis.[8]

I) Ownership of Health Insurance

1. The percentage of households with health insurance has increased from 10% in 2014 to 34% in 2020.

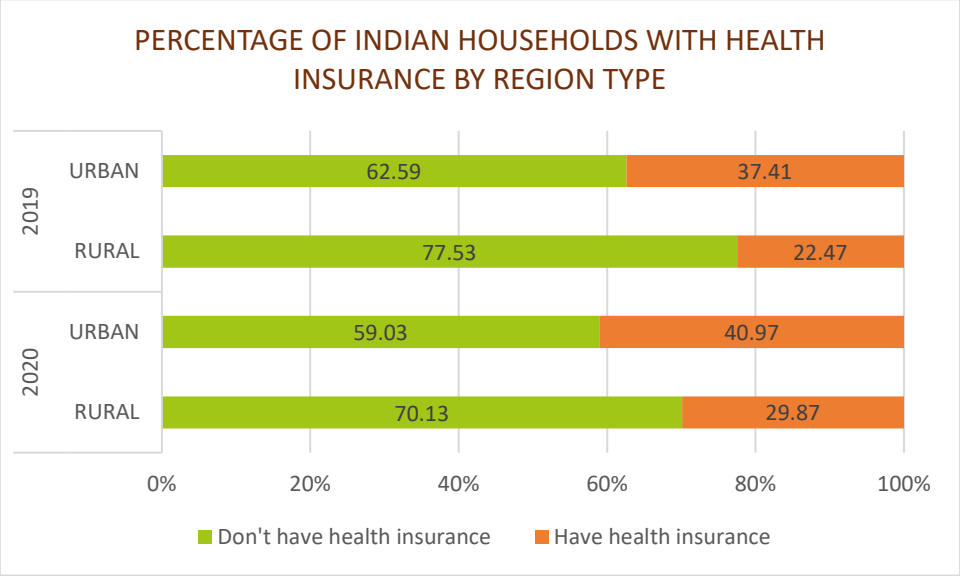
FIGURE 1.1: Percentage of Indian households with health insurance[9]



[7] Since the analysis is done on weighted households, the total number of sample households in 2019 for which data was available were 133,538, which correspond to 28,32,23,799.
[8] Regression tables can be found in the Appendix to this report.
[9] A household is considered to have health insurance in a particular year if it reports health insurance ownership in at least one of the four CMIE survey rounds conducted during that year.

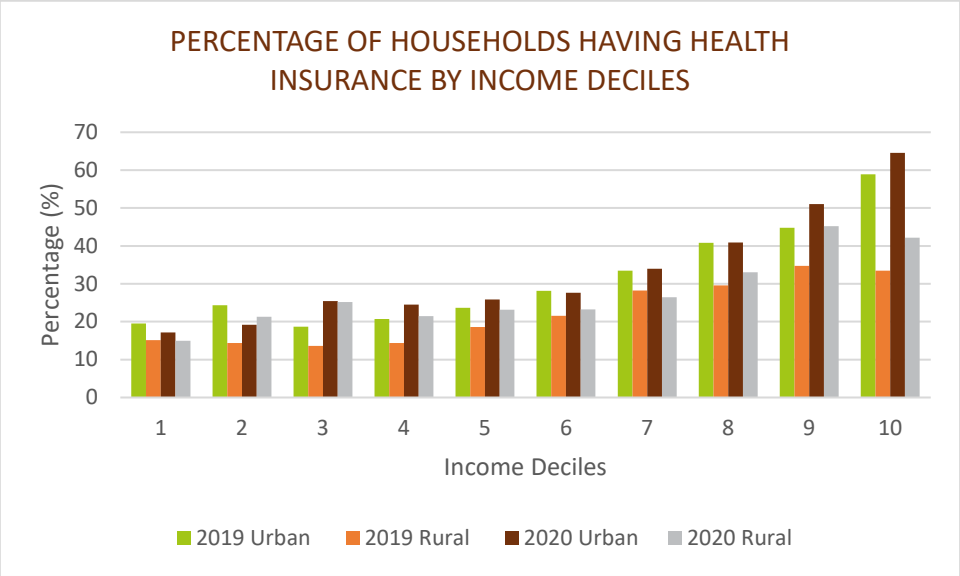
2. Health insurance ownership is higher in urban geographies, but the gap in ownership between rural and urban segments is shrinking.

FIGURE 1.2: Percentage of Indian households with health insurance by region type



3. Among both rural and urban populations, health insurance ownership is higher among higher income decile classes.

FIGURE 1.3: Percentage of Indian households with health insurance by region type and income decile

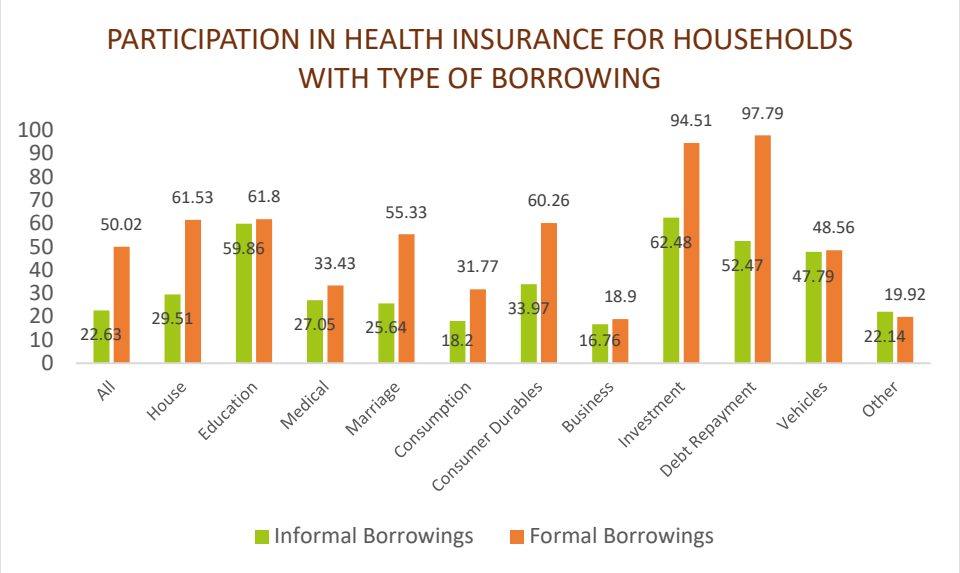


For both rural and urban households, the level of health insurance ownership for the first five to six income deciles in both years is not markedly different from each other (Figure 1.3). Health insurance ownership is seen to increase as we move to higher income deciles for both urban and rural geographies for both years. This increase is also seen between the two years 2019 and 2020, except for the two lowest income deciles for urban households, for which the health insurance

ownership decreased in 2020 instead, indicating higher levels of distress. Moreover, there is an absence of a gap in health insurance ownership between the low and middle income deciles, which is in line with the view that India's middle class is often left unprotected by any form of health insurance (Niti Aayog, 2021).[10] While the bottom deciles get support from Government-backed health schemes like Ayushman Bharat (AB-PMJAY) and the top deciles rely on privately owned health insurance, the middle deciles seeking non-governmental health services are left vulnerable to high OOP health expenses.

4. Households with formal borrowings show higher than average ownership of health insurance whereas, households with informal borrowings have lower ownership of health insurance.[11]

FIGURE 1.4: Participation in health insurance for households with type of borrowing[12]



Almost 50% of households in 2019 with formal borrowing have health insurance (Figure 1.4). It is seen that a greater percentage of households with formal education loans, home loans, or loans for investment purposes have health insurance whereas those who borrow from formal sources for business reasons or personal expenses (such as regular consumption and other expenses) don't. Only 30% of the households who have borrowed formally for medical purposes have health insurance, suggesting that even financially included households seem to depend on credit for their medical needs.

[10] Niti Aayog. 2021. *Health Insurance for India's Missing Middle.* October.

[11] Since the same household can have multiple loans, it is possible that the households who have formal loans are also being counted in informal loans category and hence the ownership of health insurance for households with only informal loans could be much lower than the numbers presented in this graph.

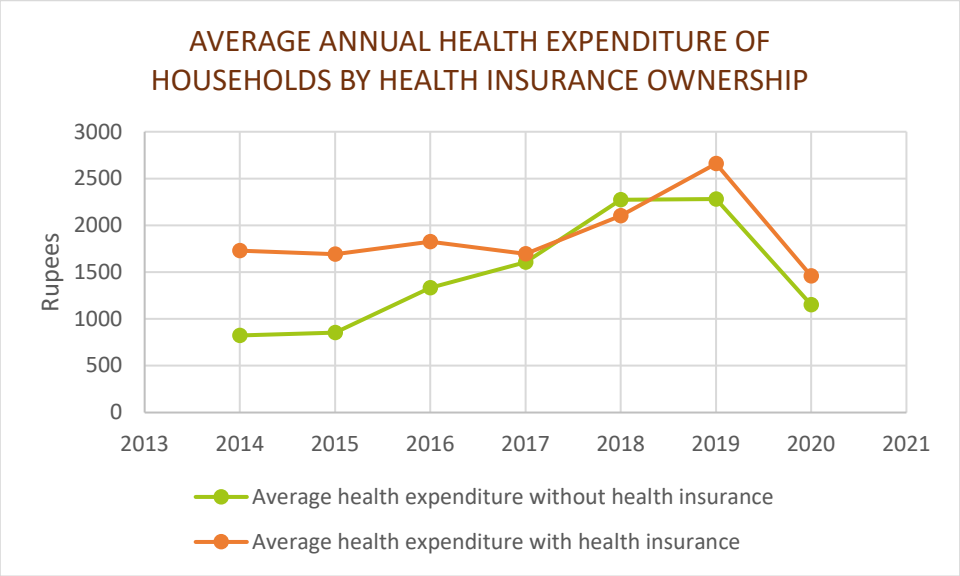
[12] Only 2019 data is used to track the participation in health insurance for households with formal borrowing and informal borrowing.

On the other hand, 77% of those who borrowed informally for any purpose in 2019 do not hold health insurance while only 23% own health insurance. Households that relied on informal borrowing for consumption expenditure and business had considerably low ownership of health insurance while those who borrowed for education, investment, or debt repayment, had higher ownership of health insurance. Only around 27% of households who borrowed informally for medical expenses had health insurance while 73% did not.

II) Health Expenditure

1. Average health expenditure in absolute terms is higher for households with health insurance than for households without health insurance except in the year 2018.[13]

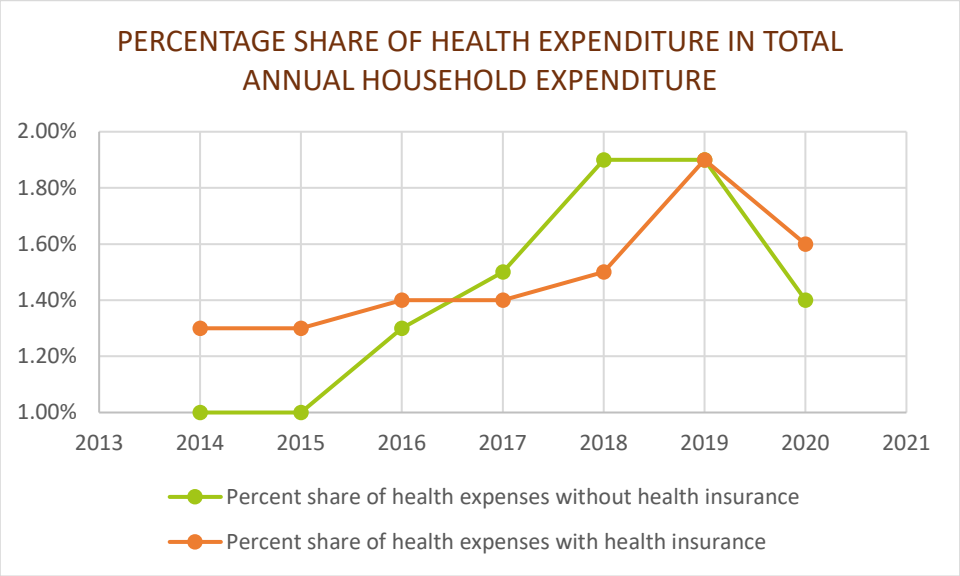
FIGURE 2.1: Average annual health expenditure of households with and without health insurance ownership



[13] Further, regression analysis without household level controls also shows a significant positive coefficient i.e., households with health insurance having higher health expenditure. However, it is seen that when controlled for household level characteristics and geography, health expenditure is lower for households with health insurance. Refer to Table 3 in Annexure 3.

2. Households with health insurance devote a higher share of their total expenses to healthcare than those without health insurance for most years except 2017 and 2018.

FIGURE 2.2: Percentage share of health expenditure in total annual household expenditure



Previous literature on this topic highlights the following reasons for households with health insurance devoting a larger share of their expenses to health-

(i) Households with health insurance place a higher value on good health and exhibit greater health-seeking behaviour, which in turn translates into higher spending on health. (Jowett et al., 2004 & Nguyen, 2011)[14]

(ii) Most commercial health insurance schemes in India are hospitalization-based indemnity plans (Health Insurance Fact Book 2018-19, IIBI).[15] Therefore the health expenses recorded by CMIE survey for a particular household could possibly have been reimbursed later, but such reimbursements are not explicitly recorded by the survey.

(iii) Adverse Selection: People with larger health care needs could be opting for health insurance (Einav & Finkelstein, 2018).[16]

There is a drop in both the absolute level of health expenditure and the percentage share of health expenditure in households' total expenditure from 2019 to 2020. On average, households with (without) health insurance spent a total of ₹2,659 (₹2,281) throughout 2019 whereas they spent only ₹1,459 (₹1,152) in 2020 (Table 2.1). Health expenditure as a percentage of household expenditure was the same at 1.9% for households with and without

[14] Jowett, Matthew, Anil Deolalikar, and Peter Martinsson. "Health insurance and treatment seeking behaviour: evidence from a low-income country." *Health economics* 13, no. 9 (2004): 845-857; Nguyen, Cuong Viet. "The impact of voluntary health insurance on health care utilization and out-of-pocket payments: New evidence for Vietnam." *Health economics* 21, no. 8 (2012): 946-966.

[15] Insurance Information Bureau of India. 2020. *Health Insurance FACTBOOK 2018-19.*

[16] Einav, Liran, and Amy Finkelstein. "Moral hazard in health insurance: what we know and how we know it." *Journal of the European Economic Association* 16, no. 4 (2018): 957-982.

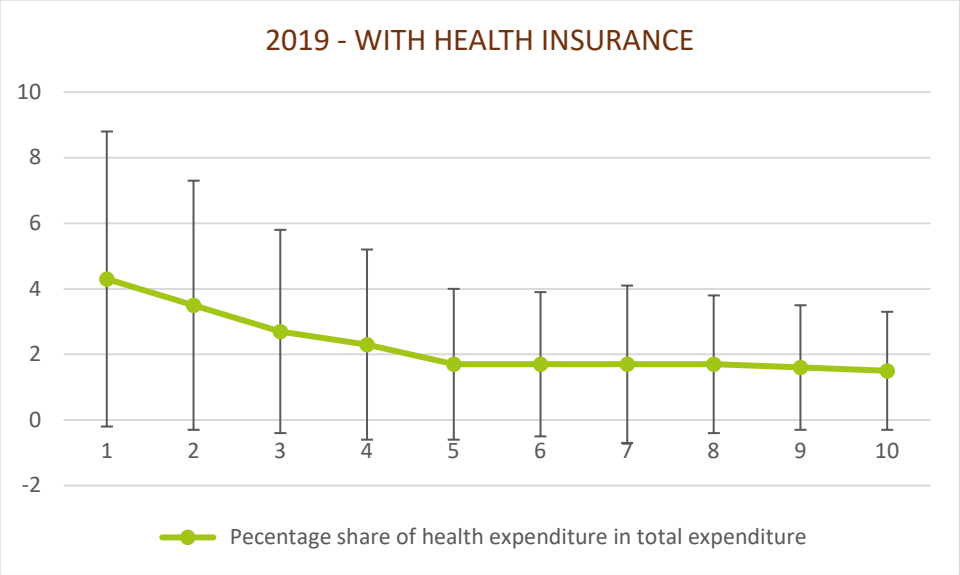
health insurance in 2019. It has however reduced to 1.6% and 1.4% for households with and without health insurance in 2020.

Table 2.1: Health Expenditure by Health Insurance

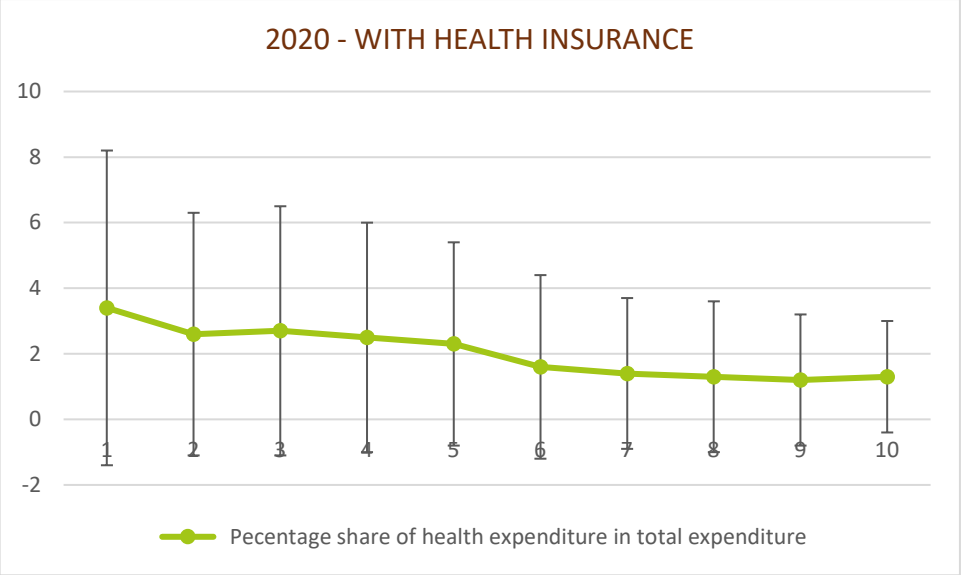
	2019				2020			
Health Expenditure	Max	Mean	SD	Median	Max	Mean	SD	Median
Without Health Insurance	501650	2281.16	5109.92	1370	494710	1151.71	3303.64	616
With Health Insurance	200445	2658.92	4102.55	1500	171410	1459.10	2552.74	625

3. Lower-income deciles allot a higher share of their total expenses towards health and face substantially greater volatility in their health expenditure. This highlights the vulnerability of low-income households to health shocks.

FIGURE 2.3: Percentage share of health expenditure in total annual expenditure by income deciles[17]



[17] The whiskers in these graphs indicate the standard deviations (SD) in percentage shares. The SDs are plotted on both the positive and negative sides of the observed average percentage share to show the spread of deviation around the mean. However, deviations below 0% can be ignored.


2020 - WITH HEALTH INSURANCE
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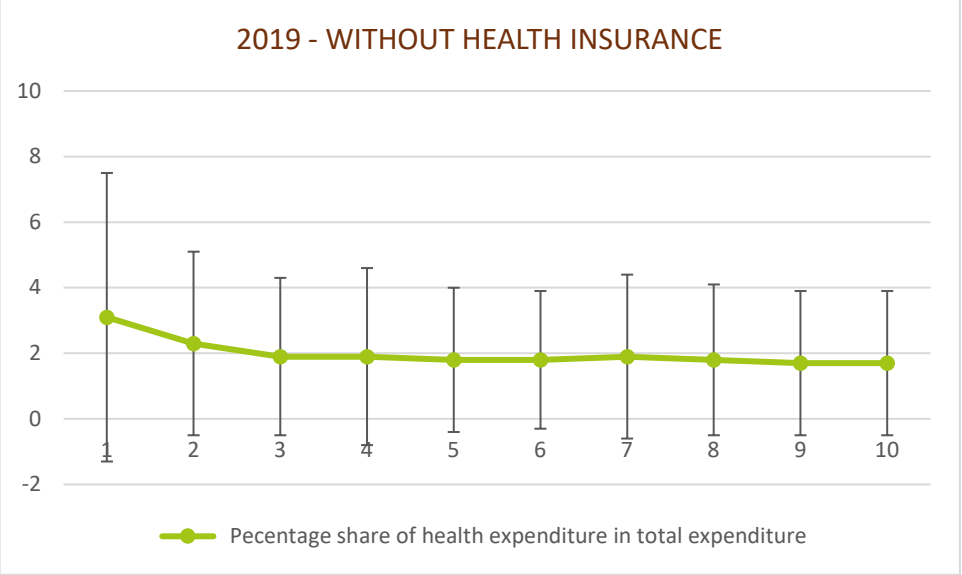
Pecentage share of health expenditure in total expenditure


2019 - WITHOUT HEALTH INSURANCE
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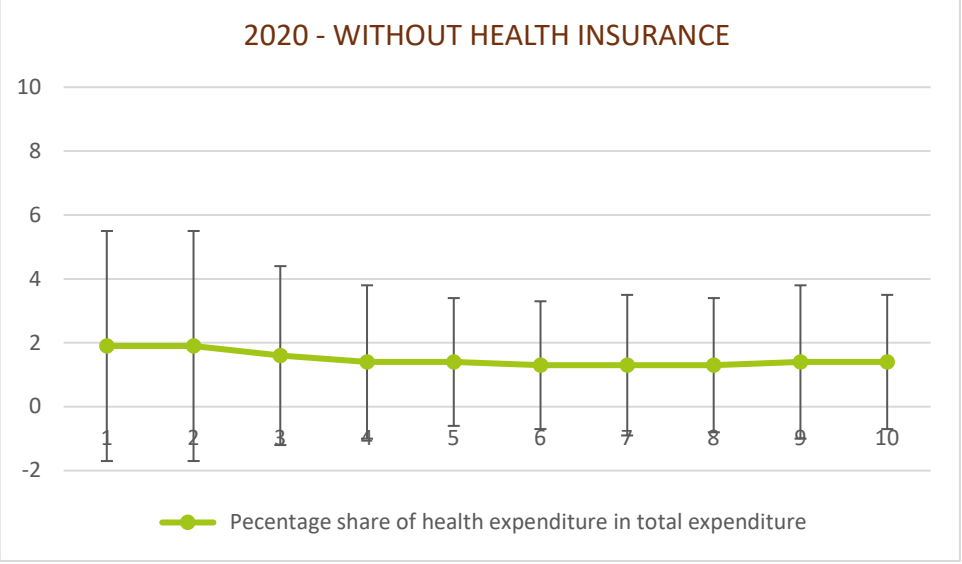
Pecentage share of health expenditure in total expenditure


2020 - WITHOUT HEALTH INSURANCE
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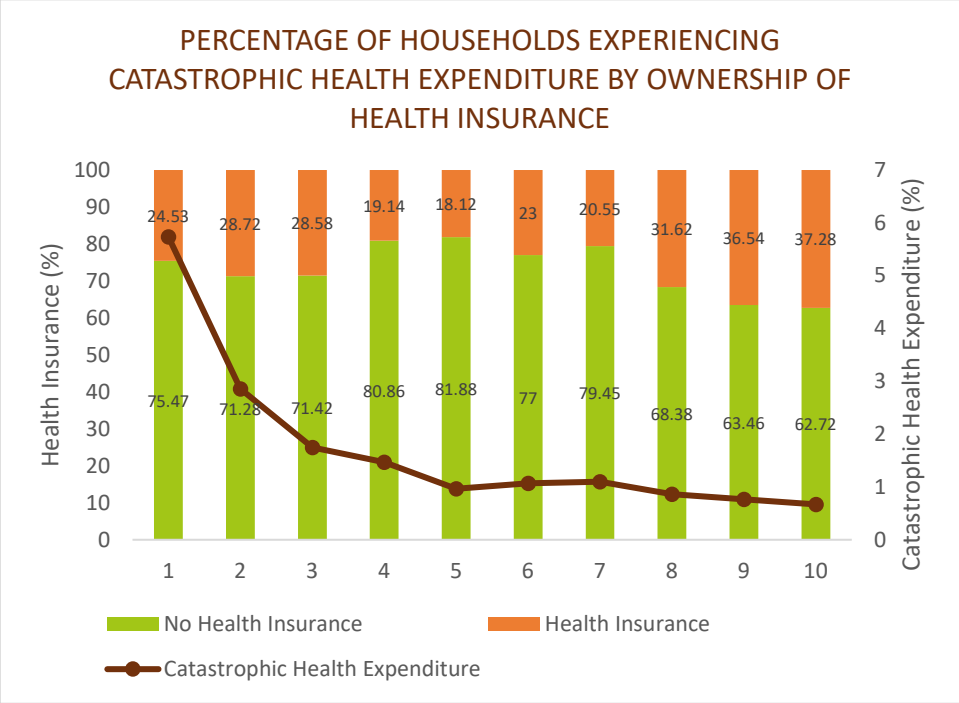
Pecentage share of health expenditure in total expenditure

In 2020, all income deciles have allocated a lower share of their expenditure to health when compared to their allocation in 2019. Particularly for households without health insurance in 2020, all income deciles show higher deviations from their mean percentage expenditure on health, and this is significantly higher for lower-income deciles highlighting their financial vulnerability to health shocks (Figure 2.3).

4. Roughly 74% of households that experience catastrophic health expenditure do not have health insurance.[18]

FIGURE 2.4: Percentage of households experiencing catastrophic health expenditure by ownership of health insurance and income deciles



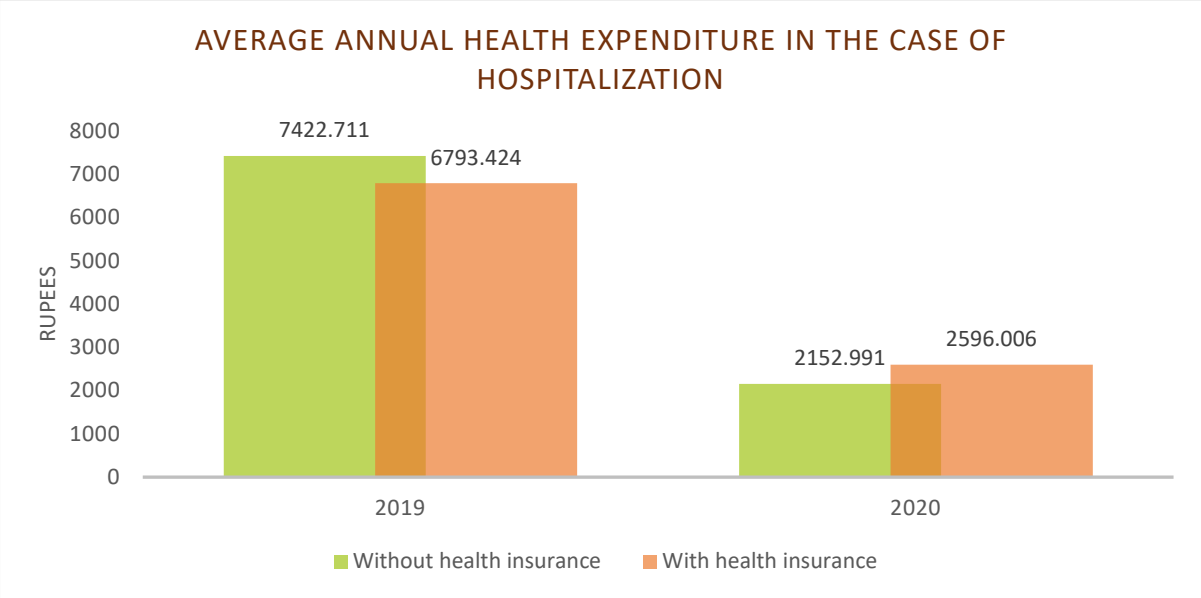
Catastrophic health expenditure is defined as health expenditure exceeding 10% (or 25%) of a household's total expenditure. Figure 2.4 shows that the lowest income deciles disproportionately have the highest percentage of households experiencing catastrophic health expenditure. More than 70% of these households do not own health insurance and even within the rest 30%, it is likely that the coverage the scheme provides is insufficient. The middle-income deciles seem to have the highest percentage of households without health insurance, emphasizing on the vulnerability of this segment.

[18] This graph is based on 2019 data.

III) Health Expenditure in the Event of Hospitalization

1. The annual average health expenditure for households that had at least one member hospitalized was higher for those without health insurance than for those with health insurance in 2019. However, for 2020, this finding is reversed.

FIGURE 3.1: Average annual health expenditure in case of hospitalisation[19]



In general, there is a substantial drop in the average annual expense that households made on health from 2019 to 2020 (Figure 3.1). Several studies have attributed this to a reduction in patients seeking medical care for non-COVID related purposes. A study on access to eye care during the pandemic saw that the number of outpatient visits at tertiary, secondary, and primary vision centres in 2020 was 39%, 60%, and 73% (respectively) of 2019 levels during the first wave of the pandemic.[20] Another study on gastrointestinal services in a health care facility in Tamil Nadu observed that the number of endoscopies in 2020 was 23.7% less than the number in 2019. [21]

[19] At least one member of the household hospitalised at least once in the year

[20] Muralikrishnan, Janani et al. "Access to eye care during the COVID-19 pandemic, India." *Bulletin of the World Health Organization* vol. 100,2 (2022): 135-143.

[21] Ramakrishnan, Arulraj, et al. "Management of Gastrointestinal Services in Tamil Nadu, India, during COVID-19." The Lancet Gastroenterology & Hepatology, vol. 6, no. 8, Elsevier BV, Aug. 2021, pp. 609–610

2. Households experiencing hospitalization of a member show higher average annual health expenditure as compared to households without instances of hospitalisation regardless of health insurance ownership.

FIGURE 3.2: Log of health expenditure for households with and without a medical shock in the year[22]

Figure 3.2A: Log expenditure by hospitalization and health insurance - 2019

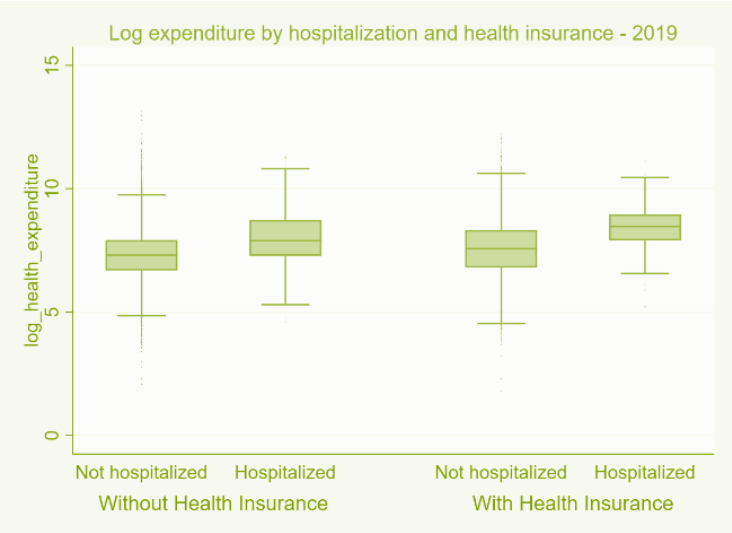
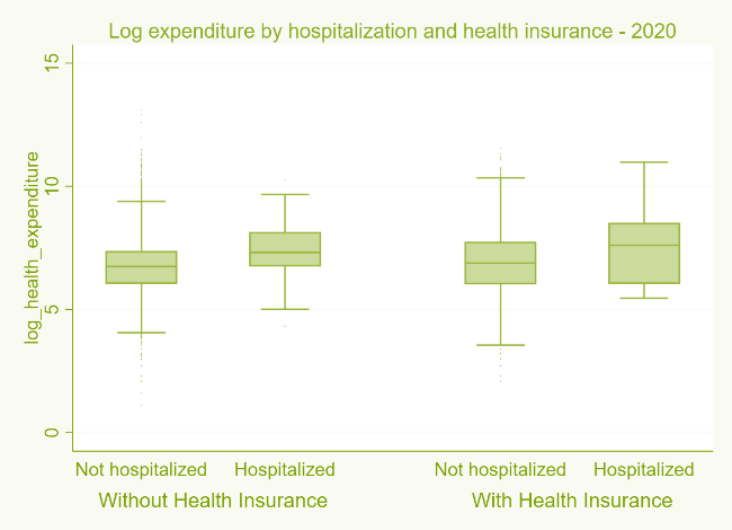


Figure 3.2B: Log expenditure by hospitalization and health insurance - 2020



In both Figure 3.2A and Figure 3.2B, households with at least one member hospitalised have a higher mean health expenditure compared to the ones that do not have a hospitalized member, regardless of health insurance ownership.

According to Table 3.1, there is higher variation in the health expenditure of those households which faced a medical shock but did not have health insurance in 2019. The standard deviation is almost twice that of households with health insurance. This pattern, much like Figure 3.1, has reversed in 2020. However, for households that didn't own a health insurance and didn't face instances of hospitalization, the variation in health expenditure remains higher in both 2019 and

[22] At least one member hospitalised at least once during the year

2020. The maximum health expenditure incurred is also 3-4 times higher for households without health insurance.

Table 3.1: Health expenditure of households with at least one member hospitalized by health insurance ownership

Health Expenditure		With Hospitalization				Without Hospitalization			
Year	Health Insurance	Max	Mean	Standard Deviation	Median	Max	Mean	Standard Deviation	Median
2019	No	80170	7422.71	14215.48	2560	501650	2265.62	5049.70	1370
	Yes	69370	6793.42	7644.03	4280	200445	2646.27	4080.58	1500
2020	No	29050	2152.99	3125.90	850	494710	1150.47	3303.67	615
	Yes	58800	2596.01	4790.98	1040	171410	1456.63	2545.18	620

IV) Regression Analysis

(i) Determinants of health insurance participation

A financial inclusion index (FII) is created for every household to understand the correlation between a household's level of financial inclusion and its take-up of health insurance (Annexure 1). To understand the determinants of health insurance ownership, 3 logit regressions are run and Tables 1 and 2 present the results of these regressions (Annexure 2).

Key Takeaways

1. A household's level of financial inclusion is a strong predictor of their health insurance ownership.[23] The higher the financial inclusion index score of the household, the more likely it is to have health insurance.

2. For every 1 unit increase in the FII score, the odds of taking up health insurance increases by 15.8 times.[24]

4. Participation in formal borrowing has a direct relationship with participation in health insurance. Households with outstanding formal loans are 82% more likely to have health insurance than households without formal borrowings.[25] Informal borrowing, however, seems to have no statistically significant effect on the take-up of health insurance.

5. Households in higher income deciles and those occupied in salaried jobs and as casual non-agricultural labourers are more likely to have health insurance.

6. Female dominated households, i.e., households where the number of females is more than twice the number of males, are more likely to have health insurance. Male dominated households or households with only males are much less likely to have health insurance.

[23] The coefficient of FII is positive and statistically significant across all regressions
[24] Refer to Column 7 in Table 2, Annexure 2, where 15.8 is the odds corresponding to this coefficient of regression. It gives the odds of occurrence for all other possibilities.
[25] Here formal borrowing is independent of informal borrowing.

2. Relationship between health expenditure and health insurance

To study this relationship, a log-linear regression with health expenditure as the dependent variable, health insurance as the explanatory variable and a set of household level and regional level variables as controls is used (Annexure 3).

Key Takeaways

1. We find that the health expenditure of households with health insurance is 13% lower than that of those who don't have health insurance. This suggests that health insurance potentially helps households reduce their out-of-pocket health expenses, although the insufficiency of health insurance coverage continues to pose financial risk for Indian households.

Discussion

Health insurance is a key tool for households to manage and mitigate their healthcare expenses. However, access to health insurance remains low among Indian households. India is experiencing a double whammy of disease burden,[26] as it continues to experience communicable diseases such as diarrhea and lower respiratory infections, with an increased occurrence of non-communicable or lifestyle disease conditions such as diabetes, hypertension, etc. This epidemiological transition could result in more households needing regular medication apart from opening the door for catastrophic health shocks.[27] Many Government schemes exist to bring a larger fraction of the Indian population under the ambit of health insurance. The Ayushman Bharat scheme (AB-PMJAY) aims to cover the bottom 40% of the population subsuming many state Government health schemes meant for low-income households (LIHs). Despite well-intentioned measures, actual uptake and usage remain low, owing to multiple barriers such as awareness, exclusion, and accessibility.

The report highlights that for households experiencing medical shocks, the deviations from mean health expenditure are quite high, posing a risk to the household's financial well-being. With a large section still uncovered by any form of health insurance, escalating out of pocket (OOP) health expenditure can negatively impact living standards and the ability to invest in human capital. It is therefore imperative to ensure comprehensive coverage of the whole spectrum of the Indian population by a combination of Government health schemes, social health insurance, and private voluntary health insurance.

ANNEXURE

[26] Bisht, Ramila, Rajashree Saharia, and Jyotishmita Sarma. "COVID-19 and the burden of ill-health: a double crisis of disruptions and inequalities." *Journal of social and economic development* 23, no. 2 (2021): 342-356.
[27] Dandona, Lalit, Rakhi Dandona, G. Anil Kumar, D. K. Shukla, Vinod K. Paul, Kalpana Balakrishnan, Dorairaj Prabhakaran et al. "Nations within a nation: variations in epidemiological transition across the states of India, 1990–2016 in the Global Burden of Disease Study." *The Lancet* 390, no. 10111 (2017): 2437-2460.