Health Insurance Coverage and Expenditure in India: Challenges, Socio-Economic Determinants, and the Path to Universal Health Coverage

Harish Chander P (EE/011/2023-25)

INDEX

List of Tables and Figures

INTRODUCTION

Life of an individual and a family is generally peaceful unless any kind of health issue arises which is indecisive and cannot be predicted before its occurrence. The needs such as desire of owning a house or a motor car or any other instrument of social status or other consumer durables of comfort can be postponed if the family has shortage of savings and limited sources of income. But this is not the case with the unforeseen medical obligations which need immediate cash flows and have an adverse impact on the savings of the family. Financial commitments on medical grounds can certainly ruin long term financial goals of a family which may include education or marriage of children and retirement plans besides desires stated supra. One may wonder about a solution to overcome such situations and the answer to this is none other than health insurance (et al Abishek). Taking a health insurance cover and subsequent payment of health insurance premium on regular basis is an easy way to mitigate any kind of financial losses due to health issues in future which may affect peace of mind and health as collateral. Thus, health insurance could be a breakthrough for common public at large who can avail best in class medical facilities in any part of the country to the extent of sum assured in the policy document without bothering to any loss of savings leading to financial and mental disability (et al Rana).

Health Insurance Coverage in India is still an untapped and unfinished market where only about 2% of the population in India as a whole is covered for a health insurance. There have been considerate measures have taken through public spending of the government on the health expenditures, but it was always not enough due to several factors, that can be seen throughout this research study. The key factors on this note are the out-of-pocket health expenditure and the lack of government health spending. However, there are other notable factors of the socio-economic indicators of the households, the coverage of health schemes in the community level and many more that add to the determinants of the health insurance coverage which will be critically and inferred in this study for justification towards the extensive coverage needed for the ongoing existence of distress financing in health expenditure by the public.

This study incorporates the status of health insurance and health expenditure from pre-industrialisation to the identification of patterns in health spendings of India and the state-wise collective bottlenecks involved in the coverage of health insurance that needs to be addressed for policy implications and obligations. Finally, the effectiveness of the prevailing Pradhan Mantri Jan Arogya Yojana **(**PMJAY) for the Universal Health Coverage (UHC) is widely addressed in the study for inclusive health security to the marginalised population in India.

Therefore, at the end of the study, the broader idea towards the complications involved in health insurance coverage can be understood by detailed models on the variables that are deciders of the ultimate achievement of Universal Health Coverage (UHC).

1. LITERATURE REVIEW

1.1 Health Expenditure and Health Insurance Sector - Pre-liberalization era:

India's pathway into the health insurance was way back in 1940s and 1950s, which was initiated for the civil servants and the formal sector workers with an enrolment towards a contributory but heavily subsidized health insurance programmes provided the means of Central Government Health Scheme (CGHS) and Employees State Insurance Scheme (ESIS) respectfully. Post Liberalization in 1990s, the health insurance sector was opened up to private sector in 1999, which was majorly benefitted by the higher income group (et al Madan). Though the Insurance industry was open to private sector, the penetration of medical insurance still remained very low. It is estimated that only around 10 per cent of the Indian population are covered under some sort of healthcare whether it is private health insurance or government schemes (et al Enthoven A). However, in recent years, there was an evident increase in initiatives to cover up the marginalised group, carried out by both the central and state with the scaling up of the government health expenditure through health schemes.

The Health Expenditure in India from the *World Development report*, 1993 showed 6% of the GDP in 1990 (pre-liberalization), which is higher than the level in many other developing countries in the Asian region, indicating out of the 6%, the 4.5% accounted for the out-of-pocket expenditures (OOPEs) of the households (et al Berman). The private out-of-pocket expenses borne by households make up most of the health expenditure, accounting for more than 75% of the total. Only 3 to 4% of healthcare provision is funded through prepayment schemes and third parties such as corporations (et al Bhat, 2004). This out-of-pocket health expenditures being unreasonably high is due not only the price fluctuations but also explains for the differences in health care spending across the country (et al Bhat, 1996).

The above empirical evidences, explains the need for health insurance coverage extensively into the future, with the rising concerns of the health expenditures growing irrationally high, majorly on the OOPEs, posing the lack of health insurance coverage in India which needs to be addressed. Thus, Health insurance plays a crucial role in not only providing a financial cover to the insured persons against their major health problems; importantly, it reduces the OOPE on healthcare by the individual. In fact, the proportion of out-of-pocket expenditure is the highest in India, mainly due to the low public health expenditure. Thus, there is a huge untapped potential in the health insurance sector, which can benefit all the stakeholders, if it is done properly (et al Anbu R). Moreover, the World Health Organization suggests that 60% of total health expenditure in India was paid by common man from his pocket, which propagates the unrecognized market for health insurance coverage in India. Therefore, Health insurance sector in India is still in its nascent stage with lot of scope for development. The overall market for health insurance is still untapped and the emergence of reputed health insurance providers is evidence about the growing potential (et al Senthil).

Several further studies and analysis in this research, investigates more in promoting and providing strong evidences for health insurance coverage, with the help of the government schemes introduced in the model at the state (collectively) and community level.

1.2 Health Insurance Coverage

Health insurance coverage in a narrow sense would be “an individual or group purchasing health care coverage in advance by paying a fee called premium”. In its broader sense, it would be any arrangement that helps to defer, delay, reduce or altogether avoid payment for health care incurred by individuals and household (et al Akila).

The Government both central and state are playing important role in insurance sector. Government coming up with new policies and schemes for poor section of society boosts the health insurance, covering the individuals include vendors, waste pickers and domestic workers in the state. The schemes include Rashtiya Swasthiya Bima Yojana (RSBY), Aam Aadmi Bima Yojan (AABY), Central Government Health Scheme (CGHS), Employment State insurance scheme (ESIS), Universal health insurance Scheme (UHIS) before Pradhan Mantri Jan Arogya Yojana **(**PM-JAY) that are provided by government for people of nation (et al Meenu Gupta). Among which we would be discussing more on RSBY’s utilities to find for discrepancy with the strengthened PMJAY in recent years for health insurance coverage, because the central and state government by the head of Ministry of Health and Family Welfare (MHFW) has initiated a large-scale health insurance coverage scheme in association with insurance companies to protect the vulnerable groups among which emerged the prominent government centrally-sponsored scheme, RSBY (et al Chidambaram). The beneficiaries of various insurance schemes need to be addressed to look for its vitality in its programme structure compared to the PMJAY’s subsumption of various health insurance schemes especially RSBY in this research. Moreover, the other two health insurance schemes remained prevalent in recent years to reach out the maximum number of beneficiaries in both rural and urban:

Employees’ State Insurance Scheme (ESIS):

Employees’ State Insurance Scheme (ESIS) that came into existence in 1952. The ESI scheme covers all employers with more than 10 employees in “notified areas”. The employees of covered employers who earn below Rs. 15,000 per month and their dependants are covered by the insurance scheme. ESIS has grown gradually from 1955-56 when it covered only 0.12 million individuals to the current more than 55 million beneficiaries (ESIC, 2010). The growth in numbers can be attributed to higher wage ceilings coming in the purview of ESI and growth in the number of workers employed in the organized sector.

Central Government Health Scheme (CGHS):

The Central Government Health Scheme (CGHS) was established in 1954. The Central Government Health Scheme (CGHS) covers another section of population employed in the formal sector. It is available to all central government employees (both working and retired), and their families, and other representatives associated with the central government. As of 2009, there were 866,687 CGHS cardholders and around 3 million beneficiaries. Interestingly, 38% of total cardholders are in Delhi and they consume about 57% of CGHS budget, followed by 8% in Kolkata who consume about 4 % of overall CGHS budget.

****this space is left intentionally****

1.3 Health Expenditure

The government health care expenditure is crucial when the existence of the OOPE dominance in the total health expenditure of the country, where the OOPE as share of total health expenditure has remained high over time- 69.4% in 2004, 64.2% in 2014 and 62.6% in 2015 (MHFW), which raise concerns for the need of extensive coverage. However, this dominance of OOPE is due the public being more inclined and preferential towards curative expenditure rather than preventive expenditure. To overcome this convention there comes the need of the government spending surpassing the private health care expenditure, because most of the budgetary allocation by the government includes preventive, promotive and primary care and curative services, whereas private expenditure is largely reliant on curative services alone (et al Bhat, 1996). Additionally, in a country like India, despite the presence of the overall health expenditures, the health security remains a distant goal due to low public health expenditures, rising healthcare costs, and high OOPE (et al Panda).

India is a mixed economy and the aid of public intervention policies contributes 1.08% of the GDP, five times lesser allocation than the world average. In contrary, the private expenditure contributes 4.8% of the GDP due to the low level of public expenditure. Further, the low level of public spending has particularly resulted in poor infrastructure for preventive healthcare and the percentage of public health expenditure out of total health expenditure incurred is 26.18, where most of the developed economies are spending more than 60% on health out of the total public expenditure (et al Rajeshkumar). In the community level, almost **60% of households in rural areas** and **40% of households in urban areas** in India resort to borrowing, selling assets, or depending on contributions from friends and family to cover the private expenditure on hospitalization for their loved ones (et al Joe W).

Based on the above evidences, several studies also find that every year a large percentage of population goes below poverty line because of catastrophic health expenditures (distress financing). India has one of the world's lowest levels of health spending as a proportion of GDP, and there is little disagreement that the pledged increase in spending is important for improving the country's healthcare (et al Senthil).

Therefore, the healthcare system in India is characterized by co-existence of public and private health centres, poor public health infrastructure, high health care costs and low insurance coverage. The poor quality of services at public health centres and low insurance coverage lead to increasing use of private health centres and high OOPE in India (et al Suyash).

1.3.1 Health Insurance: A Sustainable Alternative to Out-of-Pocket Healthcare Spending and Elusiveness:

It was observed that health insurance has been ignored by the people for several reasons based on the study from an urban and semi-urban set-up in the capital of India, which results that the family income is not a reason for such obstruction, but for the lack of awareness of usefulness of such schemes. Similarly, the respondents felt that if they did not fall sick, they were unnecessarily paying a high amount as premium which was wasted. The presence of government hospitals providing free treatment was another attraction in place of payment of health insurance premiums (et al Timira). This notion is often overstated influencing the public behaviour on health insurance coverage. This should be changed as WHO says, 3.2% Indians will fall below the poverty line because of high medical bills and about 70% of Indians spend their entire income on healthcare and purchasing drugs.

Thus, rising healthcare costs can punch a big hole in your pocket. Paying a small health insurance premium is the simplest way to mitigate the financial losses and to achieve peace of mind by availing health insurance to save yourself from worries of hospitalization (et al Swathi). Thus, taking a health

insurance cover and subsequent payment of health insurance premium on regular basis is an easy way to mitigate any kind of financial losses due to health issues in future which may affect peace of mind and health as collateral (et al Rana).

However, the health insurance premium paid and the coverage of health insurance is still **elusive** for the pledged health security by the health insurance providers. According to the report from Consumer Insurance Risk Carrier Information Log (2015), the health Insurance parts 25% of the non-life insurance, for which the premium collected has been increased from Rs 3999 cr. in 2006-07 to Rs 19677Cr in 2013-14. The factors for this rise include the growth in middle class population, higher hospitalization cost and expensive healthcare (et al Binny). In spite of this high rate of growth of earned premium, the health insurance sector is unable to make underwriting profit. This is mainly because growth of premium is more than compensated by claims incurred and commission and other expenses paid. Thereby leading to growth of underwriting loss over the years across the different insurance companies covered under both public and private sector. This unique feature of negative performance of this sector has not been studied so far in India (et al Madan). The socio-economic factor of the individual, that the amount of expenditure on private health care is correlated with the capability to pay, not to the necessity for healthcare (et al Scherer), reasons the existing growth rate of health insurance premium.

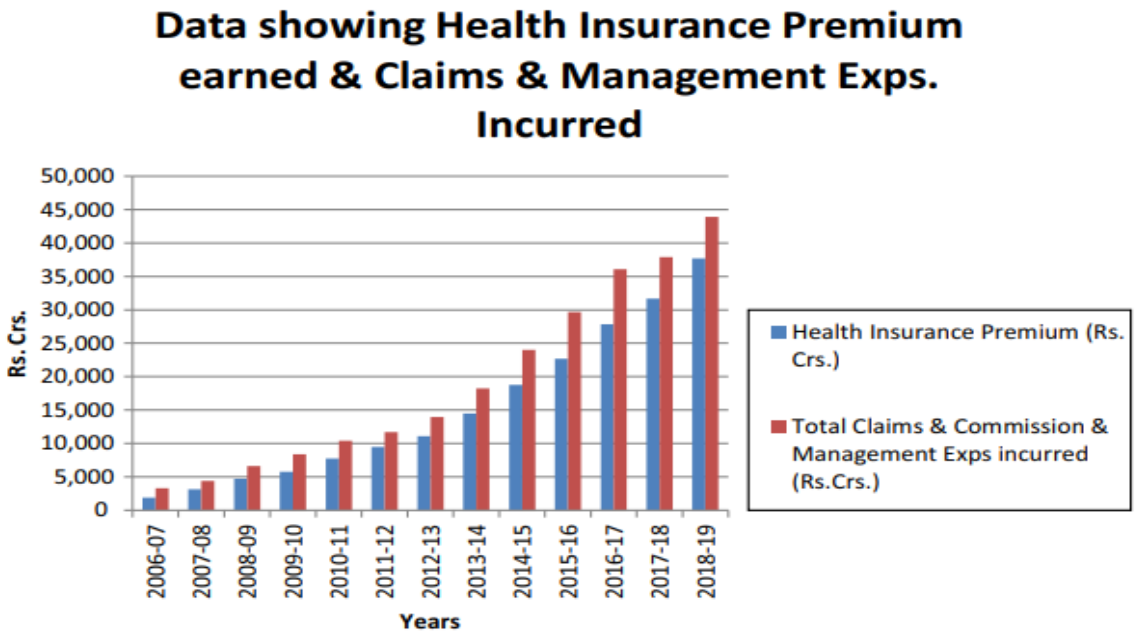

Figure 1: depicts the relationship between health insurance premium earned and claims and management expenses incurred by the insurance companies of the health insurance sector for the period 2006–2007 to 2018–2019 (et al Madan).

The impacts of these, despite the increase in the premium collected, the penetration of health insurance has been low, wherein the person covered under any health insurance scheme is **14.1% in rural areas** and **18.1% in urban areas** of India's population, in which Government employees share the major part, leaving 80% of the population uninsured (et al Meenu Gupta).

1.4 Subsuming RSBY under PMJAY: Enhancing Healthcare Access in India

India as a federal structure (with both state and central support) have launched several initiatives to provide health care services via alternative forms of insurance. One of the most noted initiatives in this regard is the RSBY with 25 states for poor (BPL households) in which almost 3.6 crore household were enrolled till 2014 (et al William). The Rashtriya Suraksha Bema Yojana (RSBY) has been launched by Ministry of Labour and Employment, Government of India in 2008 to provide health insurance coverage for Below Poverty Line (BPL) families, with an objective to provide protection to BPL households from financial liabilities arising out of health shocks that involve hospitalization (et al Senthil).

However, RSBY does not cover all the states, because either the state has a better state level health scheme or due to its incapability, as addressed by PMJAY below. Additionally, the downgrade of RSBY can be experienced as in 2016-17, where the RSBY only achieved 62% of the target of 6 crore families. Despite the increase in hospitalisation rates in India, the RSBY scheme coverage for the share of hospitals in total number of beneficiaries declined steadily since 2011. The possible reasons for this are the non-dissemination of RSBY scheme, denial of RSBY benefits at hospitals and inefficient service for RSBY cardholders (higher waiting time). The advocation of this declining trend is vital for the implementation of large-scale schemes like PMJAY to overcome such instances which can potentially lead to additional spending through OOPE that renders RSBY ineffectiveness. The PMJAY is the extension of in terms of coverage, both physically and financially. The pros and cons of the RSBY has potentially informed the design for the PMJAY in an objective manner (et al Gupta).

In the same vein, the recently launched insurance scheme PMJAY implemented in under the supervision of MHFW to mitigate the low demand for health insurance, despite the proposed cover under PMJAY of 10 crore households is inadequate as there are over 80% households may need insurance support, the PMJAY observes the setback of non-existing cover of government supported schemes with consistency of socioeconomic gradient. Subsequently, the PMJAY has considered these socio-economic gradients into its framework based upon the Socio-Economic Caste Census (SECC), by establishing the eligibility criteria in rural areas to be following at least one of the following conditions: living in **single room** dwelling built with unimproved materials (kucha walls and roof), **no adult** in the household aged 16-59 years, **female head** of household with no adult male aged 16-59 years, **Scheduled Caste/Scheduled Tribe** household, **landless** with major part of income from manual causal labour and any **disabled** person present and no adult able-bodied person (NHA). Therefore, the PMJAY follows entitlement-based scheme rather than the enrolment-based scheme like RSBY (et al Gupta)

Additionally, the dependence on private sector hospitals is another area of concern; the RSBY experience has shown that the profit-making private sector will stop participating if it feels that profits are inadequate, or it is administratively a challenge to participate. Thus, too low a premium or high administrative expense are going to remain important variables that might drive the success of the scheme, since the purpose of RSBY was to integrate the services of the private sector under a public-private partnership (PPP) mode (et al Gupta). Thus, the PMJAY has in fact tried to address this issue by keeping provisions for incentives to hospitals in backward/rural/LFE affected areas and those that have a NABH accreditation. The success of these measures remains to be seen (OECD, 2019).

The intended impact that the government wants to have, is the reduction of OOPE and extensive coverage of poor and vulnerable sections of the society by the help of these schemes.

2. SCOPE OF THE STUDY

The research results from the study on the health insurance sector and the associated health expenditure, show significant concerns on health security due to the above evidences of India's low public health expenditure and high health care costs paid from the household's OOPE that pushes them below the poverty line. When health insurance coverage being the only option to overcome this setback, paradoxically, the privilege of health insurance is also restrained to the capability of the person to pay the premium rather than the true necessity of health care, leading to unethical claims, which ultimately results in low health insurance penetration both in rural and urban (semi-urban), by disregarding the health insurance coverage to the most needful people. Therefore, the need for extensive health insurance coverage is required, bringing forth the socio-economic gradient of the community. Thus, the emergence of PMJAY can ultimately provide justification and solution for extensive health insurance coverage to the marginalised population, considering various attributes in eligibility for discovering the desired health insurance beneficiaries.

This research demonstrates the lack of government health expenditure in health insurance coverage and the alarming concerns of distress financing in health expenditure by the public. The introduction of PMJAY for Universal Health Coverage in India in achieving health security by subsuming the earlier health insurance schemes offered by the government such as the RSBY is addressed for providing health benefits across the country with various socio-economic indicators of the individuals. These ideas are accomplished by using three models:

(1) Health Expenditure, Crude Death Rate, and the Role of PMJAY in Total Health Expenditure:
The model consists with the decision to make for the National level health status by establishing relationship between the **actual expenditure of Ministry of Health and Family Welfare** (MHFW) and the **per capita Real Current Health Expenditure** (RCHE_pc), and **per capita Real Out-Of-Pocket health Expenditure** (ROOPE_pc) for details on the health expenditure incurred by the public on the goods and services consumed and the **actual expenditure incurred by PMJAY** scheme for its dominance in the MFHW budget allocation framework and the **crude death rate** for the MFHW initiatives in reducing the death rate per 1000 population.

(2) State-Level Collective Impact of Government Health Expenditure, OOPE Preferences, and Community Trends:
This model consists with the decisions on extension of health insurance for the state-level collective effects of the **Total Health Expenditure** (THE) from the contribution of **per capita Government Health Expenditure** (GHE_pc) and the dominance of **Out-Of-Pocket Expenditure** (OOPE) incurred for health and the community level coverage and borrowings that are prevailing from the THE which are the **Rural Uncovered Population** (RUP), **Urban Borrowing Population** (UUP) and the **Rural Borrowing Population** (RBP) of the health insurance and the **Total Deaths** (TD) associated with the total expenditures incurred for its outcome of mortality.

(3) PMJAY's Subsumption of RSBY and Socio-Economic Indicators of Health Insurance Coverage:
This model enhances the emergence of PMJAY surpassing RSBY's limitations in **household member's health insurance coverage** by considering existence of socio-economic factors of the household on **no adult**, **no female head, landless, disability, caste, community, single room, education of the head, PMJAY's coverage, RSBY's coverage and the wealth index country-level.**

3. METHODODLOGY AND DATA

(1) Health Expenditure, Crude Death Rate, and the Role of PMJAY in Total Health Expenditure:

The time-series analysis is adopted for the years 2007 to 2022 based on the availability of secondary data from the World Development Indicators (WDI) of the *World Bank* was used for the variables of per capita Real Current Health Expenditure (RCHE_pc) and per capita Real Out-Of-Pocket health Expenditure (ROOPE_pc) and the data for the actual expenditure of Ministry of Health and Family Welfare (MHFW), and crude death rate was utilized from the *National Health Profile (NHP), 2023* and finally, the data for actual expenditure incurred by PMJAY was utilised from *National Health Authority (NHA), 2023.*

Variable	Description	Unit	Source
RCHE_pc	The per capita estimates of current health expenditures which is adjusted in real terms using the GDP deflator setting the base year as 2011 includes the healthcare goods and services consumed during each year. This indicator does not include capital health expenditures such as buildings, machinery, IT and stocks of vaccines for emergency or outbreaks.	Rupees	WDI, World Bank
ROOPE_pc	The per capita Health expenditure through out-of-pocket payments adjusted for real terms using the CPI index, setting the base year as 2010 includes the Out-of-pocket payments which is the spending on health directly out of pocket by households in each country.	Rupees	WDI, World Bank
MFHW Actual Expenditure	The total actual expenditure incurred for the years 2007 to 2022 from the budget allocated by the MFHW	Crores	NHP.2023
Crude death rate	The number of deaths per 1,000 people in a given population over a specific period of time	deaths per 1000	NHP.2023
PMJAY actual expenditure	The expenditure of PMJAY scheme for the years 2018 to 2022	Crores	NHA, 2023
PMJAY	The levels on the presence of PMJAY scheme from 2018 to 2022	Level terms	
Covid Crude death rate	The levels on the covid out-break years from 2019 to 2022	Level terms	

Table 1: Model 1 description

(2) State-Level Collective Impact of Government Health Expenditure, OOPE Preferences, and Community Trends:

The cross-sectional analysis is adopted for 23 states in India for the year 2019 using the data available from the *National Health Profile, 2023* for all the variables except for the community population data was adopted from the *Department of Drinking Water Sanitation, 2024.*

Variable	Description	Unit
THE	The state-wise total health expenditure considering all the possible health expenditure incurred in the state.	Crores
GHE_pc	The per capita government health expenditure incurred in the states.	Rupees
UBP	The no of urban individuals who borrow for the health expenditure incurred in the states.	Crores
TD	The total deaths occurred in each state.	thousands
RUP	The no of rural individuals who are uncovered for health insurance in the states.	Crores

Table 2: Model 2 description

(3) PMJAY's Subsumption of RSBY and Socio-Economic Indicators of Health Insurance Coverage:

The Binary Regression, Logit model is using the outcome variable of household member's health insurance coverage by considering a vector of predictor variables by household's characteristics of no adult, no female head, landless, disability, caste, community, single room, education of the head, PMJAY's coverage, RSBY's coverage and the wealth index country-level all gathered from the nationally representative data from the National Family Health Survey (NFHS) on 6,33,699 households in 2015–2016 (pre-PM-JAY) and 6,01,509 households in 2019–2021 (mostly, post PM-JAY) [et al Sanjay].

Variable	Description
Household member health Insurance coverage	Is any usual member of this household covered by a health scheme or health insurance (Yes/No)
Adult	Presence of adult in the household (Yes/No)
Female head	The household with female head (Yes/No)
Landless	Land ownership (Yes/No)
Disability	The presence of disable person in the household (Yes/No)
Caste	SC/ST (Yes/No)
Rural	Rural Household (Yes/No)
Wall	The presence of an unimproved wall for a single room assumption (Yes/No)
Roof	The presence of an unimproved roof for a single room assumption (Yes/No)
No Education	The ordered responses of the household level education each on levels
Primary Education	
Secondary Education	
Tertiary Education	
PMJAY	The presence of PMJAY scheme in a household (Yes/No)
RSBY	The presence of RSBY scheme in a household (Yes/No)
Poorest	
Poorer	

Middle	The levels of the wealth index in country-level
Richer	
Richest	

Table 3: Model 3 description

4. MODEL FINDINGS

4.1. *Model 1: Health Expenditure, Crude Death Rate, and the Role of PMJAY in Total Health Expenditure:*

The time series analysis for the actual expenditure incurred by the MHFW as the dependent variable for the years 2007 to 2022 embarking a 16-year period analysis corresponding to the per capita Current Health Expenditure, per capita OOPE health expenditure incurred during those years, and the actual expenditure of PMJAY for the years 2018 to 2022 showed results for the below specified model:

$$AE\_MFHW = RCHE\_pc + ROOPE\_pc + Crude\ death\ rate$$

The model results as expected from the earlier study, implied high significance for the **per capita OOPE to be highly positive significance at 1% level**, having strong evidence for having an effect of the health spending made in order to improve health status. The **per capita current health expenditure also resulted in negative significance at 5% level**, explains the coverage made by the government for health insurance which is been studied earlier and all other consumption for the health improvement over the years is proved to have an effect on the MHFW's initiatives. Moreover, **the PMJAY schemes existence proved to have a marginal significant effect at 10% level** on the MHFW's budget allocation and its expenditure undertaken, henceforth its implementation from 2018 compared to all those years earlier, but however the **Actual expenditure made by the PMJAY is not statistically significant**. Intuitively**, the MHFW's actual expenditure incurred during the out-break of covid during the years of 2019-2022 have positive significance at 5% level** for variations with the crude death rate, meaning that the initiatives of MHFW were crucial during the pandemic with the supposed higher rate of claims rendered and likewise **the crude death rate also having a marginal significant effect at 10% level for all the years in the model.**

However, though the results provide significance on the aspects of health expenditure and the death rates for the MHFW's initiatives undertaken which included the funding of PMJAY, the proper collective approach on the above variables needs to be investigated for the health expenditure which strengthens the spending for attaining health insurance coverage at the community level for the various states across India. Thus, the model 2 enlightens the state-wise collective picture of the health status in India.

4.2. *Model 2: State-Level Collective Impact of Government Health Expenditure, OOPE Preferences, and Community Trends:*

The cross-sectional analysis propounded for advocation on the 23 states considered for the year 2019, justifies the coverage of health insurance at the community level and the urban and rural behaviour towards the health expenditure met by borrowings of the community's population by the direction of the total health expenditure of each state collectively considered in the model, the 23 states included based on the extensive presence by PMJAY are:
Andhra Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Rajasthan, Tamil Nadu, Uttarakhand and Uttar Pradesh.
The cross-sectional model used for this propagation is:

$$THE = OOPE + GHE\_pc + RUP + UBP + RBP + TD$$

Variable	Estimate Sign	Significance	p value
(Intercept)	-	insignificant	0.6378168644173
OOPE	+	1%	0.0000007477226
GHE_pc	+	insignificant	0.6401195143386
RUP	-	10%	0.0892433907500
UBP	-	10%	0.0895505310888
RBP	-	insignificant	0.5300826428746
TD	+	1%	0.0000426514660

Table 4: Model 2 results

The state-level effects of these variables collectively result in that the OOPE and the GHE_pc, which were estimated in crores and rupees respectively, explain the total health expenditure incurred during 2019, reflecting the evidence of India's low public health expenditure and high healthcare costs paid from the household's OOPE. This augments the high positive significance for OOPE and the insignificance for GHE in per capita terms for the people from each state.

The community-wise results for the rural uncovered population for health insurance and the urban borrowings population for health expenditures were both slightly negatively significant in terms of their effect on the total health expenditure, combining the fact of low health insurance penetration in the rural and urban communities. This was found to prove that as the increase in urban borrowings and the rural uncovered population decreases the total health expenditure, which generalizes the absence of claims from the executed health insurance. As more people are inclined towards borrowings and are comfortable in being uncovered for health insurance, as mentioned earlier, the population covered under any health insurance scheme is 14.1% in rural areas and 18.1% in urban areas of India's population, in which government employees share the major part, leaving 80% of the population uninsured (et al Meenu Gupta) and moreover, 60% (2015, study is for 2019) of households in rural areas and 40% of households in urban areas in India resort to borrowing, selling assets, or depending on contributions from friends and family to cover the private expenditure on hospitalization for their loved ones (et al Joe W).

The total deaths of the states collectively are also highly significant for changes in the total health expenditure, which was estimated to have an expected change of 5.79% for a one unit increase in the total deaths of the states, which is highly concerning for health insurance sector or the health care sector to take measures on the coverage of the overall population.

The health insurance coverage should be executed for the mass uncovered population who are majorly concerned on OOPE and borrowings. The emergence of PMJAY has proved to serve for this purpose since 2018 with the inclusion of various socio-economic factors that needs to be investigated for reaching the desired people for health insurance, since the research iterated that the motive of the health insurance in India is subject to capability of paying the insurance premium rather the necessity of health care (et al Scherer) and the growth of premium is more than compensated by unnecessary claims incurred (et al Madan).

4.3 *Model 3: PMJAY's Subsumption of RSBY and Socio-Economic Indicators of Health Insurance Coverage:*

The data utilised from National Family and Health Survey (NFHS) 4 and 5 including both the scheme coverages of PMJAY and RSBY, to look for their vitalness in the 6,33,699 households in 2015–2016 (pre-PM-JAY) and 6,01,509 households in 2019–2021 (mostly, post PM-JAY) and the socio-economic factors of the household members that are involved for

investigating on the basis of health insurance coverage made during those years for the household member having a health insurance of any type, the logit model used for the vector of predictors are:

HH member health Insurance coverage = Adult + Female head + landless + Disability + Caste + Rural + Wall + Roof + Education level + PMJAY+ RSBY + Wealth Index

Variable	Odds Ratio	Coefficient Sign	p value
(Intercept)	**0.5395039**	**Negative**	**0.0**
Adult	0.9778509	Negative	0.12532
Female head	0.9591894	Negative	0.09467
Landless	**1.0797266**	**Positive**	**0.0**
Disability	0.9938982	Negative	0.93004
Caste	**1.1163910**	**Positive**	**0.0**
Rural	**1.1676439**	**Positive**	**0.00**
Wall	**0.9805411**	**Negative**	**0.00991**
Roof	**1.0648047**	**Positive**	**0.0**
No Education	**1.0370056**	**Positive**	**0.0**
Primary Education	**1.0833660**	**Negative**	**0.0**

Variable	Odds Ratio	Coefficient Sign	p value
Secondary Education	**0.9409617**	**Negative**	**0.00078**
PMJAY	**1.0362746**	**Positive**	**0.0**
RSBY	67677431.13	Positive	0.32290
Poorest	**0.7017074**	**Negative**	**0.06715**
Poorer	**0.9227675**	**Negative**	**0.0**
Middle	1.0065194	Positive	0.51021
Richer	**0.9630313**	**Negative**	**0.00007**

Table 5: Model 3 results

The reference group (intercept) of the model 3 used are: Presence of an adult in the household, absence of female head in the household, presence of ownership of land in the household, absence of disabled person in the household, the caste other than SC/ST, presence of tertiary education in the household, absence of PMJAY in the household, absence of RSBY in the household, presence of Richest in the household.

Model 3 Inference:

The ability or capability to have a health insurance based on the socio-economic indicators as indicated from the results can be inferred on the following basis:
The odds of having a health insurance are 1.08 times smaller for the households with land ownership than the landless households, which states that there are higher chances of availing PMJAY scheme for those who are landless on entitlement-basis for getting the benefits offered by PMJAY.
The Households belonging to socially backward castes of SC/ST have the odds of having insurance that are about 12% higher than those from the other castes.
The odds ratio in the community level are in favour of the rural households by having higher chance of 1.17 times the urban households which shows that they have higher odds of being insured compared to their urban counterparts. This finding might reflect the successful targeting of rural communities by government programs like PMJAY and RSBY, which aim to expand insurance coverage in underserved areas.
The odds ratios for wall (0.98) and roof (1.06) quality are close to 1, indicating that the household with a single room have higher chances for the eligibility of PMJAY who have already availed for a health insurance.
The odds ratios for households headed by individuals with no education (1.04), primary education (1.08), and secondary education (0.94) reveal nuanced effects. Interestingly, households with no or primary education have marginally higher odds of insurance coverage than those with secondary education. This might suggest that government-subsidized insurance programs are reaching less-educated populations, potentially due to effective rural targeting where primary or no education levels are common. Nonetheless, the slightly lower odds for households with secondary education suggest a potential need for increased awareness about insurance benefits in communities with moderately educated populations, who might not perceive government insurance as necessary.
The odds ratio for house- holds in the poorest wealth group is 0.70, meaning that the odds of having insurance were substantially lower compared to the richer groups and the poorer groups, despite being significant. The middle-income households though the odds ratio is greater than 1, doesn't prove to have significance in attaining health insurance compared to other income groups. It was

evident from the ability to pay premium for health insurance holds true as the richer population surpassing the poorer and the poorest with higher chances of being covered under health insurance.

Finally, the major area of concern for our study, where the PMJAY subsuming RSBY in covering for health insurance across the country considering the periods of post and pre (RSBY's era) PMJAY initiative.
The odds ratio for PMJAY coverage is 1.04, suggesting a slight increase in the odds of having a health insurance under the scheme. Whereas, the RSBY with no effects collectively for having an insurance under their scheme by the households which can be due to the fact that, the design which is similar to the other major hospitalisation scheme - RSBY- the PMJAY is designed to subsume the on-going centrally sponsored schemes: RSBY and the Senior Citizen Health Insurance Scheme (SCHIS). States running similar schemes have opted to merge with PMJAY or run it in a parallel manner (et al Madan) and the performance of the PMJAY has been very dominant where a study acknowledged that the private academic hospitals need 25% to 50% more than current prices offered, across various procedures offered under the PMJAY scheme (et al Ravi K). Thus, it is evident from our study that the PMJAY scheme subsumes the RSBY scheme in terms of the coverage.

*****this space is intentionally left*****

5. CONCLUSION

In a country like India, with huge amount of poverty and low level of income, there is a greater need for a universal coverage of health insurance. Ironically, however, only around 2 per cent of the total population in the country is covered by health insurance (Anbu R). The awareness can be increased by bringing about new policies with low premium and with less fuss of difficult forms to be filled up. It is important to bring about health care for the lowest income level not only in rural area but semi urban and urban pockets in India as the present plans are not fulfilling the needs of the different strata of society (et al Preeti) as accomplished from our study that major socio-economic indicators such as the middle-income group, the households with no adult and headed by female adults are not being covered for any health insurance significantly and the pressing issue of the disabled member in the households not being covered for health insurance from the results of the model needs to be prioritized.

The OOPE expenditure for its dominance in the total health expenditure of the country as proved from our model 1 and 2 across years and across states show that the need for government spending is crucial for health insurance coverage as well as the reduction of in-hand expenditures made for health care, where, according to WHO statistics, hospital admissions about 47% in rural areas and 31% in urban areas respectively, were financed by loans and sale of assets. Notably, there is cross-country evidence that shows that increased government spending on health in turn is associated with lower out-of-pocket health spending (et al Senthil).

The cost of providing health services disproportionately increasing and the health expenditure showing a declining trend, resulting that the decline in real spending on health services is of a higher magnitude and thus the reason of GSDP increasing is due to the economic and industrial development. But Economic growth makes it possible to finance good environmental health. In addition, it contributed to improve quality of life and health status of people, via increased life expectancy, falling in infant, child, and maternal mortality rates (et al Rajesh).

Key Implications:

- As demographic composition of India is currently experiencing increasing share of youth and working age population, policy emphasis on providing coverage for children and youth assumes salience. Since, this age group has lowest rate of hospitalization and lowest OOP expenditure on health care; insurance premiums for teen and youth can be very low; also, risk-pooling can be very effective for this age group.

- As studied, the states which have higher rates of total death occurring in older population due to health issues as concerned from the demographic aspect, the health insurance coverage is in greater need for elderly population which is also accompanied with higher rate of OOPE. This can be addressed with the mandate of health insurance coverage through effective policies, that can have significant solvency in the future.

- The achievement of UHC as by the standards of having OOP spending to be less than 15%-20% of total health spending as a threshold benchmark recommended by the World Health Organization (et al Tandon), can be made possible with higher public spending on health care and through extensive coverage of health schemes in the rural and as well as the urban blocks.

REFERENCES:

Akila M. (2013), Penetration of health insurance sector in Indian market. *International Journal of Management* Vol. 3, Issue 1, Pp. 55-67.

Bhat, R., & Babu, S. K. (2004). Health insurance and third party administrators: Issues and challenges. *Economic and Political weekly*, 3149-3159.

Bhat, R (1996): 'Regulation of the Private Health Sector in India', *International Journal of Health Planning and Management*, 11, pp 253-74

Devi, S., & Nehra, V. S. (2015). The problems with health insurance sector in India. *Indian journal of research*, *4*(3), 6-8.

Sahoo, P. M., & Rout, H. S. (2024). Charting the course: India's health expenditure projections for 2035. *Global Health Journal*.

Panda, B., & Rout, H. S. (2020). Access, utilisation and challenges of Biju Krushak Kalyan Yojana (BKKY): a case study from Odisha, India. *J Rural Dev*, *39*(2), 278-291.

Wahab A, Kefeli Z. Projecting a long term expenditure growth in healthcare ser□vice: a literature review. Procedia Econ Finance. 2016;37:152-157.

Joe, W. (2015). Distressed financing of household out-of-pocket health care payments in India: incidence and correlates. *Health policy and planning*, *30*(6), 728-741.

Tandon A, Reddy KS. Redistribution and the health financing transition. J Glob Health. 2021;11:16002.

Wahab, A. A. O. A., & Kefeli, Z. (2016). Projecting a long term expenditure growth in Healthcare Service: A literature review. *Procedia economics and finance*, *37*, 152-157.

Scherer, P. and Devaux, M. (2010). The challenge of financing health care in the current crisis: an analysis based on the OECD data, Health Working Papers 49, OECD.

Rajeshkumar, N., & Nalraj, P. (2014). Public expenditure on health and economic growth in selected Indian states. *International Journal of Science and Research*, *3*(3), 468-472.

Ministry of Health and Family Welfare, Government of India. National Health Accounts, India 2014-15. 2017. Avaiable from: https://mohfw.gov.in/sites/default/

Joe, W. (2021). Health insurance coverage in India: Insights for national health protection scheme. Scribd. scibd/ Health insurance coverage

Swathi, K., & Anuradha, R. (2017). Health insurance in India–An overview. *IOSR Journal of Business and Management (IOSRJBM)*, 49-52.

Aubu, R. (2014), “Marketing of health insurance policies: a comparative study on public and private insurance companies in Chennai city”, UGC Thesis, Shodgganga.inflibnet.ac.in

Madan, M. M. (2020). Health insurance sector in India: an analysis of its performance. *Vilakshan-XIMB Journal of Management*, *17*(1/2), 97-109.

Timira., & Singh, P (2017). Penetration of health insurance in India: reality or mirage?. *Emerging Issues in Finance*, *2017*, 23-35.

Berman, Peter(1995): 'Financing of Rural Health Care in India*: Estimates of the Resources Available and Their Distribution',* paper prepared for International Workshop on Health Insurance in India

Ellis, R. P., Alam, M., & Gupta, I. (2000). Health insurance in India: prognosis and prospectus. *Economic and Political weekly*, 207-217.

Senthil, K., & Ramamoorthy, R. (2014). Health insurance market in India–the way forward. *Health and Medical Care Services: Claims on National Resources*, *178*.

Jawaharlal U, “Indian Health Insurance Market-A Road Map to the Future”, Insurance Chronicle, Vol-VII, Issue-I, The ICFAI University Press, Hyderabad, (January 2006), Pp. 24-27.

Abishek Singh, Singh, R. R., & (2020). A study of health insurance in India. *International Journal of Management IT and Engineering*, *10*(4), 121-134.

K Swathi and R Anuradha (2017), Health insurance in India- An overview. *IOSR Journal of Business and Management (IOSRJBM)*, 49-52

Binny, M. G., & Gupta, M. (2017). Health insurance in India–opportunities andchallenges. *International Journal of Latest Technology, Engineering, Management and Applied Sciences (IJLTEMAS)*, *6*.

Ravi K. B., Prasad, J. L., Bhaskar, N. L., & Kumar, P. N. (2024). Study on Universal Health Coverage Scheme in India–The Stumper to Private Hospitals. *Hospital Topics*, 1-7.

Gupta. I Chowdhury, S., & Ramandeep, A. R. (2019). PROJECT REPORT AYUSHMAN BHARAT COSTS AND FINANCES OF THE PRIME MINISTER’S JAN AROGYA YOJANA (PMJAY).

National Health Authority. PM-JAY criteria. 18th July, 2023. New Delhi: Government of India About PM-JAY - National Health Authority | GOI

Sanjay. M K., Upadhyay, A. K., Maiti, S., Mishra, R. S., Kämpfen, F., Maurer, J., & O'Donnell, O. (2023). Public health insurance coverage in India before and after PM-JAY: repeated cross-sectional analysis of nationally representative survey data. *BMJ Global Health*, *8*(8), e012725.

Chidambaran, N. K., Thomas, P. A., & Anthony, S. (1997). An investigation of the performance of the medical insurance industry. *The Journal of Risk and Insurance, 64*(2), 371–381.