

HEALTH INSURANCE AND DETERMINANT OF INPATIENT OUT OF POCKET HEALTH EXPENDITURE IN INDIA

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Abstract

This paper examines the effect of health insurance on out of pocket (OOP) health expenditure and determinant of the OOP health expenditure in India, using the 71st round of NSSO national representative from India on Social Consumption: Health. This study uses the multivariate regression model to analyse the determinant of OOP health expenditure. The study found that the coverage of government-provided health insurance is higher than private health insurance. Moreover, the study further reveals that average OOP is lower among patient with insurance in general and particularly the lowest among the government covered insurance inpatient. Finally, the study conclude that health insurance had reduced the OOP inpatient health expenditure in India. Last, study found that patients with household arrange health insurance have lowest OOP health expenditure as compared to patients without health insurance.

Keywords: Inpatient, Health Insurance, Out of Pocket, India.

JEL classification: I13, I18.

1. INTRODUCTION

Medical expenses may rise when people become sick or unhealthy. The rise of health expenditure also depends on the presence of health insurance and it is possible that the health insurance reduces the large burden to the household. However, health insurance does cover all health expenditure, either due to ceiling or exclusion of certain ailments or medicine. On the other hand, it is also possible people do not cover under insurance. The fundamental principle of health insurance is to lessen “financial risk” (Smith, 2005). The importance of health insurance is associated with the unpredictability of health expenditure. The amount of insurance premium is related to the risk of medical expenditure. The health expenditure fluctuates with the type of morbidity, and it also varies with individuals. Although people are somewhat aware of the medical services as the need arises, it varies for

each individual. Risk-averse household wants to be protected with catastrophic health payment. The critical solution is to ensure high health spending by risk pooling among the population. Health risk has always been with humankind, but health insurance is a new phenomenon compared to other types of insurance, which were available for a long time in developed countries. Now, health care becomes “expensive commodity” due to the increasing cost of health care and high health expenditure. Thus, people started using health insurance, and it became a desirable risk pooling mechanism among the people (Cutler & Zeckhauser, 2000).

Much of the attention has been given to the study of the efficiency of health insurance and “rational choice” actors. It has also narrowly focused on the performance of health care services as compared to the overall economy. Now, researchers are engaged in studying health care financing. This has happened due to the increasing costs of health care and the role of health insurance in health care financing. The choices adapted to health care financing will have “intergenerational” and multiple paths to the growth of a household (McGuire, 2011). The principal objective to build health system in society must be in term of equity in order to achieve “equal opportunities for maintaining good health” by each member of the society. However, modern societies are characterised by disparity at all level including health system (Sharma et al., 2018). There is limit to achieve better health and reduction in health expenditure through health insurance and “infrastructure strengthening” because people face much wider like problems of “unaffordable health care” and substantial “financial risk”, and the future risk caused by ageing populations that are affected by long-term ailments (Yip & Mahal, 2008).

Health spending growth is high, and the average health expenditure is increasing. The health insurance is significant to the income smoothing coping strategies adopted by a household. Though the prevalence of health insurance is very low, yet the share of health insurance is increasing over the period in India. In India, most of the health insurance schemes are provided by the state and central government. This health insurance scheme is in the form of the Rashtriya Swasthya Bima Yojana (henceforth RSBY) scheme, State, and Government employee health insurance scheme and employer provided, and household arranged health insurance share is shallow (NSSO, 2016). The basis for designing RSBY, was a residual and targeted approach to poverty (poor) and health rather than addressing health as a universal “human needs” or access to health care. This led to focusing only on a specific vulnerable group like a BPL card holder rather than those that could be seen as poor from the angle of affordability of health care. Secondly, the issue with RSBY design is that it only includes high inpatient care that will involve catastrophic health payment to the household (Virk & Atun, 2015).

Health insurance is one of the important coping strategies used to protect household’s well-being with adverse health. However, health insurance is not the only factor that determines the Out of Pocket (henceforth OOP) health expenditure but also it also varies with socio-economic, ailment and type of service used by the

patient. Health insurance works on the risk sharing coping mechanism. To address the issue of health insurance and household well-being, it is important to analyse the coverage of different type of health insurance scheme; second it is equally pertinent to analyse, whether health insurance decreases the burden of health expenditure on household? In order to address these questions, the study first analyses the coverage of different type of health insurance. The study have four category of health insurance namely government-provided health insurance, employer supported health protection (other than government), arranged by household with insurance companies and Other. Then study analyses the OOP health expenditure due to inpatient care among the insured households and uninsured households. Finally, study uses the multivariate regression analysis the examine the determinants of OOP health expenditure for inpatient.

2. LITERATURE REVIEW

2.1 HEALTH INSURANCE AND OUT OF POCKET HEALTH EXPENDITURE

The coverage of health insurance have an impact on the utilisation of health services. In other words, use of health care is high among the insured than an uninsured group, but there is no conclusive evidence to prove that insurance coverage benefit less OOP health expenditure (Prinja et al., 2017). Shou-Hsia & Tung-Liang (1997) has studied the effect of newly introduced Universal Health Insurance (henceforth UHI) on out-patient, inpatient, and use of emergency department visits in Taiwan. The result shows that UHI have marginally significant improvement of out-patient care use and insignificant result found for the inpatient and “emergency department visit”. The UHI has not been able to decrease health care expenditure.

Chandoevrit & Phatchana (2018) in their study examines the health insurance Civil Servant Medical Benefits Scheme (CSMBS) and Universal Coverage Scheme (UCS) health insurance and inpatient health care expenditure with chronic morbidity among the elderly population in Thailand who died between 2007-2011. Patients with CSMBS has higher inpatient health expenditure than UCS. But the magnitude depends on the type of disease. This difference of health expenditure by the health insurance is because of the way these scheme works. In case of CSMBS, patient can directly visit their choice of secondary hospital whereas UCS need referral to visit secondary hospital. Bonfrer et al. (2018) analyses the upgradation of health services health insurance and uninsured household using propensity score matching method of the panel data during 2009 and 2011. This study found that the uninsured household’s has low health expenditure. Further, this study found that the program decrease the OOP health expenditure among the insured household. Finally, the findings of this study suggest that the insurance with the improvement of health services increases its utilization and reduces the OOP.

Sahoo & Madheswaran (2014) found that health insurance has decreased the OOP in India. The mean OOP is lower among the households with insurance than uninsured households. A study by Damme et al. (2004) found that the OOP is related to the type of health services the provider is using. OOP from the public health services provider was US \$8 whereas average OOP of the private health services provider was US \$103. The average OOP of household uses the public and private health services which was US \$32 in Cambodia.

In rural India, RSBY increases the use of the health care service for the major morbidity. It does not improve the health care services used in urban India. Household with RSBY beneficiary have approximately 3 percentage point better chance of treatment of any morbidity and 5 percentage point for major morbidity in rural area. In urban area, insignificant result found that effect of RSBY card holder on the treatment of morbidity. In addition, the result also suggests RSBY does not decrease the OOP health in both rural and urban place of residence. But, RSBY beneficiary has lower OOP than other household but the result is statistically insignificant. The study also found that OOP on medicine is lower among the RSBY household in rural area, but it is statistically insignificant (Azam, 2018). Selvaraj & Karan (2012) examined the effect of RSBY scheme in India by using National Sample Survey Organisation (NSSO) 61st (2004-05) and 66th (2009-10) data. It has used “case control approach” i.e. intervention district where RSBY is introduced and continued till June 2009-10 and control district or “non-intervention district” where this scheme has not been implemented. The result suggest that the real per capita health expenditure has increased during both periods. The OOP per capita expenditure has increased between both the periods, 1.9 percent of annual average growth rate of OOP. This rise in OOP was due to the increase in the inpatient health care expenditure whereas expenditure on medicine and outpatient were same. The gap between intervention and non-intervention district is lower in the post-insurance period than pre-insurance period. This decline gap of intervention and non-intervention is due to the declined outpatient health expenditure. The poorer district with RSBY and other state health insurance intervention district experience increases in the catastrophic head count and it has increased the catastrophic head count among poor population. Singh & Kumar (2017) found that the coverage of any health insurance is approximately 5 percent only in Uttar Pradesh. The coverage of government funded insurance schemes¹ and others have supported the household is low in UP.

Barnes et al. (2017) shows that the OOP is less among the insured household, and especially among the upper quintile group. The payment to health insurance is lower as compare to payment received in case of the health problem. In other words, “financial risk reduction” is higher than payment of health insurance. The ratio is 2-5 times of “financial risk reduction” and cost of insurance. Xu et al., (2018) found

¹ Employee State Insurance Scheme (ESIS), Rashtriya Swasthya Bima Yojna (RSBY), Central Government Health Scheme (CGHS) (Singh & Kumar, 2017).

that OOP is lower among the insured household than uninsured in both rural, urban area and overall population. The hospitalisation cost is higher among the insure household than uninsured household for mental health. The rural area has lower hospitalisation cost and OOP among insured household than uninsured household. Length of stay is higher among insured household than uninsured household and conversely true for rural area. Utilization of mental illness varies with the type of health insurance. Ranson (2002) found that some household still face catastrophic health, approximately 6 percent of the household among the Community-based health insurance (CBHI) have incurred catastrophic health expenditure. This percentage increased among the lower quintile, it is 11.7 percent in lower quintile and 2.8 percent among the fifth quintile. The percent poor is same for both claimant and non-claimant group. The average income of the claimants was lower than overall population and it is statistically significant.

The section of the review conclude that health insurance increases the utilisation of health care. The degree of increase in the utilization of health care is depend upon the type of health insurance, service provider and socio-economic characteristics of the households. This study examines the utilization of health insurance of the household due to illness. Household has to enrol in government health insurance in advance i.e. before the health problem occurs. Health insurance is one of the important coping mechanisms and works on the risk sharing or pooling coping mechanism. This study analyses whether risk managing mechanism is able to insure household against illness and tries to find out whether public or private health insurance is able to insure household welfare. In other words, does health insurance reduces the household OOP health expenditure in India.

3. DATA SOURCE AND METHODOLOGY

3.1. DATA SOURCE

This study have used NSSO 71st round on Social Consumption: Health and it was conducted during January - June 2014. The study have used the information on inpatient care in the last 365 days and other household information like type of health insurance, type of ailment, monthly total consumption expenditure, age, sex and other demographic characteristics (See Table 3). This survey covers 95 percent of the total population in India (NSSO, 2016). The study have used inpatient health care utilization data. This study have excluded the dead person because information about the insurance coverage is not available and also their information on consumption will not be included in total consumption expenditure of the household because of their departure (Grimm, 2010). The sample size in this case is 40456 hospitalized cases for the different type of ailment in India. The study also excluded the childbirth cases because the government has a separate policy related to childbirth i.e. Janani Suraksha Yojana (JSY). As Khan (2018) have found in that the implementation of JSY in the villages has less percentage of coverage of the RSBY scheme. Moreover, childbirth is not morbidity, hence the study have excluded it from

the analysis. The OOP health expenditure is calculated after subtracting the insurance reimbursed by employer or company from the total health expenditure.

3.2. MULTIVARIATE REGRESSION ANALYSIS OF OOP INPATIENT HEALTH EXPENDITURE IN INDIA

This paper is based has analysed the determinant of OOP health expenditure in India using multivariate regression model:

$$\log y_i = \alpha_i + \beta_1 x_i + \beta_2 x_{2i} + \dots + \beta_{mi} x_{mi} + \varepsilon_i \quad (1)$$

$\log y_i$ is dependent variable represents the log of OOP health expenditure and variety of independent and control variable used in the model. The model also assesses that multicollinearity² using "Variance- Inflating Factor" in Stata software and found that none of the independent variables has VIF more than 10 and it suggests that there is no multicollinearity in the model³. This study also found that Ramsay RESET is Stata software and found that the model has no omitted variable at the standard 5 percent level of significance and model find the presence of heteroskedasticity and used the robust standard error.

4. RESULTS AND ANALYSIS

4.1 HEALTH INSURANCE COVERAGE BY SOCIO-ECONOMIC CHARACTERISTICS

There are many studies which suggest that there is a positive relationship between insurance cover and utilisation of health services (Prinja et al., 2017), the insured group have a higher probability of using health care as compared to uninsured group (Azam, 2018; Jutting, 2001). At the same time, other literature also deals with the type of insurance or insurance provider as significant concerning the utilisation of the health services. This study tests this empirical finding in this section. This study has four sources of a support system of health insurance in India. These four categories are as follows; government-funded insurance scheme includes RSBY, Arogyasri, Central Government Health Scheme, Employment State Insurance Scheme (henceforth government-funded insurance scheme), etc., employer-supported health protection (other than government), arranged by a household with insurance companies and others. The coverage of health insurance is 15.3 percent in India during 2014. The share of government-funded insurance scheme is more than 80 percent of the total health insurance of all type in India. Health insurance, by definition, depends on the type of disease and one relevant

² If the VIF of a variable is more than 10, then the variable has Multicollinearity problem (Gujarati & Porter, 2008, p. 340).

³ Results of Ramsay RESET and Multicollinearity can be provided on demand.

category is the chronic⁴ ailment. This study found that approximately 30 percent of the population with chronic illness has insurance cover, whereas no chronic ailment person has approximately 14 percent, which shows that is 16 percentage point lower. The coverage of public and private health insurance is higher among the chronic morbid person. The share of public insurance in the person with chronic illness and without chronic illness is only approximately one percentage point. The coverage of health in the rural-urban place of residence shows an interesting fact. This study also found that urban area (19.02 percent) has higher level insurance coverage than the rural area (14.06 percent). However, the coverage of government-funded insurance scheme is higher in the rural area and conversely valid for private health insurance coverage (see Table 1).

The analysis of coverage of health insurance by type of household suggests that regular wage/salary earning group have the highest percentage of the insured person (22.72 percent). The lowest average of health insurance is among the self-employed group (12.77 percent). The regular wage/salary earning group have higher than all other categories of the type of household to the government-funded insurance scheme, private employer-supported health protection, household arrange health insurance and other. The type of insurance also found that this group has the highest coverage with government-funded insurance scheme (16.18 percent). The “Other” category of the household has the highest percentage of health insurance covered under “Other” category of health insurance (see Table 1).

Table 1: Distribution of Health Insurance Coverage by Socio-economic Characteristics, 2014, India

Characteristics	G	P	H	Other	TIC	NC	Sample Size
Chronic Ailment							
Yes	25.67	1.84	2.65	0.17	30.3	69.67	18,212
No	12.12	1.13	1.14	0.1	14.5	85.52	3,14,890
Total	12.78	1.16	1.21	0.1	15.25	84.75	3,33,102
Place of Residence							
Rural	13.12	0.62	0.25	0.07	14.1	85.94	1,89,573
Urban	11.97	2.42	3.45	0.18	18	81.98	1,43,529

⁴ Chronic ailment defines as “if any member of the household was experiencing symptoms persisting for more than one month on the date of survey – indicating any problem caused by an ailment affecting any organ of the body? excluding (i) Minor skin ailments (ii) Cases of headache, body ache, and minor gastric discomfort after meals, even if of a long-standing nature, unless these cause restriction of his/her activity. (iii) Disabilities such as congenital blindness, OR he/she was taking a course of treatment on medical advice for a period of one month or more and continuing as on the date of survey, aimed at alleviation of the symptoms of any ailment, is defined as having chronic ailment” (NSSO, 2016).

Sex							
Male	12.49	1.2	1.26	0.09	15.04	84.96	1,68,696
Female	13.08	1.11	1.16	0.11	15.46	84.54	1,64,406
MPCE Quintile							
MPCE Quintile 1	9.8	0.67	0.02	0.08	10.57	89.43	71,711
MPCE Quintile 2	10.68	0.72	0.19	0.09	11.68	88.32	66,899
MPCE Quintile 3	11.98	0.8	0.44	0.04	13.25	86.75	63,530
MPCE Quintile 4	14.93	1.3	1.05	0.14	17.42	82.58	68,898
MPCE Quintile 5	16.82	2.4	4.62	0.15	23.99	76.01	62,028
Total	12.78	1.16	1.21	0.1	15.25	84.75	3,33,066
Household Type							
Regular wage/salary earning	16.18	3.7	2.71	0.13	22.72	77.29	75,126
Self-employed	10.93	0.56	1.2	0.08	12.77	87.22	1,73,237
Casual labour	14.04	0.62	0.09	0.11	14.86	85.15	69,752
Others	13.26	0.87	1.54	0.15	15.82	84.17	14,987
Total	12.78	1.16	1.21	0.1	15.25	84.75	3,33,102
Sample Size	41,027	4,230	4,326	645	50,228	2,82,838	3,33,066

Note: G- Percent covered under government funded insurance scheme, P- employer supported health protection (other than government), H- arranged by household with insurance companies, TI- Total Insurance Covered, NC- Not covered.

Source: Author's own calculation using unit level data of NSSO 71st round

4.2 OUT OF POCKET HEALTH EXPENDITURE (OOP) BY TYPE OF SERVICES PROVIDERS AND SOCIO-ECONOMICS STATUS

The study found that average OOP health expenditure for inpatient care per hospitalisation case is four times higher in private health care (24601 rupees) use than a public health facility (6785 rupees). This average OOP gap is lower private-public among the uninsured group (four times) than the insured group (three and half times) of the patient. However, the absolute gap is higher among the uninsured as compared to the insured group of patients. This study also found that MPCE Quintile class 1 has the lowest average OOP expenditure (10701 rupees) and highest is among the MPCE fifth Quintile (25924 rupees). The average OOP expenditure is lower among the insure MPCE Quintile group than uninsured MPCE Quintile group. The MPCE Quintile classes fifth has a higher gap of average OOP (11490 rupees) than national average gap (4879 rupees) among the insure and uninsured group (see Table 2).

Table 2: Average Medical Expenditure in Health Insurance by Socio-economic Characteristics, 2014, India

Characteristics	Average OOP (Rupees)		
	Insured	Uninsured	Total
Type of Hospital			
Private	19682	25982	24601
Public	4779	7348	6785
MPCE Quintile Classes			
MPCE Quintile 1	8701	11035	10701
MPCE Quintile 2	9274	13987	13210
MPCE Quintile 3	10935	14758	14023
MPCE Quintile 4	14064	18319	17340
MPCE Quintile 5	17742	29232	25924
Household Type			
Regular wage/ salary earning	15686	20893	19386
Self-employed	14741	20532	19511
Casual labour	10491	11818	11494
Others	16731	24813	22986
Total	14018	18898	17828

Source: Same as Table 1.

The analysis of OOP among the household type suggests that person belongs to “Other” household has highest average OOP (22986 rupees) followed by self-employed household (19511 rupees). The person from “Other” household has highest average OOP expenditure (16731 rupees) among the insured group followed by regular wage/ salary earning (15686 rupees). Moreover, a person belongs to “Other” type of household have a higher gap of average OOP expenditure (8082 rupees) between insured and uninsured group followed by 5791 rupees among the self-employed. The person belongs to casual labourer household has the lowest gap of average OOP expenditure (1328 rupees) between the insured and uninsured group (see Table 2).

4.3 THE DETERMINANT OF OUT OF POCKET INPATIENT HEALTH CARE EXPENDITURE IN INDIA

Table 3 presents the determinant of OOP health expenditure in India during 2014 for inpatient health care. This paper uses the OLS regression model to examine the determinant of OOP health expenditure for inpatient, especially to understand the relationship between health insurance coverage and OOP health expenditure. The study have checked the multicollinearity, omitted variable test and found that the model does not have the problem of multicollinearity and omitted variable bias. In order to understand, the association between type of health insurance and OOP. This

study has OLS regression model that includes the types of health insurance. The results suggest that hospitalised person with the government-funded insurance scheme have 40.1 percent lower OOP than a person without any insurance, this percentage increased 52.3 percent for the private employer health insurance. Person hospitalised with household arranged health insurance has 58.9 percent lower OOP than an uninsured person. Person hospitalised with “Other” category of health insurance have 44.3 percent lower OOP than the uninsured person in India, and these above results are statistically significant at 1 percent (see Table 3).

The study also found that public hospital has 134.1 percent lower OOP health expenditure as compared to the private hospital. It is important to understand the severity besides ailment is to know whether medical care is taken before hospitalisation. The result suggests that person taken medical advice before hospitalisation is 10.4 percent more OOP health expenditure than a person without medical advice, and the result is statistically significant at 1 percent. It is also necessary to examine the type of services and OOP. This study finds that patient used surgery, X-ray, have 45.0 percent and 47.0 percent higher OOP than a patient without surgery and X-ray, respectively, and the result is statistically significant at 1 percent (see Table 3).

It is also imperative to understand the OOP by type of household. The type of household will inform the vulnerability to income that will have an impact on health care utilisation, and it will have an impact on the OOP. This study finds that person belongs self-employed (13.1 percent) have a higher percent of OOP as compared to a person from the Regular wage/salary earning, the result is significant at 1 percent. The study also found that Quintile second, third, fourth and fifth have a higher percentage of OOP than MPCE quintile first. To be precise, Quintile second, third, fourth and fifth have 6.9 percent, 10.4 percent, 15.4 percent and 30.7 percent higher OOP than MPCE quintile first, respectively. This result suggests that as MPCE quintile increase percent of OOP health expenditure also increases (see Table 3).

Table 3: Determinant of Out of Pocket Inpatient Health Expenditure in India, 2014

Log Out of Pocket Inpatient Health Expenditure	Coefficient	Regression Model	
		[95% Confidence Interval]	
Health Insurance			
Uninsured			
Government Support	-0.401***	-0.433	-0.369
Private Employer Support	-0.523***	-0.632	-0.414
Household arrange	-0.589***	-0.695	-0.483
Others	-0.443***	-0.645	-0.240
Type of Hospital			
Private Hospital			
Public Hospital	-1.341***	-1.364	-1.318
Sex of Patient			
Male			

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Female	-0.052***	-0.072	-0.031
Hospitalisation Serial Number	-0.034***	-0.047	-0.020
Log Duration of Stay in Hospital	0.682***	0.668	0.695
Chronic Ailment of Patient			
No			
Yes	-0.032**	-0.061	-0.002
Type of Services			
Surgery not received			
Surgery Received	0.450***	0.424	0.475
X-ray not received			
X-ray received	0.470***	0.446	0.493
Other Services not received			
Other Services Received	0.235***	0.204	0.265
Treated on Medical Advice before Hospitalisation			
No			
Yes	0.104***	0.083	0.126
Reporting of Ailment			
Proxy			
Self	-0.034***	-0.056	-0.012
Caste Group			
Others			
OBC	-0.112***	-0.136	-0.087
SC	-0.113***	-0.146	-0.080
ST	-0.193***	-0.235	-0.150
Religion			
Hindu			
Muslim	-0.033**	-0.064	-0.003
Christian	0.095***	0.043	0.148
Others	0.130***	0.070	0.190
MPCE Quintile			
MPCE Quintile 1			
MPCE Quintile 2	0.069***	0.032	0.105
MPCE Quintile 3	0.104***	0.067	0.140
MPCE Quintile 4	0.154***	0.118	0.191
MPCE Quintile 5	0.307***	0.268	0.346
Age	0.001***	0.001	0.002
Place of Residence			
Rural			
Urban	-0.011	-0.036	0.013
Household Type			
Regular wage/salary earning			
Self-employed	0.131***	0.103	0.160
Casual labour	-0.021	-0.055	0.013
Others	0.036	-0.013	0.085
Educational Level of Head			
Graduation & above			
Higher secondary	-0.095***	-0.145	-0.045
Upper primary/middle and high School	-0.188***	-0.228	-0.148
Primary & below	-0.278***	-0.321	-0.236
Illiterate	-0.305***	-0.349	-0.262

Household Size	0.030***	0.025	0.035
Water Type			
Bottled water, tap			
Tube-well/hand pump, tankers	0.110***	0.087	0.134
Others ⁵	-0.019	-0.054	0.016
Student Stay in Hostel			
No			
Yes	-0.134*	-0.282	0.014
_cons	7.620***	7.543	7.697
Number of observations= 40,059			
F(37, 40021) = 1214.88			
Prob > F = 0.0000			
R-squared = 0.5518			

Source: Same as Table 1. ***<0.01, **<.05, *<0.1.

5. CONCLUSION

This study has tried to examine the role of the coverage of health insurance and its impact on OOP health expenditure of inpatient health care expenditure in India. The study found that the coverage of health insurance is modest (15.3 percent), and the majority of the health insurance coverage is through the government provided health scheme or employees. The government-funded insurance scheme's coverage is more than 80 percent of the total health insurance coverage in India. Moreover, its' share is higher than private health insurance coverage and others. Further, this study found that the coverage of health insurance is higher in the urban locality than in the rural locality. The urban-rural gap is four percentage point. However, the coverage of the government-funded insurance scheme is higher in the rural place of residence than the urban place of residence. The finding also suggests that private health insurance coverage is higher among the urban area than the rural area.

The average OOP health expenditure is higher among the uninsured hospitalised person as a contrast to the insured hospitalised person. The average OOP is lower among the insurance covered group as compared to the uninsured group. This result also confirms from the regression analysis. This finding is with the result of Sahoo & Madheswaran (2014), Barnes et al. (2017) and Xu et al. (2018) that OOP is lower among the insured household than uninsured. The regression analysis also found that the type of health insurance has a different level of OOP among the insured group with reference to the uninsured group. The regression result found that government-funded insurance scheme covered group has 40.1 percent OOP expenditure lower than the uninsured group. The result further reveals that household arranged health insurance has 58.9 percent lower OOP expenditure as compared to the uninsured group. Patients with private employer support health insurance has 52.3 percent lower OOP health expenditure than patient without health insurance.

⁵ Others includes pucca well, tank/ pond reserved for drinking, river/canal and others.

To improve the coverage of health insurance and its benefits to the large population in India. It is necessary to increase the coverage of health insurance in the rural area because the majority of the population lives in rural area. It can be achieved through the government-funded health scheme.

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