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RESEARCH ARTICLE

ESTIMATION OF COST OF HOSPITALIZATION IN INDIA: INSIGHTS FROM THE 71ST ROUND OF NATIONAL SAMPLE SURVEY (NSS), INDIA

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ABSTRACT

Background: The prohibitive cost of hospitalization is one of the causes of impoverishment in India. Every year, about 2-3 percent population of India is being pushed into below poverty line because of out-of-pocket expenditure on hospitalization (Garg and Karan, 2009). Presently, around two-thirds of the total health expenditure in India is out of pocket (NHA, 2013-14). Therefore, the study on cost of hospitalization is paramount important from a policy perspective.

Study Objectives: The objectives of the study were to examine the inter-state disparity in the cost of hospitalization, to study the gross and net differentials in the cost of hospitalization and to examine the source of finance for hospitalization in India.

Materials and Methods: This paper is based on the unit level data of NSSO 71st round survey. NSSO is the main survey agency at national level in India and responsible for collecting data on socio-economic and health for the purpose of planning and policy making. The present survey was based on a sample size of 65,932 households across the country. Both bi-variate and multi-variate statistical techniques were used for data analyses using Stata and SPSS.

Results: In India, the cost of hospitalization is rising over the years. The average total cost of hospitalization in nominal terms has increased more than two and half times both in rural and urban areas during the decade of 2004 to 2014. The net differential in the cost of hospitalization among various sub groups of population was relatively lower than the gross differentials. In 2014, the gross total cost of hospitalization in private facilities was nearly 4.5 times that of public facilities. Household income/saving and borrowing were the two major source of finance for hospitalization for nearly three-fourth and one fifth households in India, respectively.

Conclusions: Strengthening public health sector in the country is the need of the hour. The increasing use of the low cost public health facilities would help in achieving the twin objective of the new national health policy: reduction of out-of-pocket spending on health care and reduction of poverty. Ultimately it is a step forward to attain the objective of 'universal health care' as envisaged in the SDGs.

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INTRODUCTION

Hospitalization is an indicator of health status of a population. The prohibitive cost of hospitalization is also one of the causes of impoverishment in India. Every year in India, about 2-3 percent of populations are being pushed into below poverty line because of out-of-pocket expenditure on hospitalization (Garg and Karan, 2009). Presently, around two-thirds of the total health expenditure in India is out of pocket payments (NHA, 2013-14). Therefore, the study on hospitalization and its related aspects is of paramount importance from the point of view of formulation of health policies and programs in the country.

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In India, over the years the rate of hospitalization as well as the cost of hospitalization is increasing. During 1995-96 the rate of hospitalization at the national level was 15 per thousand of population and it rose to 25 in 2004 and further to 46 in 2014. The cost of hospitalization in rural and urban India was Rs.6,225 and Rs 9,367 respectively in 2004 and after a decade, in 2014 the corresponding figures were Rs.16,956 and Rs. 26,455, with an all India average of Rs.20,288. In this backdrop this paper aims to study the latest estimates on the cost of hospitalization in India and among the sub-groups of population by using the unit level data of the NSS 71st round survey conducted in 2014. It also tries to address the objective of India's National Health Policy, 2017 of progressively achieving universal health coverage by achieving a significant reduction in out of pocket expenditure due to health care costs

and achieving reduction in proportion of households experiencing catastrophic health expenditures and consequent impoverishment.

REVIEW OF LITERATURE

There is a huge body of evidence on the impoverishing effect of out of pocket expenditure on health in India and abroad. There are various modalities (types of healthcare treatment sought) through which this expenditure takes place namely, cost of consultation, cost of medicine, cost of in-facility stay, cost of investigations, cost of transport of patient and care takers, cost of lost work days of patient and care takers, food and stay charges of care takers etc. Various studies have shown how much these modalities contribute to the total expenditure.

The utilization of outpatient healthcare services including hospitalization has been ever increasing both in global and Indian context (Jayakarishnan *et al*., 2016 and Mohanty.et. al, 2013). Inpatient hospital services in the USA accounted for a small share of health care utilization (7 percent) but constituted the largest share of total health care spending in the United States (29 percent in 2009) (Kashihara *et al*., 2009 Out of the 39 low income countries across the globe included in 2010 WHO study (10), utilization of public facilities was most dominant for inpatient care with exception in India and Pakistan. 'WHO-CHOICE estimates for service delivery' also reflects that majority of unit cost on healthcare service delivery is spend on in-patient care in India. It estimated the public facility in-patient cost at Rs. 368.4, Rs. 384.3, Rs. 496.9 at primary, secondary and teaching hospital level, respectively, for year 2008. This cost represents only the 'hotel' component excluding drugs and diagnostics. Whereas the urban outpatient cost (excluding drugs and diagnostics) at public facilities was Rs. 77.6, Rs. 95.8, Rs. 109.2 and Rs. 113.8 for health center (no beds), health center (with beds), Primary-level and secondary-level hospitals, respectively, for year 2008 (WHO, 2011). Studies from India in this context based on NSSO have reflected the same. Out of pocket expenditure has increased by more than 100% and in-patient care expenditure increased by almost 300% during last ten years (Bustreo et al., 2003).

Since the last few decades, the size and role of private sector in health has been ever increasing, especially in terms of hospitalization in critical cases for stabilization, investigation and surgical interventions (Chatterjee, S., *et al.,*2013*)*. Despite higher cost of treatment in private sector, there is agrowing evidence showing that governments cannot afford to ignore these non-state actors in healthcare landscape (C. Holendro, 2009). According to a study a nationally representative survey on health care conducted by the National Sample Survey Organization (NSSO, 2006) in its 60th round in 2004, more than 58 percent of the patients have utilized private health-care facilities in India[7]. The mean cost of treatment in private hospitals is Rs. 5,019 after adjusting for confounders compared to Rs. 1,307 for public hospitals[8]. India spent 4.68 % of GDP on health in the year 2015. Of this total healthcare expenditure on health in India, majority was OOPE, in which, modality of 'Medicine' accounted for majority of the expenditure. The issue gains more gravity once we look into the decreasing public expenditure on health in terms of percentage of GDP (World Bank, 2013). By 2014, the total public health expenditure on health in India (% GDP) was just 1.41 % which is very low in contrast to global average (% GDP) of 5.99 %. The trend has not changed since last decade.

A study based on analysis of NSSO Survey conducted during 2004 and 2014 in India, revealed that Proportion of Ailing Persons (PAP) was 104 per 1000 population with 13 point increase during the gap of 10 years. The utilization of public services for out-patient care was 25 percent and inpatient care was 40 percent. Only 12% urban and 13% rural population received any protection coverage through any of the Public Funded Health Insurance (PFHI) schemes like RSBY etc. (Jayakrishnan *et al*., 2016). Average per capita treatment expenditure as OOP for outpatient care per episode was reported to be Rs. 574 (Rural - 509, Urban - 639) and the average direct expenditure for inpatient care was Rs 18268. The average expenditure at a private hospital was Rs. 25,850 which was four times higher than that at public hospitals (Rs. 6,120) indicating cost escalation in private sectors There is huge variation in the expenditure for inpatient treatment ranging from Rs. 12,000 to Rs. 45,000 across quintiles (Jayakrishnan *et al*., 2016). With increasing awareness towards health and improving socioeconomic status, the healthcare seeking behavior of population is bound to change and this reflects in the pattern of expenditure on various modalities of healthcare including hospitalization, especially keeping in view the dream of 'right to health' for all citizens (Jayakrishnan T. *et al*., 2016). In light of this view, this paper attempts to investigate the expenditure on hospitalization in India and changing trend using NSSO unit level data and findings from previous rounds.

Few studies have focused on the issue at country level in India (Jayakrishnan *et al*., 2016). The increase in cost of healthcare utilization has outpaced the average rate of inflation in rural and urban India (Koechlin *et al*. 2014). Keeping this in view of the study bears important connotation to efficacy of Public funded health insurance schemes in India and health insurance schemes in general. This study also provides insight into differentials in cost of hospitalization across various background characteristics of the patient such as place of residence (rural/urban), MPCE quintiles etc. and other parameters such as across major states, causes of hospitalization, provider (public/private) etc.

STUDY OBJECTIVES

The objectives of the study are to examine the inter-state disparity in the cost of hospitalization, to study the gross and net differentials in the cost of hospitalization and to examine the source of finance for hospitalization in India.

MATERIALS AND METHODS

The paper is based on the unit level data of National Sample Survey 71st round survey on 'social consumption on health' conducted in the year 2014. In this survey information were collected from sample households on demographic particulars, prevalence of morbidity and hospitalization, cost of inpatient and out-patient care, utilization of maternal healthcare services and the study of health status of aged persons. The survey was based on sample size of 36,480 households from rural areas and 29,452 households from urban areas across the country. Here hospitalization is defined as admission as an in-patient to a medical institution for treatment of some ailment or injury or for childbirth. The rate of hospitalization has been calculated per thousand of population with a reference period of last 365 days. In the survey the data on the cost of hospitalization was collected separately for each case of hospitalization.

For the sake of analysis the total cost of hospitalization has been divided into two groups of 'medical expenditure' and 'non-medical expenditure'. Medical expenditure includes doctor's/surgeon's fee, fees of other hospital staffs, cost of medicines, cost of diagnostic tests, bed charges, and other medical expenses which includes attendant charges, charges for physiotherapy, personal medical appliances, blood, oxygen and, etc. The non-medical expenditure includes transport cost for patient and for other family members, cost for food, expenditure on escort and lodging during the reference period.

The statistical techniques used in the analysis were bi-variate analysis and multi-variate analysis. The bi-variate technique of compare means method was used to examine the gross differentials in the cost of hospitalization among sub-groups of population. The Multiple Classification Analysis (MCA) technique has been used to estimate the net differentials in the cost of hospitalization after controlling the effects of other factors. MCA combines both the features of analysis of variance and multiple regression analysis. This technique is useful to assess the effects of a number of categorized explanatory variables on a numeric dependent variable. The independent variables for MCA analysis were place of residence, region, place of hospitalization, religion, social group, MPCE quintile, education, gender and age group and the dependent variable is 'total cost of hospitalization'. Here the major analysis of the cost of hospitalization is based on all cases of hospitalization including childbirth cases. Along with that the cost of hospitalization has been calculated from all cases of hospitalization excluding child birth to compare the figures of previous NSS rounds. As in the previous NSS reports, the cost of hospitalization has been calculated from all cases of hospitalization excluding child birth cases.

RESULTS

Hospitalization in India: Levels and Trends:

Table 1 shows the rate of hospitalization in India and its rural-urban setup over last three NSS rounds. In 52nd round (1995-96) the rate of hospitalization at the national level was just 15 per thousand of population and it increased to 25 in 60th round (Jan-June, 2004) and further 46 in 71st round (Jan-June, 2014). Therefore, there is an increasing trend in the rate of hospitalization over the last three NSS rounds as visible in figure-1. During the three NSS rounds, the rate of hospitalization was higher in urban areas compared to rural areas, but the difference has been narrowed down in 71st round. From 60th round (2004) to 71st round (2014), there is an increase of 21 percentage points in the rate of hospitalization compared to 10 percentage points from 52nd round (1995-96) to 60th round (2004).

Table 1. Rate of hospitalization over last three NSS rounds (52nd, 60th & 71st), India

NSS rounds	Rural	Urban	Total
52nd round (1995-96)	13	20	15
60th round (Jan-June, 2004)	23	31	25
71st round (Jan-June, 2014)	44	49	46

Source: NSS rounds, 1995-96, 2004 & 2014, Ministry of Statistics and Program Implementation, GOI

Inter-state and regional variations in the rate of hospitalization

The rate of hospitalization also varies among states and union territories and among regions of India.

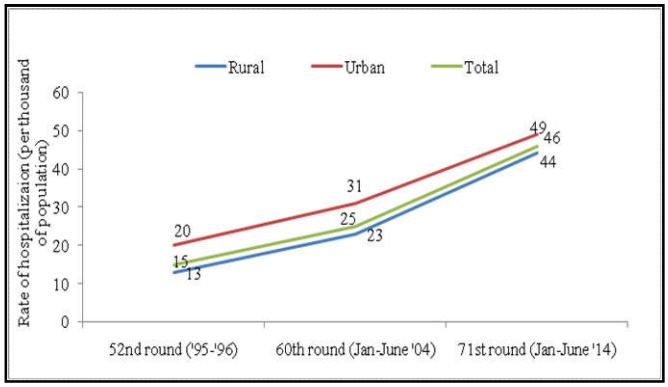


Figure 1. Trends in the rate of hospitalization over the last three NSS round

A comparison has been made on the basis of 71st round estimates separately among bigger states, among smaller states and among union territories and regions depicted in table-2 and table-3 respectively. Among the major states of India, the highest rate of hospitalization was observed in Kerala (109) followed by Tamil Nadu and Andhra Pradesh (58), Himachal Pradesh (55), West Bengal (50) and Gujarat (50). In contrast, the lowest rate of hospitalization was observed in Jharkhand (32) and succeeded by Chhattisgarh (33), Bihar (34) and Uttar Pradesh (35). Similar variations are also observed between rural and urban areas in many states. In majority of states the rate of hospitalization in rural areas was comparatively lower than the rate of hospitalization in urban areas. Similar variations are also observed among smaller states and union territories.

Table 2. Rate of hospitalization across states and union territories, India, 2014

Major States	Rural	Urban	Total
Delhi	15	36	35
J&K	39	37	39
Punjab	41	40	41
Haryana	42	50	45
Bihar	34	33	34
Jharkhand	32	35	32
Uttar Pradesh	34	40	35
Madhya Pradesh	40	44	41
Chhattisgarh	31	42	33
Assam	28	36	29
west Bengal	50	51	50
Orissa	45	51	46
Rajasthan	47	43	46
Gujarat	48	49	48
Maharashtra	53	47	50
Andhra Pradesh	59	55	58
Karnataka	52	49	51
Kerala	117	99	109
Tamil Nadu	57	59	58
Telangana	48	49	48
Himachal Pradesh	57	33	55
Uttarakhand	30	37	31
Sikkim	26	33	27
Arunachal Pradesh	34	41	35
Nagaland	17	22	19
Manipur	43	35	40
Mizoram	36	41	38
Tripura	55	57	55
Meghalaya	27	35	29
Goa	44	40	42
Chandigarh	28	35	35
Daman & Diu	55	53	53
Dadra Nagar Haveli	49	54	51
Lakshadweep	47	76	71
Puducherry	58	63	61
A&N	52	61	55
India	44	49	46

Variations are also observed among the six broad regions of India. The highest rate of hospitalization was observed in south region (62) followed by west (50) and north (43). The lowest rate was observed in north-east region (32) succeeded by central region (37) and east (41).

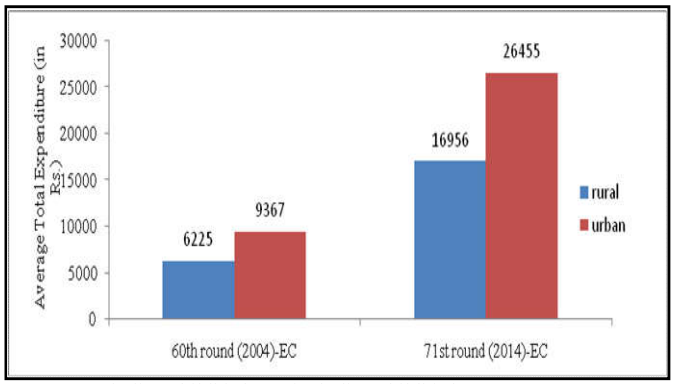
Cost of hospitalization in India and across states

Cost of hospitalization is the expenses incurred for the treatment of hospitalized cases during stay at hospital. In this section the average total expenditure per hospitalization has been estimated at all India level and across states. In 2004, the average total expenditure per hospitalization in rural and urban areas was Rs 6,225 and Rs 9,367 respectively, when child birth cases were excluded from the analysis (Report No.507; NSS 60th round, 2004). After a decade, in 2014 the corresponding figures were Rs 16,956 and Rs 26,455 as shown in figure-2. Similarly, in the current round a comparison has been made in the average total cost when child birth cases have been excluded and included in the analysis. At all India level, the average total expenditure per hospitalization was Rs 20,288 when child birth cases have been excluded from the analysis. When the childbirth cases were included in the analysis, the all India average total expenditure per hospitalization was Rs 17,074 (figure-3). Among the major states of India, the cost of hospitalization was highest in Delhi (Rs 31,493) followed by Punjab (Rs 26,148), Maharashtra (Rs 22,491), Haryana (Rs 22,136) and Telangana (Rs 20,864). And the lowest average expenditure was observed in Jharkhand (Rs 9,443), succeeded by J&K (Rs 10,117), Assam (Rs 11,411), Bihar (Rs 11,917), Rajasthan (Rs 11,938) and Odisha (Rs12,083). Among the smaller states the highest average total expenditure was observed in Himachal Pradesh (Rs 27,660) and Uttarakhand (Rs 27,456) and lowest in Goa (Rs 9,269) and Meghalaya (Rs 10,213). Similarly, among union territories the highest average total expenditure was in Chandigarh (Rs 9,113) and lowest in A&N (Rs 6,213).

Table 3. Regional variations in the rate of hospitalization, NSS 71st round survey India, 2014

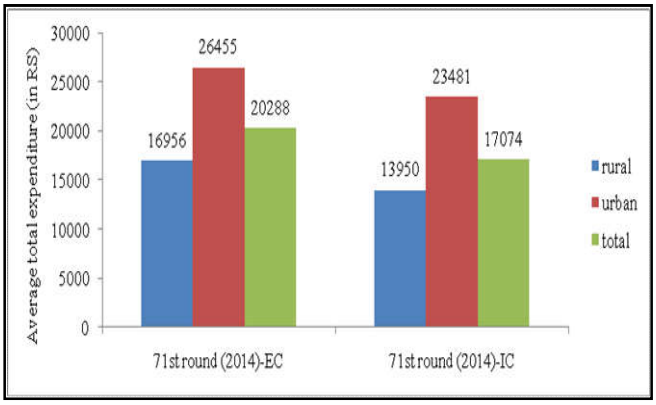
Region	Rural	Urban	Total
North	44	41	43
Central	35	41	37
East	40	45	41
Northeast	31	38	32
West	51	48	50
South	63	61	62
India	44	49	46

Source: estimated from unit level data, NSS 71st round survey, 2014



Note:EC-excluding childbirth, IC-including childbirth

Figure 2. Average total expenditure per hospitalization in India



Note: EC-excluding childbirth, IC-including childbirth

Figure 3. Average total expenditure per hospitalization in 71st round survey

Table 4. Cost of hospitalization across states and union territories, India, 2014

States & UTs	Average Total Cost per Hospitalization per Case (in Rs)
Delhi	31,493
Punjab	26,148
Maharashtra	22,491
Haryana	22,136
Telangana	20,864
Tamil Nadu	19,266
Andhra Pradesh	18,898
Uttar Pradesh	18,499
Kerala	18,312
Karnataka	17,029
Gujarat	15,321
west Bengal	15,136
Madhya Pradesh	13,806
Chhattisgarh	13,682
Orissa	12,083
Rajasthan	11,938
Bihar	11,917
Assam	11,411
J&K	10,117
Jharkhand	9,443
Himachal Pradesh	27,660
Uttarakhand	27,456
Sikkim	19,780
Arunachal Pradesh	13,612
Nagaland	12,471
Manipur	11,459
Mizoram	11,350
Tripura	11,154
Meghalaya	10,213
Goa	9,269
Chandigarh	9,113
Daman & Diu	8,405
Dadra Nagar Haveli	8,224
Lakshadweep	6,533
Puducherry	6,314
A&N	6,213
India	17,074

Source: estimated from unit level data, NSS 71st round survey, 2014

Gross differentials in average total cost of hospitalization

The variation in the cost of hospitalization according to background characteristics of patients is shown in table-5. Here the cost of hospitalization is shown in terms of average medical expenditure, average non-medical expenditure and average total expenditure. From the analysis it was observed that at India level the total average expenditure per hospitalization was Rs.17,074 with considerable variations between rural (Rs. 13,950) and urban areas (Rs 23,481).

Table 5. Cost of hospitalization by background characteristics of patients, India, 2014

Background Characteristics	Average expenditure per hospitalization case		
	Medical Expenditure	Non-medical Expenditure	Total Expenditure
Place of Residence			
Rural	12,138	1,812	13,950
Urban	21,609	1,872	23,481
Place of Hospitalization			
Public	4,417	1,403	5,820
Private	24,245	2,189	26,434
Gender			
Male	21,225	2,230	23,455
Female	11,808	1,604	13,412
Religion			
Hindu	15,441	1,842	17,283
Muslim	12,561	1,724	14,285
Christian	13,617	2,020	15,637
Others	25,245	1,879	27,124
Education			
Non literate	10,291	1,586	11,877
Primary	12,550	1,661	14,211
Middle	12,951	1,762	14,713
Secondary	17,274	1,944	19,218
Higher Secondary	24,530	2,180	26,710
Social Group			
ST	8,497	1,468	9,965
SC	10,138	1,591	11,729
OBC	14,842	1,872	16,714
Others	20,944	2,023	22,967
MPCE quintile			
1st Quintile	8,128	1,435	9,563
2nd Quintile	8,802	1,545	10,347
3rd Quintile	12,037	1,705	13,742
4th Quintile	15,234	1,975	17,209
5th Quintile	32,039	2,511	34,550
Age group (years)			
0-14	10,977	1,599	12,576
15-29	9,637	1,519	11,156
30-44	16,117	1,859	17,976
45-59	20,153	2,253	22,406
60+	23,908	2,198	26,106
Region			
North	15,455	2,071	17,526
Central	15,242	1,636	16,878
East	11,255	1,835	13,090
North-East	8,487	1,913	10,400
West	18,618	1,513	20,131
South	16,598	2,005	18,603
Marital status			
Never married	12,946	1,792	14,738
Currently married	14,529	1,767	16,296
Widowed/divorced/separated	14,484	1,662	16,146
Total	15,242	1,832	17,074

Source: estimated from unit level data, NSS 71st round survey, 2014

Similarly, the substantial part of the total cost of hospitalization was medical expenditure (Rs. 15,242) and minor part was non-medical expenditure (Rs 1,832). Of the six broad regions of India, the average total expenditure was highest in western region (Rs 20,131) and lowest in north-east region (Rs 10,400). With respect to place of hospitalization, the total average cost in private hospital (Rs 26,434) was nearly four times that of the cost in public hospital (Rs. 5,820). With regards to gender, the cost of hospitalization among males (Rs 23,455) was relatively higher than females (Rs 13,412). Among religious group the cost of hospitalization was highest among other community (Rs 27,124) and lowest among Muslims (Rs.14,284) and Christians (Rs.15,637). As the level of education and MPCE level increases the cost of hospitalization also increases. The total average cost of hospitalization among non-literate patient was the lowest at Rs 11,877 and it rose to maximum of Rs 26,710 among patients having at least higher secondary education. The cost of hospitalization was minimum in the first MPCE quintile (Rs 9,563) and maximum in the fifth MPCE quintile (Rs 34,550). Similarly, the cost of hospitalization was higher among older age group patients compared to younger age group patients. In 0-14 age group the cost of hospitalization was Rs 12,576 and in 60 and above age group it was Rs 26,106. Among social group the cost of hospitalization was highest in other caste (Rs.22,967) and lowest in schedule tribe (Rs 9,965). With respect to marital status, ever-married patients having higher cost of hospitalization compared to never-married patients.

Net differentials in average total cost of hospitalization

While calculating the gross differentials in the cost of hospitalization the effects of other factors have not been controlled. But in the study of net differentials the effects of other factors have been controlled. Table 6 shows the net differentials in the cost of hospitalization among various socio-economic categories. It is clear from the table that net differentials among categories have been narrowed down compared to gross differentials. The adjusted average total expenditure per hospitalization in rural areas was Rs 15,678

Table 6. Net differentials in mean total expenditure (Rs) per hospitalization, India, 2014

Background Characteristics	Category	Predicted Mean (Adjusted for Factors)	Deviation (Adjusted for Factors)	Beta (Adjusted for Factors)
Place of Residence	Rural	15678	-310	0.011***
	Urban	16629	640	
Region	North	16487	497	0.052***
	Central	18534	2544	
	East	17955	1965	
	North-East	19500	3510	
	West	14215	-1774	
	South	13518	-2471	
Place of Hospitalization	Public	7365	-8624	0.189***
	Private	23156	7166	
Social Group	ST	16161	171	0.033***
	SC	14326	-1663	
	OBC	15362	-626	
	Others	18020	2030	
Religion	Hindu	16128	138	0.034***
	Muslim	15555	-434	
	Christian	10003	-5986	
	Others	21368	5378	
Level of Education	Non-literate	13235	-2753	0.066***
	Primary	15466	-523	
	Middle	15982	-7	
	Secondary	17835	1846	
	Higher Secondary	21473	5483	
MPCE Quintile	1st Quintile	13334	-2654	0.116***
	2nd Quintile	12377	-3612	
	3rd Quintile	13992	-1996	
	4th Quintile	14796	-1192	
	5th Quintile	25523	9533	
Gender	Male	19352	3362	0.06***
	Female	14149	-1840	
Age Group (years)	0-14	11720	-4269	0.08***
	15-29	13112	-2877	
	30-44	17415	1425	
	45-59	18585	2595	
	60+	21387	5398	
	Grand Mean	15990		

*** 1% level of significance

Table 7. Source of finance for hospitalization in India, 2014

Major source	Cases of hospitalization (%)		
	Rural	Urban	Total
1.household income/ savings	72.2	77.2	73.9
2.borrowings	22.1	17.1	20.4
3.sale of physical assets	0.6	0.3	0.5
4.contribution from friends/relatives	4.4	4.3	4.3
5. others	0.8	1.1	0.9
Total	100	100	100
2nd most important source	Cases of hospitalization (%)		
	Rural	Urban	Total
1. household income/ savings	39.4	38.9	39.2
2.borrowings	34.5	31.7	33.7
3.sale of physical assets	1.2	0.8	1.1
4.contribution from friends/relatives	22.4	24.7	23.1
5. others	2.6	3.9	2.9
Total	100	100	100

and in urban areas, it was Rs 16,629. With respect to place of hospitalization the gap in average total cost of hospitalization between public and private hospital still remained high. Among region the adjusted cost of hospitalization was the maximum in north-east region (Rs 19,500) and was the minimum in south region (Rs 13,518). Whereas, the un-adjusted cost of hospitalization was the maximum in west region and minimum in north-east region. Among the five age groups, the mean total expenditure was lowest in 0-14 age groups (Rs 11,720) and highest in 60 and above age group (Rs 21,387). Of the social groups, the mean total expenditure was lowest in SC population compared to ST, OBC and others. Among religious groups, persons with christian faith have the lowest mean total expenditure (Rs 10,003) compared to the highest among other community (Rs 21,368).

Financing the cost of hospitalization

In the previous section the gross and net differentials in the cost of hospitalization has been examined. In this section how the cost of hospitalization is financed is the subject matter of discussion. To study the source of finance for hospitalization, respondents were asked to name two major sources of finance for each case of hospitalization.

These two sources were known as the 'major source of finance' and '2nd most important source of finance'. Under both the sources of finance there were five alternative sources. They were: household income/saving; borrowings; sale of physical assets; contribution from friends/relatives and others. In table-7, under the first major source of finance, at all India level, for nearly 74 percent cases of hospitalization the source of finance was household income and saving, followed by borrowing (20.4%), contribution from friends and relatives (4.3%) and sale of physical assets (0.5%). Marked differences were observed among rural and urban areas regarding the source of finance as borrowing. In rural India more households were depending on borrowing as source of finance for hospitalization compared to their urban counter-part and the gap between rural and urban area is clearly visible. Similarly, the source of finance as income and saving was comparatively larger in urban areas than in rural areas. Under the second most important source of finance, at all india level the three important sources were household income/saving (39.2%), borrowings (33.7%) and contribution from friends and relatives (23.1%), with marginal variations among rural and urban areas.

DISCUSSION

The main aim of this paper was to highlight the latest estimates of cost of hospitalization in India, across states and sub-groups of population using the latest unit level data of NSS 71st round survey (2014). Before discussing about the cost of hospitalization let us look at the prevalence of hospitalization in India. It is evident from the last three NSS rounds that there is an increasing trend in the rate of hospitalization from 15 per thousand of population in 52nd round (1995-96) to 46 per thousand of population in 71st round (2014). At all India level after childbirth the leading causes of hospitalization were infection, injuries, gastro-intestinal and cardio-vascular. So far as the cost of hospitalization is concerned, it was observed that in 2014 the average total cost per hospitalization at the national level was Rs. 17,074 (at current prices) with substantial rural (Rs.13,950) urban (Rs. 23,481) variations (when childbirth included in analysis). When childbirth cases were excluded from analysis, the average total expenditure rises to Rs. 20,288 at all India level and Rs.16,956 in rural areas and Rs. 26,455 in urban areas. In 2004, the same in rural areas was Rs.6,225 and in urban areas was Rs. 9,367 (Report no.507/60/25.0). So, there is an annual increment of 17.2 percent in rural areas and 18.2 percent in urban areas during 2004 to 2014. In another study the inflation adjusted average direct expenditure for in-patient care had increased 50 percent during 2004 to 2014 (Jayakrishnan T. *et al*., 2016). Variations were also observed among states and union territories and different sub groups of population. The net differentials among various sub groups of population were relatively lower than the gross differentials. The gross and net average total cost of hospitalization in private facilities was nearly 4.5 times and 3 times that of public facilities, respectively. The average medical cost for the treatment of obstetric and neonatal ailments was found to be minimal in public health facilities (Rs 2,651) compared to much higher in private facilities (Rs 21,626) (NSS report 71st round, 2014). It shows how the treatment is costly in private hospitals over public hospitals. In spite of the expensiveness in private hospital, people still are relaying much on private hospital. In 2014, as many as 58.1 percent hospitalized cases from rural areas and 68.0 percent from urban areas were treated in private facilities (NSS report 71st round, 2014).

At the time of independence the share of public health facilities was 92 percent in total in-patient care (Radan, 2005; cited in Klein Thilo, 2011). The reasons of this inclination towards private health care were weak public health care delivery system along with poor quality of care offered by those public facilities and other related issues (RAO P.H An analysis from the same round of data shows that the reasons of ailments not treated from government facilities were quality issues (42.7%), long waiting time (27.3%), medical facility too far (11.6%) and required specific services not available (10.3%). In India, currently two-thirds of the total health expenditure was financed by out-of-pocket spending (NHA, 2013-14). Another recent survey shows that "nearly 65 percent of households in India paid their medical expenses from out-of-pocket and they will continue to do so in future also". The report also says that "53 percent Indians are not prepared for any large unexpected medical expenses" (Signa 360^0 well-being survey, 2017). In 2014, the first major sources of finance for household out-of-pocket spending for hospitalization were household income and saving (74%), borrowing (20.4%) and contribution from friends and relatives (4.3%). Of the total cases of hospitalization, only in 2.9 percent cases the cost of hospitalization has been reimbursed partially or fully with fairly variation between rural (1.2%) and urban areas (6.2%) (NSS report 71st round). The low public spending on healthcare is one of the reasons of this high out-of-pocket spending. The current public spending on health as percentage of GDP is 1.15 percent which is the lowest among BRICS nations (NHA, 2013-14). The 2017 National Health Policy says that the public expenditure on health should be increased to 2.5% of GDP from the existing 1.15 percent by 2025, so as to provide basic healthcare facilities to all. But in the present scenario it is quite difficult to achieve the target without increasing revenue base as it is rightly mentioned by Bibek Debroy, member of NITI Aayog (Health in India: where the money comes from and where it goes? The Hindu, August, 2016).

CONCLUSIONS

In the current scenario it is not easy to increase the budgetary spending on healthcare. Therefore in this situation health insurance has recently emerged as an alternative tool to finance out-of-pocket spending on health care in India. The National Health Policy, 2017 has also aimed to reduce the proportion of households facing catastrophic health expenditure from the current levels by 25 percent by 2025. In order to increase the coverage of health insurance in the country the central government as well as many state governments have implemented many public funded health insurance schemes (RSBY, Rajiv Arogyasri, Yeshaswini, Vajpayee Aroyasri, Chief Minister's Comprehensive Health insurance Scheme, Mukhyamantri Amrutam and BKKY) for last 7-8 years. But in spite of that, the overall health insurance coverage was just 15.2 percent in India in 2014. In states like Andhra Pradesh and Telangana the coverage of health insurance was above 60 percent, nearly 40 percent in Kerala and Chhattisgarh and above 20 percent in Rajasthan, Tamil Nadu and Odisha. The low coverage states were mostly the EAG states such as Assam, Madhya Pradesh, Jharkahand, Uttar Pradesh, Bihar and few other states such as Punjab, Haryana and Maharashtra (calculated from NSS 71st round data). So there is an urgent need to increase the coverage of health insurance especially for BPL population in the country. Similarly there is a need to upgrade the public health infrastructure in the country by

allocating more funds for capital spending so that public health facilities will attract and retain its previous position in the health sector. As the cost of treatment in public facilities was much lower than the cost in private facilities, therefore, the increasing use of public hospitals would definitely help in reducing the out of pocket expenditure on health care and ultimately the reduction of poverty which are the two important goals of NHP, 2017. This paper could be helpful for policy makers and health planners to understand the bottlenecks in achieving "the universal health coverage" as envisaged in the Sustainable Development Goals (SDGs) and collectively work towards achieveing these goals as a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity.

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Conflict of interest

Authors declare that there are no conflicts of interest or competing interests in this research paper.

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