Morbidity Pattern, Health Care Utilization and Catastrophic Health Expenditure in India

Archana Satheesh* & Preethi K.**

Abstract

India is the second largest populated country in the world. The life expectancy of India has been increasing over the years. Thus increase in the life expectancy increased the morbidity among the people in India. The health care delivery system of India is characterized by a massive out of pocket expenditure which leads to Catastrophic Health Expenditure (CHE). Catastrophic Health Expenditure which reduces the consumption of other necessities below the required level. The main objective of the study was to find out the pattern of Morbidity and Health Care Utilization in India and find out the prevalence of Catastrophic Health Expenditure in Indian Households and its determinants. The data for the study were taken from the 75th round of National Sample Survey. Both Uni-variate and Bivariate analysis were used for the analysis. Descriptive analysis was performed using contingency tables. Probit Regression Model using Generalized Linear Model is applied to study independent effect of various household predictor variables on the CHE. The results of this study showed that communicable diseases are highly affected to respondents in rural areas than their counterpart in urban areas. Most of the respondents reported that they treated their non-communicable disease in private hospitals than public facility. Households from scheduled castes, particularly poor households, were more likely to incur catastrophic health expenditure than other sections in the society. The presence of children and elderly members increase the probability of catastrophic health expenditure in the households. The higher catastrophic health expenditure calls for the need of

* Project Staff, Department of Demography, University of Kerala, Kariavattom

** Asst. Professor, Department of Demography, University of Kerala, Kariavattom

subsidizing the health care services for the effected sections of society in order to reduce the incidence of catastrophic payments.

Introduction

Health is defined as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (defined in WHO Constitution). Better health is central to human happiness and well-being. It also makes an important contribution to economic progress, as healthy populations live longer, are more productive, and save more. Healthy Citizens are the greatest asset any country can have. India is the second largest populated country in the world. The life expectancy of India has been increasing over the years. Thus increase in the life expectancy increased the morbidity conditions of the people in this highly populated country. The health care delivery system of India is characterized by a massive out of pocket expenditure which leads to Catastrophic Health Expenditure (CHE). Catastrophic Health Expenditure which reduces the consumption of other necessities below the required level.

The morbidity pattern of a population is considered as a proxy measure to understand their health status. Half of all deaths occurring in India are mainly due to the non-communicable diseases like cardiovascular diseases, cancer, diabetes, chronic obstructive disease, mental disorder and injuries. According to the global health observatory report (2012), out of 68 million total deaths globally, an estimated 38.5 million deaths occurred due to NCDs. India is doubly burdened with both communicable as well as non-communicable disease.

Objectives of the Study

The main objective of the study is to find out the pattern of Morbidity and Health Care Utilization in India and to find out the prevalence of Catastrophic Health Expenditure in Indian Households and its determinants

Hypothesis

Households incurring CHE are affected by pattern of illness, insurance coverage by pattern of illness, insurance coverage and socio-economic characteristics.

Methodology

The data for the study was from the 75th round of National Sample Survey. The dependent variable of the study is of dichotomous which coded 1 if affected CHE and 0 otherwise. Both Univariate and Bivariate analysis were used for the analysis. Descriptive analysis was performed using frequency and percentage. Probit Regression Model using Generalized Linear Model is applied to study independent effect of various household predictor variables on the CHE.

Analysis

Out of the Total 555115 participants, 85235 participants have experienced any of the ailments during the period of 365 days (in the 29 states and 7 union territories of India). The participants in the states of UttarPradesh (9.3%), Maharashtra (8.1%)and West Bengal (6.3%) experienced the ailments at higher level. According to Rural Health Statistics data (2015) indicate that shortage of healthcare professionals, increasing cost of healthcare, the mushrooming of private healthcare, a lack of planning, 33percent short of sub-centers and public health centers and 40 percent short of community health centers are some of the reason for the poor healthcare in Uttar Pradesh while comparing with other states in India. Lower cases of ailments were reported in Chandigarh (0.3%), Goa (0.4%) and Sikkim (0.4%).

Table: 1(given below) shows the region wise distribution of the sample population who experienced any of the ailments and hospitalized during the last 365 days. India is divided into six Zones/Regions namely East zone, West zone, North East zone, North zone, Central zone and South zone. All these zones include 29 states and 7 Union territories. Each zone is comprised of certain number of states and union territories. Over the course of 365

days, the highest number participants who were reported to have any type of ailment belonged to the Zone of South India with 23.6 percent, followed by North India with 22.0 percent each. The lowest number of ailments was reported in the Central region with only 7.5 percent. Respondents belonging to the East and West regions, both reported ailments at 17 percent each. Population of North Eastern region reported to have 12.4percent had any type ailment over the last 365 days.

TABLE: 1

Distribution of population who were hospitalized due to any ailment during the period of 365 days by regions.

Regions	Number	Percentage
South	20089	23.6
North	19321	22.0
West	14527	17.0
East	14357	16.8
North East	10535	12.4
Central	6406	7.5
Total	85235	100

TABLE: 2

Distribution of population experienced any ailment during the period of 365 days by broad age group.

Age Group	Number	Percentage
0-14	10208	12.0
15-59	63956	75.0
60+	11071	13.0
Total	85235	100

Table:2 provides the information about age wise classification of sample population who had experienced any ailment during the last one year. The patients belongs to the age group 15-59 years shows the highest rate of hospitalisation due to experiencing any of the ailments followed by the age groups 60+ and 0-14 with 13.0 percent and 12.0 percent respectively.

TABLE: 3

Distribution of population by patients by type of facility opted during last 365 days.

Type of Hospital	Number	Percentage
Govt: Hospital	44801	52.6
Private Hospital	40434	47.4
Total	85235	100

Table 3 shows about 53 percent of the respondents were adhering treatment from government hospitals particularly more than half of the sample population. The remaining patients are taking treatment from private hospitals 43 about 40434 persons (47.4 percent).

Table 4 provides the information about the patients who experienced any of the ailments during the past 15 days on the basis of gender wise classification. It shows that females are more vulnerable group of patients than males. More than half of female patients are experiencing any of the ailments during the last 15 days it accounts for 52.5 percent. About 47.5 percent of males experienced any of the ailments.

TABLE 4

Percentage of population treated for any ailment during last 15 days according to NSS 2018.

Persons	Number	Percentage
Male	18948	47.5
Female	20934	52.5
Total	39882	100

TABLE 5

Distribution of population by number of morbidity experiencing per person during last 15 days

Disease	Population		
	Male	Female	Total
Any	18631	20372	39003
More Than One	310	557	867
Injury	7	5	12
Total	18948	20934	39882

Table 5 represents the morbidity pattern prevailing in the patients in India. It shows that during the last 15 days individuals reported with any of the ailments and more than one ailment are higher in number for females, about 20372 female patients are experiencing any ailment and 557 are experiencing more than one ailment. But the morbidity pattern is quite favorable for the male patients any of the ailments are experienced by only 18631 and more than one ailment by 310 male patients only. Among persons experiencing any injury, males are showing dominance (out of total 12 injury persons 7 will be men). For other morbidity cases females are experiencing higher burden of diseases than men.

TABLE 6

Average total expenditure (Rs.) for non-hospitalized treatment per ailing person during a period of 15 days

Expenditure	Rupees
Medical Expenditure	842.88
Other Expenditure	204.88
Total Expenditure	1047.76

Table 6 shows that for a period of 15 days average expenditure of a patient for medical and non-medical expenditure are 842.88 and 204.88 rupees respectively. An average amount of 1047.76 rupees is required for a patient for attaining his/her medical and non-medical expenditure.

TABLE 7

Association of background characteristics of Indian households with incurred CHE

Characteristics	Categories	Percentage of Household who Experiencing Che	p-Value	χ^2 Value
Place of Residence	Rural	38.2	0.000	19.202***
	Urban	39.7		
Religion	Hindu	39.9	0.000	206.242***
	Islam	36.5		
	Christian	30.6		
	Others	39.0		
Social Group	SC/ST	31.0	0.000	896.396***
	OBC	41.8		
	Others	42.6		
Household Size	1-3	34.2	0.000	472.483***
	4-6	38.4		
	7-9	43.5		
	10+	49.9		
Household Composition	With Children but no Elderly	31.5	0.000	1610.143***
	Without Children and elderly	38.3		
	With Children and Elderly	47.5		
	Elderly only	41.7		
	No children But Elderly	49.7		

Insurance Coverage	Yes	44.0	0.000	77.053***
	No	38.9		
MPCE	First	42.0	0.000	114.041***
	Second	37.9		
	Third	37.8		
	Fourth	37.7		

Table 7 explains the association of household characteristics of the households who were experiencing Catastrophic Health Expenditure (CHE). The results showed a significant association of almost all characteristics with the CHE. Household composition, Social group and household size have significantly more association with the household experiencing CHE.

TABLE 8

Probit Model for occurrence of Catastrophic Health Expenditure in Indian

Determinents	Co-efficient	Standard Error
Social group(SC/ST)	0.287***	0.0102
Household Composition ref: (others)		
Household with elderly	0.002	0.0309
Household with child	0.299***	0.0096
Household Size(1-5 members)	0.224***	0.0101
Insurance Coverage (Have insurance coverage)	0.004	0.0095
Any Chronic Ailment(Suffering)	-0.068**	0.0263
Place of Residence(Rural)	0.124***	0.0098
Toilet Facility(Have toilet Facility)	0.039***	0.0137
Drinking water Source (Protected source)	0.106***	0.0329

Gender	-0.013	0.009
Wealth Index(ref: Richest)		
Poorest	-0.043***	0.0155
Poor	0.024	0.0155
Middle class	0.038***	0.0145
Rich	0.044***	0.0143

Table 8 presents the associative factors of CHE among Indian households. The results of the probit model are interpreted based on the direction of the effects of the coefficient estimates in the above table. These estimates capture the values that maximize the log likelihood function of CHE. We find support for the hypothesis that the risk of incurring CHE decreases with higher income ($p < 0.001$), and having access to health financing or insurance coverage 50 significantly reduces the risk of CHE ($p < 0.05$).Compared to richest household Households, poverty has negative relation with CHE. Children less than five years, elderly and household size more than five members have the risk to incur CHE in the household. As size of the family increases, the probability to get morbid people also increases which means that the result is supporting our hypothesis. The result also revealed that the urban households have more likelihood of incurring CHE than their counterparts. Toilet facility and drinking water facility are included as the environmental variables which can have significantly higher chance to spread diseases from the coefficients it is evident that both the factors crude significantly positive relation with the status of CHE. Those households have no toilet facility and protected water facility is more likely to incur CHE. Along with economic factors, social factors play an important role in determining whether household will experience financial catastrophe due to illness. Moreover, households from socially deprived classes (SC, ST or OBC) are more likely to spend catastrophically on health care in India. As expected, household size, and number of children in house increase the probability of catastrophic health spending. On the contrary, for households

with elderly, our results show that probability of catastrophic expenditure does not increase.

Conclusion

In this study, an attempt has been made to find out the prevalence of catastrophic health expenditure in India and its predictors. We considered catastrophic health expenditure as that health expenditure which may reduce the consumption of other necessities below the required level. Next, we examine the determinants of catastrophic health expenditure in India. The results of this study show that some sections of society are vulnerable in the case of catastrophic health expenditure. Households from scheduled castes, particularly poor households, are more likely to incur catastrophic health expenditure than others. Moreover, household composition matters in this regard. Presence of children and elderly members increase the probability of catastrophic health expenditure. From these results we can conclude that improving social status, coverage of insurance, improved toilet facility and protected water facility can minimize the impact of CHE incurred by Indian households. These results have useful policy implications, in terms of providing financial subsidy for health care to socially backward households, children and elderly. This finding suggests that there is need to subsidize health care services for these sections of society in order to reduce the incidence of catastrophic payment.