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KERALA: AN ECONOMIC ANALYSIS” THESIS RESEARCH AND
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CHAPTER 7

HOUSEHOLD HEALTH EXPENDITURE IN KERALA: A SURVEY BASED ANALYSIS

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7.1. Introduction

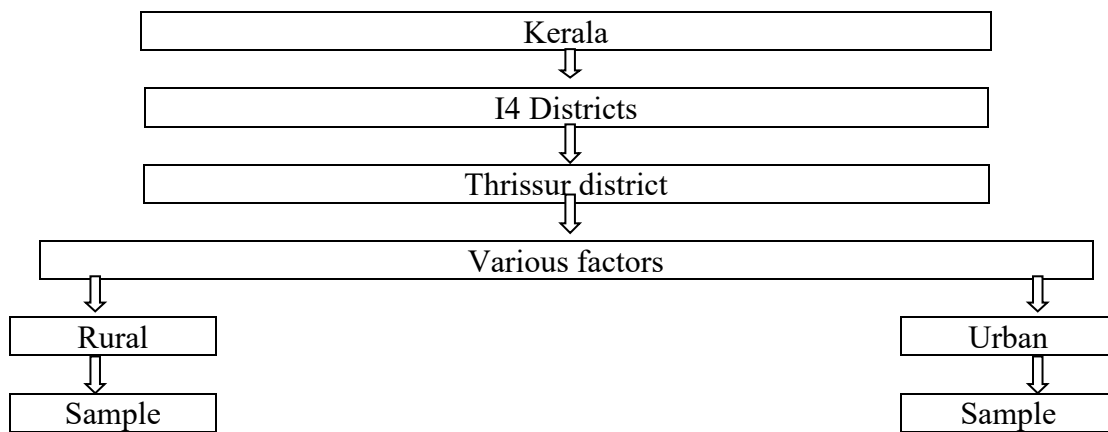
Efficient healthcare system improves quality of life, well-being of people and reduce burden of both communicable and non-communicable diseases. This would increase productivity and growth of the country. Higher income permits individuals to afford better nutrition and access to better healthcare. Investment in health would affect not only macroeconomic level but also individual and household level. The financial impact of ill-health would deepen poverty and mount the number of people living below the poverty line. The most significant feature of ill-health is that its impact is seems to persist across generations. The enormity of household expenditure on health is high in Kerala, which is a topmost state in terms of health indicators. The Bhore Committee Report of 1946 emphasized the objective of enhancing financial access of healthcare and reducing inequality in healthcare. There exists an inter-state and intra-state variation in health status. Moreover, there are inequalities among different categories of social groups with respect to income, gender and health status. The main drivers of cost escalation in the healthcare system consist of human resources for health, access to essential drugs and medicine and access and availability of appropriate technology.

7.2. Sampling Framework

Primary data have been collected for the period from July 2018 to June 2019 by employing a pre-tested interview schedule. A multi-stage random sampling

method has been used for collecting primary data. In order to examine the determinants of household health expenditure in Kerala, sample households are selected from one district. Thrissur district is selected for the analysis of household health expenditure in Kerala. The population is the households in Kerala. The sampling and analytical framework of the present study is presented in Figures 7.1 & 7.2.

Figure 7.1
Sampling Framework



Source: Prepared by the investigator based on Census of India, 2011

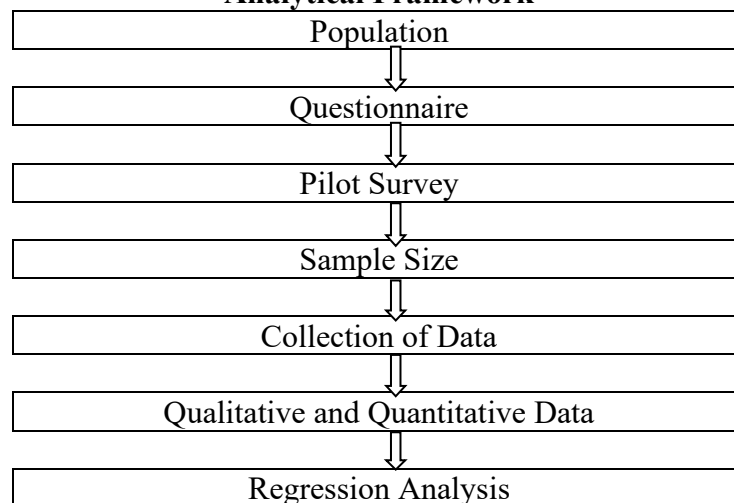
The rationale for selecting Thrissur district in Kerala for primary survey is categorized into the following domains:-

- (1) **Geography:** Among North, Central and South Kerala Coast, Thrissur district falls in the Central Kerala Coast. The district is also contains four sub-micro region such as coast, upland, plain and hills.
- (2) **Health infrastructure:** Considering the number of medical institutions, Thrissur district secured a state level average among the districts in Kerala.
- (3) **Health indicators:** Health indicators such as life expectancy at birth and MMR in Thrissur district reported a state level average.
- (4) **Household Health expenditure:** Regarding monthly per-capita medical expenditure on health among the districts in Kerala during 2009-10, Thrissur reported a state level average expenditure on health by the households.
- (5) **Consumption expenditure:** Among the 14 districts, Thrissur secured top in the non-food consumption expenditure of the households during 2011-12 as per the Consumption Expenditure Survey (Department of Economics and Statistics, Kerala, 2018).

(6) **Others:** Thrissur district shows lowest child sex ratio in Kerala as per Census 2011.

A pilot survey has conducted. Based on the insights from pilot survey, sampling instruments were revised. From the pilot survey it is found that 32.2 percent of households have expenditure on health care for a reference period of 15 days. Based on the pilot survey, the total sample size was fixed at 336 households. Rural population of Thrissur district is 32.81 percent and urban population is 67.19 percent of the total population as per the census 2011. The rural-urban sample size is fixed as a proportion of rural and urban population of Thrissur district. The rural and urban sample households are selected in the proportion of 1:2 based on census 2011. Out of 336 households 224 households are from urban area and 112 households are from rural area of Thrissur district (see Appendix 2- Table 1).

Figure 7.2
Analytical Framework



Source: Prepared by the investigator

Thrissur district, the cultural capital of Kerala, is the center of health care in the central Kerala since it covers the health care needs of the people in Thrissur, Palakkad, Malappuram and northern part of Ernakulum district. Thrissur district is the fastest becoming educational capital of Kerala due to the existence of various medical, engineering, ayurvedic, veterinary and art and science colleges. Kerala University of Medical and Allied Sciences is located at Thrissur. There are four medical colleges in Thrissur district. The three allopathic medical colleges in Thrissur district are Government Medical College, Thrissur, Jubilee Mission Medical College and Research Institute, and Amala Institute of medical Sciences. Thrissur district is also well known for its Ayurvedic treatment. There are two Ayurveda colleges,

Vaidhyaratnam Ayurveda College, Ollur and Poomully Neelakandan Namboothiripad Memorial Ayurveda Medical College, Cheruthuruthy. Thrissur district has 6 Taluks (Thalappilly, Chavakkad, Kodungallur, Thrissur, Mukundapuram and Chalakudy) and 255 villages.

Table 7.1
Demographic Profile of Thrissur District

Description	2011			2001
	Rural	Urban	Total	
Actual Population	1020537	2089790	3110327	2974232
Male	485875	988790	1474665	1422052
Female	534662	1101000	1635662	1552180
Sex Ratio (per 1000)	1100	1113	1109	1092
Child Sex Ratio (0-6 Age)	955	944	948	958
Child Percentage (%)	9.43	9.23	9.30	11.18
Male Child Percentage (%)	10.13	10.03	10.07	11.94
Female Child Percentage (%)	8.79	8.51	8.60	10.48
Average Literacy (%)	93.99	95.97	95.32	92.27
Male Literacy (%)	96.09	97.41	96.98	95.11
Female Literacy (%)	92.11	94.70	93.85	89.71
Population Growth (%)				4.58
Proportion to Kerala Population (%)				9.32
Area Sq. Km				3032
Density /km ²				981

Source: Census of India, 2011

There are 88 GramaPanchayaths, 16 Block Panchayaths and 1 District Panchayath in the three tier system of rural local bodies. There are 7 urban local bodies consist of 6 Municipalities and 1 Corporation.

7.3. Socio-Economic Characteristics of Households in Thrissur District

The differences in socio economic characteristics with respect to household health expenditure are presented in Table 7.2. Religion-wise distribution of rural households in Thrissur district constitutes 47.3 percent of Hindus followed by 26.3 percent of Christians and 25.9 percent of Muslims. In urban area the religion-wise distribution of households contain 37.5 percent of Hindus, 39.3 percent of Christians and 23.2 percent of Muslims. Among the rural households 54.5 percent constitute General category followed by Other Backward Class (OBC) (32.1 percent) and Scheduled Caste / Scheduled Tribes (SC/ST) (13.4 percent).

The social category of urban households contains 62.0 percent of General, 27.7 percent of OBC and 10.3 percent of SC/ST. The income status of households in

Thrissur district contains 30.4 percent of BPL households and 69.6 percent of Above Poverty Line (APL) households in rural area.

The income status of urban area includes 28.1 percent of BPL households and 71.9 percent of APL households. The percentage of BPL households are more in rural areas than in urban areas of Thrissur district.

Table 7.2
Socio-Economic Characteristics of the Households in Thrissur District

Category	Sub-Category	Rural	Urban
Religion	Hindu	53 (47.3)	84 (37.5)
	Muslim	29 (25.9)	52 (23.2)
	Christian	30 (26.8)	88 (39.3)
	Total	112 (100)	224 (100)
Social Category	General	61 (54.5)	139 (62.0)
	SC/ST	15 (13.4)	23 (10.3)
	OBC	36 (32.1)	62 (27.7)
	Total	112 (100)	224 (100)
Income status	BPL	34 (30.4)	63 (28.1)
	APL	78 (69.6)	161 (71.9)
	Total	112 (100)	224 (100)

Source: Survey Data

There are 27.7 percent of head of household who have SSLC among the rural households while it is 15.6 percent of urban households of Thrissur district. There are 35.7 percent +2 holders among the head of rural households when compared to 33.9 percent in urban samples of Thrissur district.

Table 7.3
Characteristics of Head of the Household

Category	Sub-Category	Rural	Urban
Education	SSLC	31 (27.7)	35 (15.6)
	+2	40 (35.7)	76 (33.9)
	Graduate	33 (29.5)	79 (35.3)
	PG & Above	8 (7.1)	34 (15.2)
	Total	112 (100)	224 (100)
Occupation	Regular salaried	31 (27.7)	88 (39.3)
	Self employed	47 (41.9)	93 (41.5)
	Casual wage labourers	34 (30.4)	43 (19.2)
	Total	112 (100)	224 (100)
Gender	Male	89 (79.5)	182 (81.3)
	Female	23 (20.5)	42 (18.7)
	Total	112 (100)	224 (100)

Source: Survey Data

There are 35.3 percent of degree holders among the head of urban households when compared to 29.5 percent in rural sample households in Thrissur district. The

percentage of head of households who have PG & Above is low in rural area than in urban area.

Household expenditure is mainly dependent upon the household income. Hence the occupational background of the head of the household is considered under study to examine the determinants of household health expenditure. The occupation is categorized into regular salaried, self employed and casual wage labourers. The major share of occupation of head of household occupies self employed category both in rural and urban areas of Thrissur (Table 7.3). The occupation of head of household in urban area contains 39.3 percent of regular salaried category followed by 19.2 percent of casual wage labourers. But in rural area casual wage labourers (30.4 percent) occupies the second place followed by regular salaried category (27.7 percent).

Sometimes the gender of head of household would influence the expenditure pattern of households (Sinha et al., 2016). Majority of sample households in urban and rural areas have male-head of household. It is evident that 79.5 percent of rural households and 81.3 percent of urban households have male-head of household. Female headed household is higher in rural area (20.5 percent) than in urban area (18.7 percent).

Table 7.4
Distribution of Households by Family

Category	Sub-Category	Rural	Urban
Type of Family	Joint family	19(16.9)	34(15.2)
	Nuclear family	93(83.1)	190(84.8)
	Total	112(100)	224(100)
Size of Family	1-4	55(49.1)	116(51.8)
	5-8	46(41.1)	90(40.2)
	9≤	11(9.8)	18(8.0)
	Total	112(100)	224(100)

Source: Survey Data

Type of family may be joint or nuclear. The sample households in Thrissur district are highly favoured for nuclear family. The rural-urban difference in type of family is low in the sample households. There are 16.9 percent of the rural households are in the nature of joint family and 83.1 percent of nuclear family. At the same time 15.2 percent of the families are joint and 84.8 percent are nuclear family.

Family size can be categorized to three classes; households with number of persons in the class of 1-4, 5-8 and 9 & above. Majority of households have 4 members both in rural and urban areas of sample households in Thrissur district. In rural area, 9.8 percent of families have a number of more than 9 members and 41.1

percent of families have a number of 8 members and 49.1 percent of families have a number of 4 members. Dependency of old- age population out of total population is high in Kerala. The sample households in Thrissur district hold the same result. Households have old-age dependency is the highest in rural area (74.1 percent) than in urban areas (67.9) in Thrissur district.

Table 7.5
Distribution of Households by Old-age Dependency

Old-age Dependency	Rural	Urban
Existent	83(74.1)	152(67.9)
Non-Existent	29(25.9)	72(32.1)
Total	112(100)	224(100)

Source: Survey Data

The health care needs are highly for the old-age population. The demand for health care among the old-age people lifts the expenditure on health (Angko, 2009; Samadi and Rad, 2013).

Table 7.6
Distribution of Households by Income

Annual Income (₹)	Rural	Urban
<150000	28 (25.0)	61 (27.3)
150001-300000	30 (26.8)	64 (28.6)
300001-500000	25 (22.3)	51 (22.7)
500001-1000000	20 (17.9)	35 (15.6)
1000001+	9 (8.0)	13 (5.8)
Total	112 (100)	224 (100)

Source: Survey Data

Annual income of the households can be categorized into five groups. 8.0 percent of rural households and 5.8 percent of urban households have income above ₹1000001.

Table 7.7
Distribution of Households by Health Insurance Scheme

Health Insurance Scheme	Rural	Urban	Total
Government funded	26(23.2)	46(20.5)	72(21.4)
Arranged by households	11(9.8)	24(10.7)	35(10.4)
Employer (not Govt.) supported health protection	15(13.4)	36(16.1)	51(15.2)
Others	4(3.6)	6(2.7)	10(3.0)
No insurance at all	56 (50.0)	112(50.0)	168 (50.0)
Total	112(100)	224(100)	336(100)

Source: Survey Data

It is observed that 26.8 percent of rural households have income in between 150001 to 300000. In rural area, 25.0 percent of households have income below

150000 and 17.9 percent of households have income in between 500001 to 1000000. In urban area, 28.6 percent of households have income in between 150001 to 300000 and 27.3 percent of households have income below 150000.

The fifty percent of households have insurance coverage. 21.4 percent of sample households have government funded health insurance scheme. RSBY/CHIS, CHISPLUS schemes in Kerala provide insurance coverage to the BPL households. Low income people from APL households also have the benefit of government supported insurance schemes in Kerala. All of these health insurance programmes of the government are named as KASP. Among the health insurance schemes government funded schemes constitute 21.4 percent followed by employer supported health protection (15.2 percent), arranged by households (10.4 percent) and others (3.0 percent). Among the schemes employer supported health protection constitute 13.4 percent in rural area and 16.1 percent in urban area of sample households.

7.4. Health Seeking Behaviour of Households

The health status of each and every person in the household is different. This will result in differences in health seeking behavior of households. The main characteristics of health seeking behavior of households are given below.

Table 7.8

Distribution of Households by Nature of Diseases

Nature of diseases	Rural	Urban
Injury	16(14.3)	26(11.6)
Communicable	47(41.9)	94(42.0)
Non-Communicable	49(43.8)	104(46.4)
Total	112(100)	224(100)

Source: Survey Data

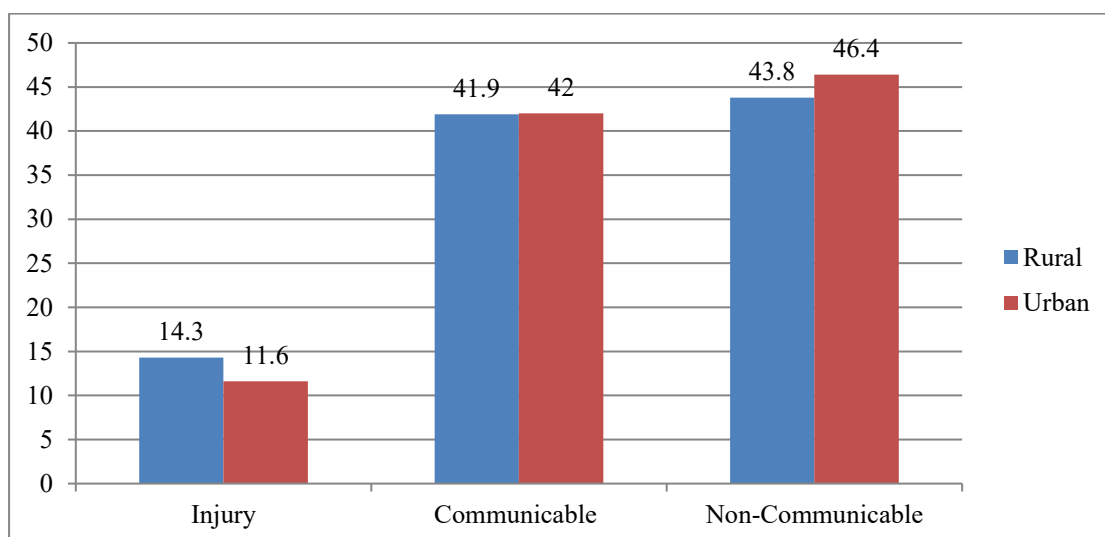
Nature of diseases may be grouped into injury, communicable diseases and non-communicable diseases. The burden of non-communicable diseases along with communicable diseases is high in Kerala. The dual burden of diseases can be evident both in rural and urban area. The diseases have an important role in determining household expenditure on health in the Thrissur district. From the Figure 7.3, it is evident that communicable diseases as well as non-communicable diseases have a crucial role in determining household health expenditure in Thrissur district.

From the Figure 7.3, it is revealed that non-communicable diseases are high in the rural areas of the sample district during the study period (43.8 percent). At the same time, non-communicable diseases are high in urban areas also (46.4 percent). At

the same time, injury related diseases are comparatively low both in rural and urban area alike. Therefore, in this context, the government and other policy makers should take some urgent measures to control the non-communicable diseases in rural and urban area of Kerala. Similarly there should be specific attention to the problems related to non-communicable diseases of the marginalised sections of the society.

Figure 7.3

Distribution of Households by Nature of Diseases



Source: Survey Data

In rural area the burden of non-communicable diseases (43.9 percent) is high when compared to communicable diseases (41.9). In urban area 46.4 percent of diseases are non-communicable in nature and 42.0 percent are communicable diseases. The difference between burden of communicable and non-communicable diseases is low in both rural and urban area. 14.3 percent of rural households and 11.6 percent of urban households have reported injury cases.

Table 7.9

Distribution of Households by Type of Treatment

Type of Treatment	Rural	Urban
Specialty	26(23.2)	55(24.6)
General	50(44.6)	117(52.2)
Specialty+ General	36(32.2)	52(23.2)
Total	112(100)	224(100)

Source: Survey Data

Healthcare treatment may be general treatment or specialty treatment. It is noticed that 44.6 percent of rural and 52.2 percent of urban households utilize general treatment and 23.2 percent of rural and 24.6 percent of urban households utilize specialty treatment. Further there are, 32.2 percent of rural and 23.2 percent of urban

households utilize both specialty and general treatment. The cost of treatment seems to be high for specialty treatment when compared to general treatment. Episodes of hospitalization are classified into two groups; number of times of hospitalization up to 3 and 4 & above. The relationship between episodes of hospitalisation and expenditure on health is positive.

Table 7.10

Distribution of Households by Episodes of Hospitalization

Episodes of hospitalisation	Rural	Urban
0-3	40(71.4)	85(75.9)
4+	16(28.6)	27(24.1)
Total	56 (100)	112(100)

Source: Survey Data

Higher the episodes of hospitalisation higher will be the expenditure. Majority of the households in rural and urban area have episodes of hospitalization up to 3. It is evident that 23.2 percent of rural households and 21.9 percent of urban households have more than four episodes of hospitalization.

Table 7.11

Distribution of Households by Delivery care

Delivery care	Rural	Urban
Availed	29(25.9)	46(20.5)
Non-availed	83(74.1)	178(79.5)
Total	112(100)	224(100)

Source: Survey Data

Among the households, 25.9 percent of rural and 20.5 percent of urban households have hospitalization for delivery care.

Table 7.12

Percentage Distribution of Hospitalisation Cases Receiving Treatment before Hospitalisation by Source of Treatment

Type of Medical Institution	Hospitalisation cases receiving treatment from before hospitalisation				
	Government Hospital	Private/ Charitable Hospital	Private clinic	Informal Healthcare Provider	All
Government Hospital	76.2	14.8	8.4	0.6	100
Private/ Charitable hospital	11.6	81.6	6.6	0.2	100
All	43.9	48.2	7.5	0.4	100

Source: Survey Data

As per the Vital Statistics Report 2016, among the number of live births in Kerala, 59.05 percent are normal deliveries and 39.75 percent are caesareans in government hospitals and in private hospitals 54.78 percent are normal deliveries and

41.93 percent are caesareans. As per NSS report of 71st round the medical expenditure for childbirth is higher in private hospitals than public and also higher in urban areas of Kerala. Delivery care would mount household health expenditure. Implementation of Janani Suraksha Yojana (JSY) would help to reduce maternal and child mortality by promoting institutional delivery with financial assistance especially for BPL households.

Percentage of hospitalisation cases receiving treatment before hospitalisation by source of treatment availed for each type of medical institution where admitted during the last 365 days are presented in Table 7.12. Distribution of hospitalisation cases receiving treatment before hospitalisation is 43.9 percent from government hospital, 48.2 percent from private/charitable hospital, 7.5 from private clinic and 0.4 percent from informal health provider. It is evident that 14.8 percent of hospitalisation cases receiving treatment from private/charitable hospital before hospitalisation and received treatment under government hospital and 81.6 percent from private hospitals before hospitalisation seeks medical care from private/charitable hospital. Percentage of treatment from government hospital before hospitalisation and utilize medical care as inpatient from government hospital is 76.2 percent and 11.6 percent from private/charitable hospital. The utilisation of private health care facilities is higher than government facilities among the sample households for treatment before hospitalisation.

Table 7.13

Percentage Distribution of Hospitalisation Cases Receiving Treatment after Hospitalisation by Source of Treatment

Type of Medical Institution	Source of post-discharge treatment				
	Government Hospital	Private/Charitable Hospital	Private clinic	Informal Healthcare Provider	All
Government Hospital	96.1	2.1	1.3	0.5	100
Private/Charitable hospital	4.2	93.4	2.1	0.3	100
All	50.15	47.75	1.7	0.4	100

Source: Survey Data

Distribution of hospitalisation cases receiving treatment after hospitalisation is 50.15 percent from government hospital, 47.75 percent from private/charitable hospital, 1.7 from private clinic and 0.4 percent from informal health provider. The utilisation of private health care facilities is lower than government facilities among

the sample households for post-discharge treatment. The source of treatment from government hospital increased after hospitalisation (50.15 percent) when compared to before hospitalisation (43.9 percent). But the source of treatment from private/charitable hospital decreased after hospitalisation (47.75 percent) when compared to before hospitalisation (48.2 percent). There would high discrepancy in expenditure between government and private hospitals.

7.5. Annual Household Health Expenditure of Households

Annual household health expenditure per-capita has obtained by dividing the annual household health expenditure by the household size. The variations in average annual household health expenditure per-capita with respect to various indicators are given below.

Table 7.14

Distribution of Average Annual Household Health Expenditure Per-capita by Religion

Religion	Rural	Urban
Hindu	6616.9	7015.3
Muslim	5554.9	6889.2
Christian	4836.0	8563.6
Average	5669.3	7489.4
Test Statistic	1.644	2.633
p value	0.440	0.268

Source: Survey Data

There is no significant difference between religion of households and average annual household health expenditure per-capita both in rural and urban area since $p > 0.05$. Average annual household health expenditure per-capita is the highest for Hindus (₹6616.9) followed by Muslims (₹5554.9) and Christians (₹4836) in rural area. In urban area, the religion-wise household health expenditure is the highest for Christians (₹8563.6) followed by Hindus (₹7015.3) and Muslims (₹6889.2).

Table 7.15

Average Annual Household Health Expenditure Per-capita by Caste

Caste	Rural	Urban
General	6354.3	8440.9
SC/ST	4126.1	3850.3
OBC	5281.7	6760.5
Average	5254.0	6350.6
Test Statistic	0.268	15.195
p value	0.875	0.001

Source: Survey Data

Average household health expenditure is more for urban area (₹7489.4) than rural area (₹5669.3) with respect to religion. There is significant difference between

caste and average annual household health expenditure per-capita in urban area (since $p < 0.05$). There is marginal difference between caste and average annual household health expenditure per-capita in rural area since the p-value is greater than the significance level. Average household health expenditure is more for urban area (₹6350.6) than rural area (₹5254.0) in relation to caste of the households. Caste-wise average annual household health expenditure per-capita is high for General (₹6354.3) followed by OBC (₹5281.7) and SC/ST (₹4126.1) in rural area. In urban area, it is also high for General (₹8440.9) followed by OBC (₹6760.5) and SC/ST (₹3850.3). Caste-wise household health expenditure pattern is same for households in rural and urban area.

Table 7.16

Distribution of Average Annual Household Health Expenditure Per-capita by Income Status

Income Status	Rural	Urban
BPL	3251.0	4249.0
APL	6774.7	8858.4
Average	5012.8	6553.7
Test Statistic	-1.629	-4.958
p value	0.103	0.000

Source: Survey Data

Income status would influence the health expenditure of households. There is significant difference between income status and average annual household health expenditure per-capita in urban area where $p = 0.00$. Average annual household health expenditure per-capita is higher for APL category (₹6774.7) than BPL category (₹3251.0) in rural area.

Table 7.17

Distribution of Average Annual Household Health Expenditure Per-capita by Education of Head of the Household

Education of head of the household	Rural	Urban
Under 10	9364.0	9010.4
+2	7043.7	6707.8
Graduate	5604.8	7513.6
PG & Above	4551.4	9218.1
Average	6641.0	8112.5
Test Statistic	7.862	6.245
p value	0.049	0.100

Source: Survey Data

Average annual household health expenditure per-capita is higher for APL category (₹8858.4) than BPL category (₹4249.0) in rural area. Average annual household health expenditure per-capita is more in urban area with respect to income

status. There is marginal difference between income status and average annual household health expenditure per-capita in urban area since p-value is greater than significance level.

There would be significant difference between household health expenditure and education level of head of household in rural area. ($p=0.049$). There exists rural-urban differences in the literacy rate and this would lead differences in the education level of head of household between rural and urban area.

Table 7.18

Distribution of Average Annual Household Health Expenditure Per-capita by Occupation of Head of the Household

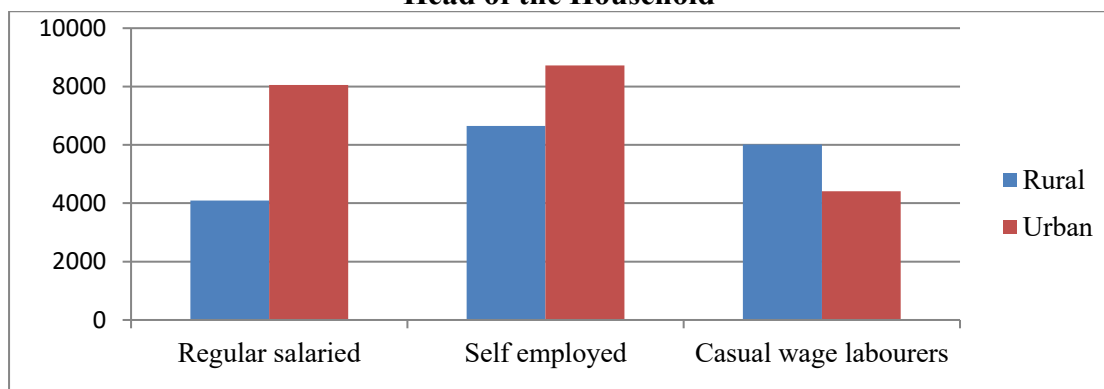
Occupation of head of the household	Rural	Urban
Regular salaried	4090.9	8048.2
Self employed	6652.0	8723.4
Casual wage labourers	6008.5	4412.6
Average	5583.8	7061.4
Test Statistic	2.46	8.156
p value	0.292	0.017

Source: Survey Data

Education level of head of household is not significant in average annual household health expenditure per-capita of urban households. The increase in education of head of household would decrease the expenditure on health among rural sample households. Education level of head of the household substantially influences the household health expenditure in rural area.

Figure 7.4

Average Annual Household Health Expenditure Per-capita by Occupation of Head of the Household



Source: Survey Data

Higher the level of education of head of household lower would be the household health expenditure in rural area. Educational level of head of household influences the preventive and curative health care expenditure of the households

especially for urban households with PG & above. Lower educational level of urban and rural head of household would mount the expenditure on health.

There is marginal difference between different occupation of the head of household and average annual household health expenditure per-capita in rural area ($p>0.05$). But in urban area there is significant difference between different occupation of the head of household and average annual household health expenditure per-capita since the p value is 0.017.

The variations in the health expenditure based on occupation of head of the household shows that household health expenditure is high for self employed (₹6652) followed by casual wage labourers (₹6008.5) and regular salaried workers (₹4090.9) in rural area. In urban area, household health expenditure in relation to occupation of head of household varies from self employed (8723.4) followed by regular salaried workers (₹8048.2) to casual wage labourers (₹4412.6).

Table 7.19

Distribution of Average Annual Household Health Expenditure Per-capita by Gender of Head of the Household

Gender of head of the household	Rural	Urban
Male	6112.2	7509.9
Female	4621.9	7573.9
Average	6112.2	7541.9
Test Statistic	-0.853	-0.102
p value	0.394	0.919

Source: Survey Data

The influence of gender in determining the household health expenditure can be examined through the gender of head of sample household. There is no head of household as transgender.

Table 7.20

Distribution of Average Annual Household Health Expenditure Per-capita by Family Type

Family Type	Rural	Urban
Joint family	6245.9	6048.5
Nuclear family	5803.2	7792.8
Average	6024.5	6920.7
Test Statistic	-0.651	-0.453
p value	0.515	0.651

Source: Survey Data

The analysis shows that there is marginal difference between gender of head of household as male and female and average annual household health expenditure per-capita in rural ($p=0.394$) and urban area ($p=0.919$).

The difference between expenditure on health based on gender of head of household is negligible in the case of urban households. Average annual household health expenditure per-capita in rural area (₹6112.2) is lower than the urban area (₹7541.9) with respect to gender of head of household. Expenditure on health is low in rural households where female as the head of household compared to male. Moreover, expenditure on health is high in urban households where female as the head of household when compared to male.

Average annual household expenditure on health per-capita is higher for joint family (₹6245.9) than nuclear family (₹5803.2) in rural area. But household health expenditure in urban area is high for nuclear family (₹7792.8) compared to joint family (₹6048.5). Moreover expenditure is high in nuclear family of the rural households with voluntary prepayment when compared to joint family.

Table 7.21
Distribution of Average Annual Household Health Expenditure Per-capita by Family Size

Family Size	Rural	Urban
1-4	5752.3	7957.6
5-7	6182.5	7194.6
8+	5274.5	6736.5
Average	5736.4	7296.2
Test Statistic	2.526	0.230
p value	0.283	0.891

Source: Survey Data

However the analysis shows that there is marginal difference between joint family and nuclear family with respect to average annual household health expenditure.

Table 7.22
Distribution of Average Annual Household Health Expenditure Per-capita by Income

Income	Rural	Urban
<150000	2981	4275.3
150001-300000	5960.5	7817.2
300001-500000	6468	8687.1
500001-1000000	7585	9264.8
1000001+	7632.6	10351.1
Average	6125.4	8079.1
Test Statistic	3.652	21.153
p value	0.455	0.000

Source: Survey Data

Household health expenditure seems to vary with the size of family. In urban area, household health expenditure is high for that household family size of 1-4 and

expenditure is low for that household family size of more than 8 members. But household health expenditure is more for that household family size of 5-7 in rural area. Average annual household health expenditure per-capita is more in urban area (₹7296.2) than in rural area (₹5736.4) based on family size. In spite of this variations, the analysis shows there is marginal difference between different family size and average annual household health expenditure in rural ($p= 0.283$) and urban area ($p=0.891$).

Generally income is one of the major determinants of consumption expenditure of households. It is evident that household health expenditure is low for poor income households both in rural and urban area. Household health expenditure is substantially high for high income households both in rural and urban area. There is a notable increase in household health expenditure to the high income people in rural and urban area. It is revealed that household health expenditure and income of households are positively related. Average annual household health expenditure per-capita is more in urban area (₹8079.1) than in rural area (₹6125.4) based on income of the households.

The analysis shows that significant variation in income levels and urban average annual household health expenditure ($p=0.00$). There is marginal difference in income levels and average annual household health expenditure per-capita in rural area ($p=0.455$). Income level of rural households seems to be more or less same with respect to household health expenditure except in the case of very low income category. Majority of low income category people in rural households have government supported health insurance schemes which would be helpful in reducing expenditure on health.

Table 7.23

Distribution of Average Annual Household Health Expenditure Per-capita by Nature of Diseases

Nature of diseases	Rural	Urban
Injury	1690.7	2525.7
Communicable	9126.7	9928.3
Non-Communicable	13300.8	18504.7
Average	8039.4	10319.6
Test Statistic	43.443	84.623
p value	0.000	0.000

Source: Survey Data

There exists significant variation between nature of diseases and household health expenditure. Both rural and urban areas show a significant variation between

nature of diseases and household health expenditure ($p=0.00$). The burden of non-communicable diseases is much higher than that of communicable diseases among households. The incidence of non-communicable diseases is high in Kerala especially among elder people (Paul and Singh, 2017). Morbidity profile of Kerala shows a increase in non-communicable diseases without reduction in communicable diseases. Households spend more for non-communicable diseases compared to communicable diseases. Non-communicable diseases would enhance health expenditure among households. Average annual household health expenditure per-capita for injury in rural area is ₹1690.7 and ₹2525.7 in urban area. Average household health expenditure per-capita for communicable diseases in rural area is ₹9126.7 and ₹9928.3 in urban area while the expenditure for non-communicable diseases is ₹13300.8 in rural area and ₹18504.7 in urban area in Thrissur district.

Table 7.24

Distribution of Average Annual Household Health Expenditure Per-capita by Type of Treatment

Type of Treatment	Rural	Urban
Specialty	3821.5	5732.7
General	985.9	1339.3
Specialty+ General	8315.4	15755.7
Average	4374.3	7609.3
Test Statistic	80.297	122.214
p value	0.000	0.000

Source: Survey Data

Type of treatment influences expenditure on health among households. Specialised health services are costlier than general health services. The average expenditure for specialty treatment (₹3821.5) is higher than general treatment (₹985.9) in rural area.

Table 7.25

Distribution of Average Annual Household Health Expenditure Per-capita by Episodes of Hospitalisation

Episodes of hospitalisation	Rural	Urban
0-3	4421.3	5832.5
4+	11428.1	13918.6
Average	7924.7	9875.5
Test Statistic	-4.590	-6.463
p value	0.000	0.000

Source: Survey Data

In urban area average expenditure on general treatment is ₹1339.3 and ₹5732.7 for specialty treatment. Since $p=0.00$, there exists significant difference between household health expenditure and different type of treatment of households

both in rural and urban area. Episodes of hospitalization would influence expenditure on health among households. Higher the episodes of hospitalization higher will be the household health expenditure. There exists significant difference between health expenditure and episodes of hospitalization of households both in rural ($p=0.00$) and urban area ($p=0.00$). Average household health expenditure for episodes of hospitalization is higher in urban area (₹9875.5) than in rural area (₹7924.7). When the episodes of hospitalization increases both medical and non-medical expenditure of the households also increases. If higher the episodes of hospitalization higher would be financial burden of the households.

7.6. Household Health Expenditure and Voluntary Prepayment

Households can be classified into two groups based on health insurance: households with voluntary prepayment and without voluntary prepayment. Average annual household health expenditure per-capita with respect to health insurance is given in Table 7.26.

Table 7.26
Distribution of Average Annual Household Health Expenditure Per-capita by Voluntary Prepayment

Locality	Households with voluntary prepayment	Households without voluntary prepayment	Average
Rural	3710	8004	5857
Urban	4894	10237	7566
Average	4302	9120	6711

Source: Survey Data

Average annual household health expenditure per-capita of sample households is ₹6711. Household health expenditure is high in urban area (₹7566) when compared to rural (₹5857). Average annual household health expenditure per-capita of households is higher for those households without voluntary prepayment (₹9120) than households with voluntary prepayment (₹4302).

Table 7.27
Distribution of Average Annual Household Health Expenditure Per-capita by Health Insurance Scheme

Health Insurance Scheme	Rural	Urban	Average
Government funded	2477	1457	1825.4
Arranged by households	4215	7700	6604.8
Employer (not Govt.) supported health protection	6825	7839	7433.3
Others	4647	6924	6254.5
Average	4540.9	5980.2	5529.5

Source: Survey Data

Most of the non-institutional expenditure is not covered under voluntary prepayment. This would enhance the health expenditure of households. The difference

in expenditure between two types of households is ₹4818. There exists a clear cut difference in expenditure on health based on geography. Average annual household health expenditure per-capita is more in urban area (₹5980.2) than in rural area (₹4540.9) based on health insurance scheme. The expenditure for government funded scheme of health insurance is low both in rural and urban area compared to the other types of insurance scheme. The expenditure for government funded health insurance scheme is low in urban area (₹1457) when compared to rural area (₹2477). Among the health insurance scheme, households spends more for employer supported health protection scheme (₹7433.3) followed by arranged by households (₹6604.8) and others (₹6254.5).

In rural area differences in expenditure between households with voluntary prepayment and households without voluntary prepayment is maximum in the case of nature of diseases (₹7154.6) followed by episodes of hospitalization (₹6954.2) and education of head of the household (₹5718.8) and minimum in the case of type of treatment (₹1206.3).

Table 7.28

Household Health Expenditure and Voluntary Prepayment

Indicators	Differences in Expenditure		Rural-Urban Difference
	Rural	Urban	
Religion	3883.0	5313.6	1430.6
Social category	3234.9	4236.3	1001.4
Income status	2954.7	4933.8	1979.1
Education of head of the household	5718.8	5281.6	437.2
Occupation of head of the household	3744.0	4923.2	1179.2
Gender of head of the household	3550.7	3817.8	267.1
Family type	4843.7	4274.5	569.2
Family size	3969.6	5345.0	1375.4
Income	4914.7	5612.4	697.7
Nature of diseases	7154.6	7908.0	753.4
Type of treatment	1206.3	3812.9	2606.6
Episodes of hospitalisation	6954.2	6605.1	349.1

Source: Survey Data

In urban area, differences in expenditure between households with voluntary prepayment and households without voluntary prepayment is maximum in the case of nature of diseases (₹7908) followed by episodes of hospitalization (₹6605.1) and income (₹5612.4) and minimum in the case of type of treatment (₹3812.9). Rural-urban difference in expenditure between households with voluntary prepayment and households without voluntary prepayment is high in respect of type of treatment (₹2606.6) and low in respect of gender of head of the household (₹267.1).

The analysis shows that the burden of household health expenditure is reduced with voluntary prepayment on health care. Majority of the sample households have government funded health insurance scheme. Government funded health insurance scheme assisted households to reduce hospitalization expenses and utilize better hospital facilities (Reshmi et al., 2007; Mini, 2013). One of the major drawbacks of government sponsored health insurance scheme in Kerala is the limited number of private empanelled hospitals.

7.7. Household Budget and Expenditure on Health

Household budget shows the relative importance of various commodities and services with the given level of income. The preference of the consumer is different for different commodities. Percentage share of expenditure on health in household budget shows the relative importance of healthcare of households.

The two groups of consumption expenditure, food and non-food, among BPL and APL households in rural and urban area is shown in Table 7.29. Health is included in the non-food category of the total household consumption expenditure. In rural area food component in the average annual total household is low among BPL households (39 percent) compared to APL households (41 percent).

Table 7.29
Average Annual Consumption Expenditure by Item

Item	Rural			Urban		
	BPL	APL	Total	BPL	APL	Total
Food	38.5	39.2	38.85	37.2	36.5	36.85
Housing	10.5	9.5	10	10.9	9.1	10
Education	11.5	13.1	12.3	12.9	13.8	13.35
Transport and entertainment	6.9	7.4	7.15	6.1	8.9	7.5
Health	8.3	9.9	9.1	9.5	10.3	9.9
Fuel and Energy	7.4	6.9	7.15	8.4	8	8.2
Clothing and Footwear	8.1	8.9	8.5	8.1	7.5	7.8
Others	8.8	5.1	6.95	6.9	5.9	6.4
Total	100	100	100	100	100	100

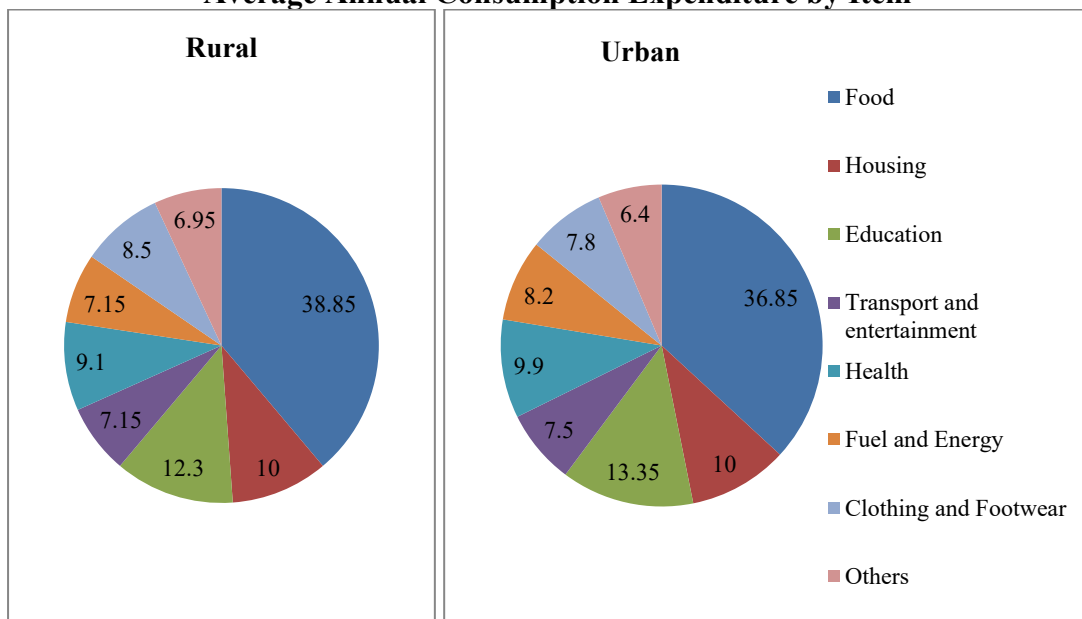
Source: Survey Data

The average share of health of the total household consumption expenditure is 9.1 percent in rural area and it is 8.3 percent for BPL households and 9.9 percent for APL households. The share of health in average total household consumption expenditure among BPL households is very low in rural area. This may be due to the influence of government supported health insurance schemes like RSBY and CHIS. The government takes steps for a universal health insurance scheme by broadening the different categories of households into the scheme. This government supported

health insurance scheme ensures inpatient treatment facility to a maximum of five members in a family through selected public and private hospitals especially for BPL households. This government sponsored health insurance scheme ensures paperless, cashless and floater basis to the beneficiaries with prefixed and surgical rates for treatment in general wards in the empanelled hospitals. RSBY and CHIS have a positive role in reducing hospitalization expenditure among BPL households in Kerala (Mini, 2013). This voluntary government supported health insurance scheme would enhance the utilization of health care facilities and improves the health status of the households.

The average share of health of the total household consumption expenditure among APL households (10.3 percent) is more than that of BPL households (9.5 percent) in urban area. The average share of health of the total household consumption expenditure is 9.9 percent in urban area.

Figure 7.5
Average Annual Consumption Expenditure by Item



Source: Survey Data

The proportion of non-institutional medical expenditure still high after the implementation of RSBY-CHIS since the benefit is only for institutional medical expenses through empanelled hospitals. The non-institutional medical expenditure threatens the financial stability of the households (Sinha, 2014). Moreover the APL households face financial hardship due to the institutional and non-institutional medical expenditure without any support of voluntary prepayment. Food component in the average annual total household expenditure is lower than the non-food

component of households in both rural and urban area. Food component in the average annual total household expenditure is higher in rural area (38.85 percent) than in urban area (36.85 percent). It is clear that health insurance increases the utilization of health care services among various socio-economic group of the population (Acharya et al., 2012). The preference of health insurance scheme is differ from different socio economic groups. Rich people preferred private health insurance schemes over government schemes and the middle income group preferred government schemes rather than private health insurance schemes (Reshmi et al., 2007).

7.8. Family Budget Allocation and Household Health

Household expenditure on health can be split-up by item-wise for public hospital and private hospitals. Generally expenditure can be divided into two: package component and non-package component.

Table 7.30 (a)
Average Medical Expenditure in Kerala per Hospitalization Case

Average expenditure Excluding Childbirth (₹) for treatment under	Public Hospital (Rural)		
	NSS 71 st round	NSS 75th round	Primary Survey
Package Component	506	325	340
Doctors Fee	108	333	342
Diagnostic Tests	743	1043	1157
Medicines	939	1810	2004
Bed Charges	173	257	276
Others	565	627	640
Total	3035	4395	4759

Source: NSS Report No. 574: Health in India, April 2016; NSS Report No. 586: Health in India, July 2020; Survey Data

The non-package component can be divided into several groups such as doctors' fee, diagnostic test, medicines, bed charges and others

Table 7.30 (b)
Average Medical Expenditure in Kerala per Hospitalization Case

Average expenditure Excluding Childbirth (₹) for treatment under	Private Hospital (Rural)		
	NSS 71 st round	NSS 75th round	Primary Survey
Package Component	4097	4441	4512
Doctors Fee	5177	5071	5181
Diagnostic Tests	3429	2987	3127
Medicines	6042	6593	6611
Bed Charges	3564	3320	3430
Others	3101	3537	3610
Total	25411	25949	26471

Source: NSS Report No. 574: Health in India, April 2016; NSS Report No. 586: Health in India, July 2020; Survey Data

. Both the primary and secondary data analysis of average medical expenditure per hospitalization is presented in the Tables 7.30 (a), (b), (c) and (d).

Average rural medical expenditure per-hospitalisation case in public hospital is ₹4759 and ₹26471 for private hospitals. Average rural medical expenditure per-hospitalisation case in public hospital increased from ₹3035 (NSS 71st round) to ₹4395 (NSS 75th round). Average rural medical expenditure per-hospitalisation case in private hospital increased from ₹25411 (NSS 71st round) to ₹25949 (NSS 75th round).

Table 7.30 (c)

Average Medical Expenditure in Kerala per-Hospitalization Case

Average expenditure Excluding Childbirth (₹) for treatment under	Public Hospital (Urban)		
	NSS 71 st round	NSS 75th round	Primary Survey
Package Component	115	199	212
Doctors Fee	125	128	149
Diagnostic Tests	720	1063	1112
Medicines	1197	2175	2312
Bed Charges	155	212	257
Others	430	812	905
Total	2743	4590	4947

Source: NSS Report No. 574: Health in India, April 2016; NSS Report No. 586: Health in India, July 2020; Survey Data

Average urban medical expenditure per-hospitalisation case in public hospital is ₹4947 and ₹33378 for private hospitals. Average rural medical expenditure per-hospitalisation case in public hospital increased from ₹2743 (NSS 71st round) to ₹4590 (NSS 75th round).

Table 7.30(d)

Average Medical Expenditure in Kerala per-Hospitalization Case

Average expenditure Excluding Childbirth (₹) for treatment under	Private Hospital (Urban)		
	NSS 71 st round	NSS 75th round	Primary Survey
Package Component	3730	5470	5518
Doctors Fee	4151	5502	5645
Diagnostic Tests	2570	3956	4003
Medicines	5163	7724	7980
Bed Charges	2721	5812	5911
Others	3474	4283	4321
Total	21808	32747	33378

Source: NSS Report No. 574: Health in India, April 2016; NSS Report No. 586: Health in India, July 2020; Survey Data

Average rural medical expenditure per-hospitalisation case in private hospital increased from ₹21808 (NSS 71st round) to ₹32747 (NSS 75th round). The cost of treatment has been increasing for the past several years. The price of medicines has increased tremendously.

Households received 80.1 percent surgery as free, 9.6 percent as partly free and 10.3 percent as on payment for surgery in government hospital. Households received 3.0 percent of surgery as free and 92.8 percent of surgeries as on payment in

private hospitals. Households received 42.55 percent services as free, 30.45 percent services as partly free and 27.0 percent as on payment in government hospitals.

Table 7.31
Medical Services by Payment Category of Households (%) for Different Hospital

Services received	Government Hospital				Private/Charitable hospital			
	Free	Partly free	On payment	All	Free	Partly free	On payment	All
Surgery	80.1	9.6	10.3	100	3.0	4.2	92.8	100
Medicine	40.3	50.5	9.2	100	4.1	10.3	85.6	100
X-ray/ ECG/EEG/Scan	24.1	27.5	48.4	100	0.8	1.9	97.3	100
Other diagnostic services	25.7	34.2	40.1	100	0.5	1.2	98.3	100
All	42.55	30.45	27.0	100	2.1	4.4	93.5	100

Source: Survey Data

Households received 2.1 percent services as free, 4.4 percent services as partly free and 93.5 percent as on payment in government hospitals.

Multivariate Analysis on Household Health Expenditure

Table 7.32
Number of Independent Variables by Category-wise

Between-Subjects Factors			
		Value Label	N
Type of Locality	1	Rural	112
	2	Urban	224
Religion	1	Hinduism	137
	2	Muslim	81
	3	Christian	118
Caste	1	General	200
	2	SC/ST	38
	3	OBC	98
Income Status	1	BPL	97
	2	APL	239
Income Group	1	<150000	89
	2	150001-300000	94
	3	300001-500000	76
	4	500001-1000000	55
	5	1000000+	22
Family Type	1	Joint family	53
	2	Nuclear family	283
Family Size	1	1-4	171
	2	5-7	136
	3	8+	29
Old Age Dependency	0	No	101
	1	Yes	235
Nature of Diseases	0	Injury	141
	1	Communicable	153
	2	Non-Communicable	
Episodes of Institutional Care	1	1-3	261
	2	4+	75
Delivery Care	0	Non-Availed	261
	1	Availed	75
Omnibus Test ^a			
Likelihood Ratio Chi-Square		df	Sig.
		245.493	18
			0.000
Dependent Variable: Average Annual per-capita Household Health Expenditure			
a. Compares the fitted model against the intercept-only model.			

Source: Survey data

In the multivariate analysis, average annual household health expenditure is considered as dependent variable. Here the dependent variable is a continuous variable. The relationship between dependent and independent variables are examined by using omnibus test. The omnibus test compares the intercept only model and the full model (containing all the independent variables). It tests whether there is a significant improvement in fit of the final model relative to the intercept only model. In this case, since the p value is less than 0.05, it is evident that a significant improvement in fit of the final model over the intercept only model. The omnibus test compares the intercept only model and the full model (containing all the independent variables). It tests whether there is a significant improvement in fit of the final model relative to the intercept only model. In this case, since the p value is less than 0.05, it is evident a significant improvement in fit of the final model over the intercept in model.

Table 7.33
Result of Multivariate Analysis

Tests of Between-Subjects Effects					
<i>Dependent Variable: Average Annual Household Health Expenditure</i>					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	11132920749.669 ^a	18	618495597.204	18.957	.000
Intercept	3843663855.840	1	3843663855.840	117.806	.000
Locality	317844956.697	1	317844956.697	9.742	.002
Religion	24322443.973	2	12161221.986	.373	.689
Caste	52176021.499	2	26088010.749	.800	.450
Income status	38713862.293	1	38713862.293	1.187	.277
Income group	182123487.819	4	45530871.955	1.395	.235
Family type	229198435.963	1	229198435.963	7.025	.008
Family size	31106604.470	2	15553302.235	.477	.621
Old age dependency	1390216.777	1	1390216.777	.043	.837
Nature of diseases	1322132760.492	2	661066380.246	20.261	.000
Episodes of institutional care	184464736.487	1	184464736.487	5.654	.018
Delivery care	2103785205.851	1	2103785205.851	64.480	.000
Error	10342773027.257	317	32627044.250		
Total	37920953113.000	336			
Corrected Total	21475693776.926	335			

a. R Squared = .518 (Adjusted R Squared = .491)

Source: Survey Data

The multivariate analysis found that there is a moderate goodness of fit between average annual household health expenditure and independent variables since the value of R^2 is 0.518. The explanatory power of independent variables is high compared with the help of Adjusted R^2 . The study found that 49.1 percent of variation of one variable is completely explained by the other (Adjusted R^2).

Parameter Estimates table shows the coefficients, their standard errors, the *t* test, associated p-values (Sig.) and the coefficient intervals. Urban (Type of locality), Christian (Religion), OBC (Caste), APL (Income status), 1000000+ (Income group), Nuclear family (Family Type), 8+ (Family size), Yes (Old age dependency), Non-Communicable (Nature of diseases), 4+ (Episodes of institutional care) and Aailed (Delivery care) are taken as the reference categories of the corresponding independent variables.

Table 7.34
Result of Multivariate Analysis

Parameter Estimates							
Dependent Variable: Average Annual Household Health Expenditure per-capita							
Parameter	B	Std. Error	t	Sig.	95% Confidence Interval		
					Lower Bound	Upper Bound	
Intercept	18515.26	2873.53	6.44	0.00	12861.67	24168.86	
Type of Locality	Rural	-2103.22	673.85	-3.12	0.00	-3429.00	-777.43
	Urban	0 ^a					
Religion	Hinduism	704.36	846.66	0.83	0.41	-961.43	2370.15
	Muslim	1106.75	1828.54	0.61	0.55	-2490.86	4704.36
	Christian	0 ^a					
Caste	General	1438.77	1569.66	0.92	0.36	-1649.50	4527.04
	SC/ST	-32.86	1842.58	-0.02	0.99	-3658.09	3592.37
	OBC	0 ^a					
Income status	BPL	-2225.59	2043.15	-1.09	0.28	-6245.44	1794.26
	APL	0 ^a					
Income group	<150000	3954.39	2261.89	1.75	0.08	-495.82	8404.61
	150001-300000	2299.71	1401.27	1.64	0.10	-457.26	5056.67
	300001-500000	2655.85	1441.70	1.84	0.07	-180.65	5492.35
	500001-1000000	3195.05	1470.10	2.17	0.03	302.66	6087.44
	1000000+	0 ^a					
Family type	Joint family	-3385.40	1277.30	-2.65	0.01	-5898.46	-872.34
	Nuclear family	0 ^a					
Family size	1-4	428.06	1790.75	0.24	0.81	-3095.20	3951.32
	5-7	-334.77	1559.69	-0.21	0.83	-3403.44	2733.89
	8+	0 ^a					
Old age dependency	No	157.46	762.83	0.21	0.84	-1343.39	1658.32
	Yes	0 ^a					
Nature of diseases	Injury	-8431.21	1324.83	-6.36	0.00	-11037.78	-5824.64
	Communicable	-5818.60	1129.69	-5.15	0.00	-8041.24	-3595.96
	Non-Communicable	0 ^a					
Episodes of institutional care	1-3	-2087.13	877.773	-2.378	.018	-3814.129	-360.135
	4+	0 ^a					
Delivery care	Non-Aailed	-7960.61	991.367	-8.030	.000	-9911.096	-6010.116
	Aailed	0 ^a					

a. This parameter is set to zero because it is redundant.

Source: Survey Data

Other categories are significant when compared with the reference categories. Since the corresponding p value of the category type of locality is less than 0.05 we can conclude that the average annual household health expenditure of rural is significantly different from that of urban. Also the negative value of the estimate

indicates that the average annual household health expenditure of rural is lesser than that of urban.

Since the p values corresponding to the categories of the variables religion, caste, income status, family size and old age dependency are not lesser than 0.05. It is evident that the average annual household health expenditure of these categories are not significantly different from their respective reference categories.

Since the p values corresponding to the income group categories <150000, 300001-500000 and 500001-1000000 are less than 0.05, it is clear that the average annual household health expenditure of respondents belonging these categories are significantly different from that of the reference category 1000000+. Positive values of the corresponding estimates indicates that the average annual household health expenditure of the families belonging these categories are higher that of the families belonging to the reference category. Also it is clear that the average annual household health expenditure of the families having income between 150001 and 300000 is not significantly different from that of the reference category.

Since the corresponding p value of the category family type is less than 0.05, it is evident that the average annual household health expenditure of joint family is significantly different from that of nuclear family. Also the negative value of the estimate indicates that the average annual household health expenditure of joint family is lesser than that of nuclear family.

Since the p values corresponding to the nature of diseases categories Injury and Communicable are less than 0.05, it is clear that the average annual household health expenditure of respondents belonging these categories are significantly different from that of the reference category (Non-Communicable). Negative values of the corresponding estimates indicate that the average annual household health expenditure of the respondents belonging to these categories is lesser that of the respondents belonging to the reference category.

Since the corresponding p value of the category episodes of institutional care is less than 0.05, it is clear that the average annual household health expenditure of 1-3 category is significantly different from that of 4+ category. Also the negative value of the estimate indicates that the average annual household health expenditure of 1-3 category are lesser than that of 4+ category.

Since the corresponding p value of the category Delivery care is less than 0.05, it is evident that the average annual household health expenditure of delivery

care not-availed category is significantly different from that of the availed category. The negative value of the estimate indicates that the average annual household health expenditure of non-availed category is lesser than that of availed category.

7.9. Financing Mechanism of Household Health Expenditure

The financing mechanism of households for health care can be of different type. Percentage share of source of finance of households for health expenditure are presented in Table 7.36.

Table 7.35

Source of Finance for Household Health Expenditure

Source of finance	Rural	Urban
Income /savings of household	40.3	43.5
Borrowings	19.5	11.1
Sale of assets	5.4	16.2
Contributions from friends and relatives	14.2	8.7
Allowances from the government	10.9	5.1
Reimbursement of insurance company	7.8	15.4
Others	1.9	1.8
Total	100	100

Source: Survey Data

It is evident that income or savings of household is the main source of finance for expenditure on health by the households both in rural (40.3 percent) and urban (43.5 percent) area. Borrowings (19.5 percent), contributions from friends and relatives (14.2 percent) and allowances from the government (10.9 percent) are the other source of finance of rural households. Sale of assets (16.2 percent), reimbursement from insurance company (15.4 percent) and borrowings (11.1 percent) are the other financing sources of urban households. Reimbursement of insurance company as a source of finance constitutes 7.8 percent in rural area.

7.10. Constraints Related to Household Health Expenditure

Lack of medicines and lack of manpower are the main problems faced by the rural households in relation to government hospitals. Government implemented new programmes on health care. But lack of information about these programmes causes hurdles in the health care of common people. Information asymmetry is highest in health care. The complexity of health care system aggravated the problems of households in relation to expenditure. Poor condition of hospitals and poor behavior of employees are the problems faced by the urban households in relation to

government hospitals. Debt position is the main constraint faced by the households in urban and rural area in relation to high household health expenditure. While in the case of rural households lack of saving (19.5percent) and low-insurance participation (18.2 percent) are the main problems to tackle high health expenditure.

Table 7.36

Problems of Households in Relation to Expenditure on Health

Problems	Rural	Urban
Inadequate saving	19.5	18.5
Insignificant cooperation of the head of household	3.6	2.2
Inadequate of health consciousness	5.5	4.7
Inadequate insurance participation	18.2	19.5
Insufficient information on health care facilities.	6.1	5.4
Inadequate support from the government	4.3	2.5
Infrastructure in government hospitals	6.2	12.1
Inadequate financing	16.5	13.8
Sub-optimum debt position	20.1	21.3

Source: Survey Data

The least affected problem is the poor cooperation of head of household both in rural (3.6 percent) and urban area (2.2 percent). Lack of health consciousness and poor information on health care are the other problems faced by the households in relation to expenditure on health.