

HEALTH STATUS OF TRIBAL COMMUNITIES IN KERALA

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Abstract

The state of Kerala is well known for its impressive health indicators which are comparable to that of many developed countries. But there are many outliers to Kerala's model of 'good health at low cost'. The scheduled tribe communities are the most disadvantaged among the outlier communities in the state. This paper takes analytical look at the health status of the eight prominent tribal communities in Kerala based on the primary survey of 300 tribal households in three tribal dominated districts of the state. The analysis of asset holdings and income of tribal households manifest considerable variations and inequalities among the communities. Communities like Mala Arayan, Kurichiyan and Kuruman are found to be better-off than others. Though the tribal population of Kerala has superior demographic and health indicators compared to their counterparts in the other states and that of national average, 79 per cent of the households did experienced one or more type of disease during the reference period of past 30 days. The computed morbidity prevalence rate is 282 per thousand population and Uraly Kuruma community are the most vulnerable group to ailment while Muthuvan is least vulnerable. The highest percentage of reported ailment was fever of unknown origin followed by high/low blood pressure. The annual hospitalisation rate is 127.52 per thousand for tribal communities as a whole. The rate is highest for the Kuruman community and is lowest for the Muthuvan tribal community. Majority of tribal household belongs to low health care need category. At the same time more than half of the tribals are perceived to have good or very good health indicative of the presence of perception bias.

Key words: Tribal communities, Morbidity prevalence rate, Hospitalisation rate, Health care need, Self-reported health status.

Introduction

The state of Kerala has received international acclaim for its achievement of better health indicators which are comparable with most advanced economies of the world. Kerala model of "good health at low cost" is characterised by superior health and demographic indicators with comparatively low investments. The traditions of the government support for health development, high level of education especially female education, greater health consciousness were the important contributory factors for the advancement of health care in the state. However, there has

been growing conviction that the health care sector of the state is at crossroads. In such a scenario, this paper takes an analytical look at the health status of the most vulnerable population of the state, namely the tribal communities. Such an analysis is of pivotal importance because the contributory factors that led to Kerala's health miracle have played only a limited role in the case of scheduled tribes of the state.

Methodology and Data Source

The study is based on both primary and secondary data. Primary data was collected through a sample survey among selected 300 Schedule Tribe (ST) households of three districts of Kerala. The selected districts for the study are Wayanad, Idukki and Palakkad because they have a significant concentration of STs of the state. Wayanad (31.24%), Idukki (11.51%) and Palakkad (10.10%) accounts for over fifty percent of total tribal population in the state. There are 36 tribal communities in Kerala in which 12 constitutes around 90 percent of their population. The study was conducted among eight such non-primitive communities, namely Paniyan, Adiyar, Kuruman, Kurichiyar, Uraly Kuruma, Mala Arayan, Muthuvan and Irular. Wayanad was chosen for studying five communities (Paniya, Adiyar, Kuruman, Kurichiyar and Uraly Kuruma), Idukki was chosen for two communities (Mala Arayan and Muthuvan) and Palakkad was chosen for the study of one tribal community (Irular). A Multistage stratified random sampling with the aid of structured interview schedule was undertaken for gathering information from the selected households. The reports of Directorate of Health Services, Govt of Kerala, SRS bulletin and census records of the country were the major sources of secondary data.

Living Conditions of Tribal Communities

The Scheduled tribe population of Kerala has better demographic and health indicators compared to their counterparts in the other states and that of national average (Table 1).

Table 1: Demographic and Health indicators of Scheduled Tribe (2011)

	India	Kerala
Percentage to Total Population	8.6	1.45
Decadal Growth Rate	23.7	33.1
Child Population to Total Population	16	11.2
Literacy Rate	58.96	75.81
Female Literacy	49.35	71.1
Male Literacy	68.53	80.76
Sex Ratio (Rural)	991	1031
Sex Ratio (Urban)	980	1070
Sex Ratio (Total)	991	1035
Infant Mortality Rate (Rural)	85	60
Infant Mortality Rate (Urban)	61	44
Infant Mortality Rate (Total)	84	60

Source: Population Census (2011)

The sample population of the study were 1341 with 650 males and 691 females. Eighty percent (N=239) of the households are male headed. The source of income of the tribal households does have an influence on the affordability of health care. Table 2 brings out that a major proportion of the community works as agricultural labourers for their livelihood followed by non-agricultural work (daily wage labour or coolie). However, this general pattern is changed in the case of Mala Arayan community whose main source of livelihood is government/semi government jobs.

Table 2: Sources of Livelihood of Scheduled Tribe (in percentages)

Main Source of income	Paniyan	Adiyan	Kuruman	Kurichiyen	Uraly Kuruma	Mala Arayan	Muthuvan	Irular	ST (combined)
None	1	0	0	2	0	5	4	0	1.67
Land and related	3	7	27	17	23	30	11	18	14
Forest related	0	0	0	0	8	0	7	0	1
Non agricultural labour	37	14	23	17	8	0	14	39	23.7
Employment Guarantee	4	0	7	2	8	0	14	14	5.33

Scheme									
Govt/semi govt job	0	7	10	5	0	35	4	7	7.67
Agricultural Labour	54	71	33	51	38	18	43	18	42.3
Animal Husbandry	0	0	0	2	15	0	0	4	1.33
Small Vendor	0	0	0	0	0	3	0	0	0.33
Private Service	1	0	0	2	0	8	4	0	2
Others	1	0	0	0	0	3	0	0	0.67
Total	100	100	100	100	100	100	100	100	100

Source: Primary survey

Land is a key productive asset in the case of tribal communities and the landholdings of the household can be used to trace out their economic status. The landholdings of the household are measured in cents (100 cents = 1 acre of land). The descriptive statistics and the estimated Lorenz curve shows that there are high inequalities in household landholdings with the mean landholdings being 41.89 cents (95% CI =31.87-51.83) with high variance. At the same time, average landholding of paniya is only 4.6 cents (95% CI =4.34-4.87).

Table 3: Descriptive Statistics of Landholdings among Tribal Households

Descriptive Statistics		Paniyan	Adiyan	Kuruman	Kurichiyar	Uraly Kuruma	Mala Arayan	Muthuvan	Irular	ST (combined)
Mean		4.60	51.00	32.87	44.56	23.08	104.09	50.54	95.57	41.89
95% CI	Lower Bound	4.34	12.52	19.66	32.23	2.79	45.52	32.81	48.27	31.87
	Upper Bound	4.87	89.48	46.06	56.89	43.36	162.67	68.26	142.88	51.93
Std. Deviation		1.38	66.64	35.34	39.08	33.56	183.17	3002.2	121.99	88.26
Skewness		4.80	1.54	1.78	1.15	1.75	3.66	.632	1.37	6.01
Range		12.00	195.00	150.00	155.00	100.00	1000.00	13000.00	400.00	1000
Minimum		3.00	5.00	0.00	5.00	0.00	0.00	2000.00	0.00	0.00
Maximum		15.00	200.00	150.00	160	100.00	1000.00	15000.00	400.00	1000

Source: Primary survey

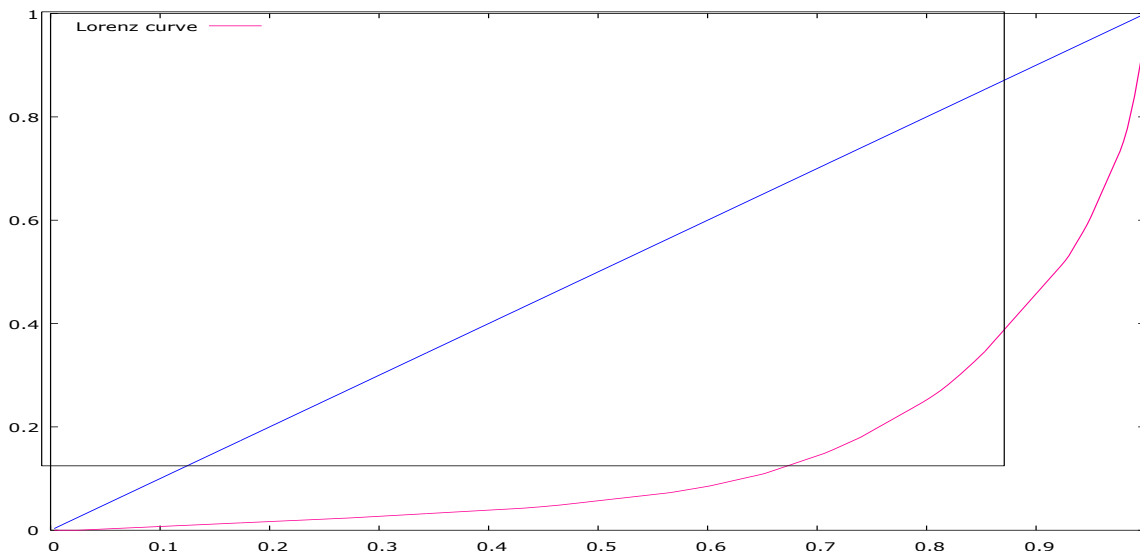


Figure 1: Lorenz Curve of land holding

(Sample Gini coefficient = 0.705671; Estimate of population value = 0.708031)

The analysis of monthly income of the households also indicates high degree of inter-tribal inequality. The average monthly income is the lowest for Uraly Kuruma while it is highest for Mala Arayan households. It is evident that Mala Arayan community who are major beneficiaries of the reservation policy of the central and state government in education and government jobs were able to render it into higher income (Table 4)

Table 4: Descriptive Statistics of Monthly Income of Tribal Households

	Mean	95% CI		Standard Deviation	Skewness	Range
		Lower Bound	Upper Bound			
Paniyan	7135.38	6345.23	7925.53	4102.8	0.81	19400
Adiyan	8107.14	5707.28	10507.01	4156.45	0.32	13000
Kuruman	11876.67	8804.96	14948.37	8226.19	2.14	36000
Kurichiyar	7890.24	6587.63	9192.86	4126.91	0.49	17000
Uraly Kuruma	4430.77	2626.74	6234.79	2985.35	1.32	12000
Mala Arayan	17500.00	14594.00	20405.99	9086.48	0.357	38000
Muthuvan	6571.43	5407.29	7735.56	3002.20	.63	13000
Irular	7907.14	5627.42	10186.86	5879.21	2.16	28000
ST (combined)	9042.17	8287.89	9796.43	6638.59	1.87	40000

Source: Primary survey

Health Status of Scheduled Tribe

The analysis of the health status of the scheduled tribes shows that 79 per cent of the households did experience one or more type of disease during the reference period of past 30 days (Table 5). It is highest in the case of Uraly Kuruma community and lowest among Muthuvan households. Similarly, Uraly Kuruma household reported highest incidence of acute and chronic episodes during the reference period. It can also be observed that the presence of chronic episodes is high among the economically well off community of Mala Arayan. The presence of physically disadvantaged persons is negligible among the tribal households.

Table 5: Health Profile of Tribal Households

Morbidity Profile	Paniyan	Adiyan	Kuruman	Kurichiyar	Uraly Kuruma	Mala Arayan	Muthuvan	Irular	ST (combined)
Presence of chronic episodes (%)	35	21	37	24	61	60	46	32	38
Presence of acute episodes (%)	11	21	17	21	23	20	0	17	15
Presence of physically/mentally challenged member (%)	4	7	3	2	0	5	0	3	3
Ailment during the last 30 days (%)	85	79	77	73	92	80	57	82	79

Source: Primary survey

The morbidity prevalence rate or rate of ailment is often cited as an important indicator of the health status and sometimes it is referred as an indicator of health consciousness (Verghese 2009). The prevalence of morbidity has been defined as the number of reported disease prevailing in a population during the reference period to the total population exposed to the risk of that disease (Navaneetham et al 2009). Thirty days prior to the date of survey has been used as the reference period for computing the morbidity prevalence rate. The computed rate confirms that Uraly Kuruma community are the most vulnerable group to ailment while Muthuvan is least vulnerable (Table 6)

Table 6: Morbidity Prevalence Rate in 30 days reference period

Sub caste	Number of Male	Number of Female	Total	Ailment Persons	Morbidity Prevalence Rate (per 1000)
Paniyan	245	274	519	126	242
Adiyan	33	31	64	20	312
Kuruman	70	69	139	44	316
Kurichiyan	83	89	172	54	313
Uraly	26	22	48	23	479
Mala Arayan	81	85	166	44	265
Muthuvan	60	62	122	23	188
Irular	52	59	111	45	405
ST (combined)	650	691	1341	379	282

Source: Primary survey

The reported ailment with sub caste break up is presented in Table 7. It reveals that among all tribal communities the highest percentage of reported ailment is fever of unknown origin followed by high/low blood pressure. The cases of sickle cell anaemia were reported among Adiyan, Paniyan, Kuruman and Muthuvan households.

Table 7: Type of Ailment in 30 days reference period (in percentage)

Ailment	Paniyan	Adiyan	Kuruman	Kurichiyan	Uraly Kuruma	Mala Arayan	Muthuva	Irular	ST (combined)
Fever of unknown Origin	35	43	33	20	23	25	25	36	30.33
Asthma and other respiratory diseases	8	14	0	5	8	5	0	18	7
Cardiovascular ailments	8	0	3	5	8	10	0	0	5.33
Blood Pressure	8	7	17	12	8	20	21	11	12.33
Skin Diseases	1	0	0	0	0	0	0	7	1
Ear/throat/eye ailments	4	0	0	0	0	0	0	0	1.33
Kidney/urinary system related	5	0	0	2	0	5	0	0	2.67

Cancer/tumor	0	0	0	2	0	3	0	4	1
TB	1	0	0	2	0	0	0	0	0.67
Chicken pox	0	0	0	0	0	5	0	0	0.67
Diseases of mouth/teeth/gum	0	0	3	2	23	0	0	0	1.67
Accident/injury/fractures	2	0	0	2	0	3	0	0	1.33
Diarrhoea/decentry	2	0	0	0	0	0	0	0	0.67
Gynaecological disorders	3	0	7	2	0	0	0	0	2
Sickle Cell Anaemia	1	7	3	0	0	0	4	0	1.33
Diabetics	6	7	3	10	0	3	4	0	4.67
Epilepsy	1	0	0	0	0	0	0	0	0.33
Anemia	1	0	0	0	8	3	4	0	1.33
Mental disease	1	0	0	0	0	0	0	0	0.33
Celebral palsy	0	0	0	2	8	0	0	4	1
Arthrities	0	0	7	7	0	0	0	4	2
Gastro enteric disease	0	0	3	0	0	0	0	0	0.33
Liver sirosis	0	0	0	0	8	0	0	0	0.33
No ailments reported	15	21	20	24	8	20	43	18	20.33
Total	100	100	100	100	100	100	100	100	100

Source: Primary survey

One major limitation of only drawing inferences from the morbidity rate is that, morbidity being a subjective concept is prone to reporting errors. To overcome this limitation and to supplement the analysis of health status of the tribal population, we have computed the annual hospitalisation rate. Hospitalisation is considered as the non-fatal health outcome which is relatively free from

the reporting bias or errors of perception of the respondents. The annual hospitalisation rate is defined as the number of persons who had been hospitalised during the year leading up to the survey per thousand population. The hospitalisation rate among the tribal communities is presented in the figure 2.

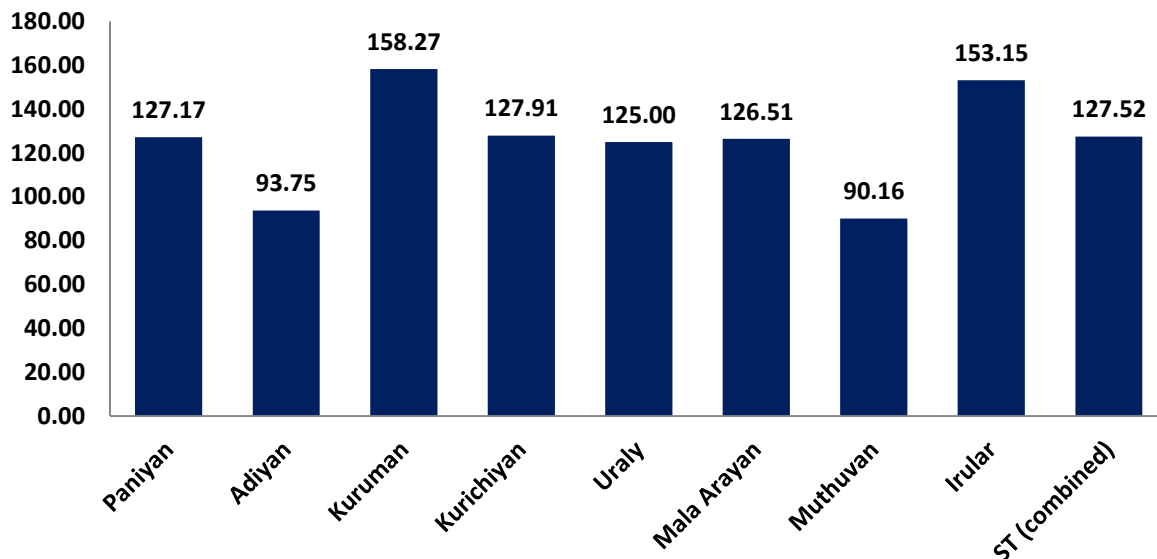


Figure 2: Hospitalisation Rate among Tribal Communities

The annual hospitalisation rate is 127.52 per thousand for tribal communities as a whole. The rate is highest for the Kuruman community and is lowest for the Muthuvan tribal community.

Following Mukherjee et al. (2011) we classified the level of health care need based on two characteristics, namely, the number of members who were elderly (aged 60 years and more) and the number of members with chronic illness. A household having neither elderly member nor any member with chronic illness was categorised as 'low health care need household'. A household having either, (a) no elderly member but one or more members with chronic illness or (b) no member with chronic illness but one or more elderly members was categorised as 'high health care need'. A household with at least one or more elderly members and one or more members with chronic illness were categorised as 'very high health care need'. The analysis demonstrated that majority of tribal household belongs to low health care need category (Table 8). At the same time, forty three percent Mala Arayan tribal community fit into very high health

care category due to presence of elderly households (58 per cent) and prevalence of chronic illness (60 per cent).

Table 8: Level of Health Care Need (in percentages)

Level	Paniyan	Adiyan	Kuruman	Kurichiyan	Uraly Kuruma	Mala Arayan	Muthuvan	Irular	ST (combined)
Low	42	36	50	44	23	30	39	54	41.33
High	32	43	20	39	46	28	46	32	33.67
Very High	25	21	30	17	31	43	14	14	25
Total	100	100	100	100	100	100	100	100	100

Source: Primary survey

Health status of the population can also be measured using self assessed health as an outcome measure. Here, an attempt is made to assess self reported health status of tribal household using a five point Likert scale. Respondents were asked to rate their overall perceived health as very bad, bad, good, very good and excellent (Table 9).

Table 9: Self Reported Health Status (in percentages)

	Very Bad	Bad	Good	Very Good	Excellent
Paniyan	12.26	33.96	41.51	12.26	0
Adiyan	14.29	14.29	42.86	28.57	0
Kuruman	3.33	30	30	36.67	0
Kurichiyan	14.63	21.95	29.27	34.15	0
Uraly Kuruma	30.76	30.77	38.46	0	0
Mala Arayan	10	15	5	40	30
Muthuvan	0	35.71	3.57	46.43	14.29
Irular	0	25	25	42.86	7.14
ST (combined)	10	27.67	28.67	27.67	6

Source: Primary survey

It can be noted that more than half of the tribals are perceived to have good or very good health. Here we can see instance of “perception bias” since 80 per cent of households reported at least

one ailment during the 30 days reference period. Sen (2002) has pointed out that perception bias may emerge among the people who lack the informational base to assess their own health status. It seems that tribal households have underreported their ill health status.

Conclusion

The attempt to trace out the health status of tribal communities of using the indicators of morbidity and hospitalisation showed that communities which belongs to lower socioeconomic status reported highest morbidity. One among every four tribal individual perceived themselves to be sick during the reference period. Fever of unknown origin, blood pressure and diabetics are the most common ailments. With high morbidity prevalence rate a large majority of tribal population is susceptible to catastrophic health spending. Though the Kerala has made noteworthy progress in health indicators, the scheduled tribe population of the state still suffers from both communicable and non communicable diseases. Further, there are large inequalities among different tribal communities. While the Mala Arayan community enjoys a better livelihood and health indicators, communities such as Uraly and Paniyan reveal a dismal picture. To conclude it should be said that since the poor and marginalised communities, such as scheduled tribes, who are more vulnerable to ill health, Kerala's highly praised health success story at high prices, calls for introspection. Otherwise, Kerala's good health will be at the cost of impoverishment of low income groups of the state.

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