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Perception, Poverty and Health: A Contribution

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1. Introduction

Comparing mortality experiences in diverse cultural and socio-political settings, Kunitz (1994) argued for intimate understanding of particular people and settings based on local knowledge of social organization, cultural beliefs and values. What is true of mortality is equally, if not more, true of morbidity. Assessment of morbidity is a particularly difficult problem as self-perceptual view is hard to escape in any assessment of health status and self-assessment can be enormously affected by one’s general mental outlook. More important and difficult problem relates to the systematic influences on the perception of health status. The privileged frequently report higher incidence of illness. Education and awareness increases the understanding of morbidity. Also, systematic use of medical services increases the self-perception and reporting of morbidity (Sen, 1994: 124).

A particularly difficult task is inter-regional comparison of morbidity owing to systematic social influences on the perception of morbidity. This leads to peculiar and often intractable patterns. For instance, comparison of morbidity of Scheduled Caste, Scheduled Tribe, and others in Kerala is regularly carried out. All the three categories are highly heterogeneous within groups and across geographical space. How to interpret the results of statewide surveys on health status in such a situation? Micro studies are probably needed for setting the broad social context and look for other influences on perceived morbidity.

The social influences on self-perception of health as well as the influence of social organization and cultural beliefs on the risk factors could considerably mask the poverty-ill health relationship. We illustrate this complex relationship with data from a micro study in Kerala. The enquiry points to the need for extreme caution in using categories like, Scheduled Caste (SC), Scheduled Tribe (ST), which are extremely heterogeneous social groups. We present comparison of perceived health status across groups within a Panchayat, the lowest development administrative unit in Kerala, of about 16000 population in Wayanad, northern Kerala. The attempt is to present the patterns and look for some explanatory variables.

2. Wayanad district

The data for the study comes from the Kottathara survey, which covered the entire Gram Panchayat. There were 3352 households identified and surveyed. The following demographic information is based on information collected from these households. The

survey identified 16,110 individuals, 336 individuals who were ‘absent’ at the time of the survey, and 108 who were ‘visitors’. The survey was carried out during April- June 2003.

Kottathara Panchayat is situated in the mountainous Wayanad district in northern Kerala (Map 1). Wayanad, covers an area of 2,131 sq. kms., and is essentially rural. The total population in 2001 is 786, 627, and the percentage of urban population in Wayanad is 3.8 (the lowest among all 14 districts of Kerala), with a population density of 369/sq.km (Census of India, 2001). Wayanad is also one of the poorer districts in Kerala. The BPL census of 1998-99 of the Rural Development Department, which estimated the proportion of poor living in each district, found it to be considerably higher in Wayanad (50%) compared to the state average (37%)¹.

Map 1: Wayanad, and other districts of Kerala



¹ These results should be interpreted with some caution, as the estimates of poverty was 25% higher than the consumption (NSSO) based estimates.

Over one third of Kerala's Scheduled Tribes (ST) live in Wayanad; the percentage of tribal populations in the district is 17%, compared to the state average at 1% (GOK, 1993). STs are one of the most deprived groups in Indian society, possessing little human and physical capital, often facing economic and social exclusion. Poverty is higher among ST populations. The 1998-99 BPL census identified that 80% of ST's living in Wayanad were poor. There are a number of different tribal populations living in Wayanad, including Paniyas, Kurichiar, Kurumas, Irulas, and Kattunayakkas. These groups vary in terms of socio-economic status and quality of life. For example, the Paniyas are landless, and have few assets, while the Kurichiars own land and are considered to be at a higher level of 'modernisation'.

3. Kottathara Panchayat

The total land area of Kottathara is 31.75 sq. km, composed of 5628 acres of dry land, and 1919 acres of wetland (2002-2007 Development Report, Kottathara Panchayat). The Panchayat is situated 20 kms from Kalpetta, the district headquarter. The most recent data available of the Panchayat comes from the 2001 Census. According to the census, the total number of households in Kottathara was 3360. The total population is 16, 613 (8254 males, and 8359 females), with a population density of 523/sq.km. Kottathara is a multi-religious (Hindu, Muslims, Christians, and Jains), multi-caste/tribe village. Among the more disadvantaged groups in society, the percentage of Scheduled Castes is quite low (3%), while there is a high percentage of Scheduled Tribes (28%), predominantly from the Paniya and Kurichiar tribes.

3.1 Social groups: Religion, Caste, and Tribal affiliations

The religious groups in Kottathara include Hindus (54%), Christians (23%), Muslims (22%), and Jains (1%). There are also multiple castes, which remains an important social stratification system. The official classification system in India has three categories, Scheduled Castes and Scheduled Tribes (SC/ST), OBC, and forward castes. The caste/tribe affiliations of the population in Kottathara is 31% SC/ST, 34% OBC, and 35% forward castes. The official Indian classification did not sufficiently discriminate among groups in the Panchayat, due to heterogeneity among these three broad categories. Especially, the Paniya tribal group demonstrated a much higher level of deprivation compared to other tribal groups or scheduled castes. Therefore, a new sub-groups was added to address the heterogeneity within ST. The distribution of households by social group affiliation is shown in Table 1.

Table 1: Number of households of each social group*, India's official classification (row), and modified classification system (column)

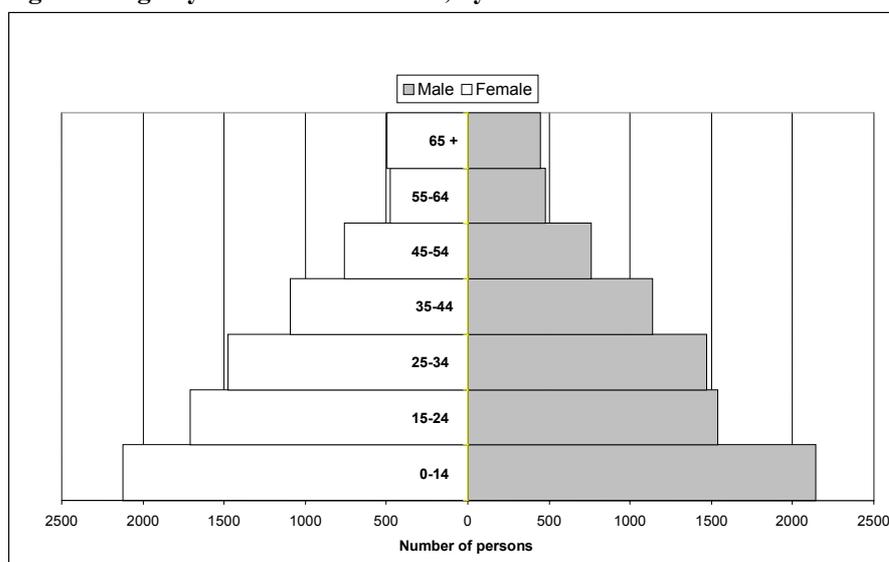
| Social group | SC/ST | OBC | FC | Total |
|--------------|-------|------|------|-------------|
| Paniya | 393 | | | 393 |
| Other ST/SC | 642 | | | 642 |
| Total | 1035 | 1149 | 1168 | 3352 |

*The caste and religion of the head of the household is taken as representing the caste and religion of the household.

3.2 Age distribution

The age distribution of the population, by sex is presented in Figure 1. Roughly the population is distributed as 65% adults of working age (15-59 years), 26% children/youth (less than 15 years), and 9% elderly (more than 60 years). There are 24 persons living over the age of 90 and 2 centenarians! In Kottathara 13% of females older than 15 years are widows.

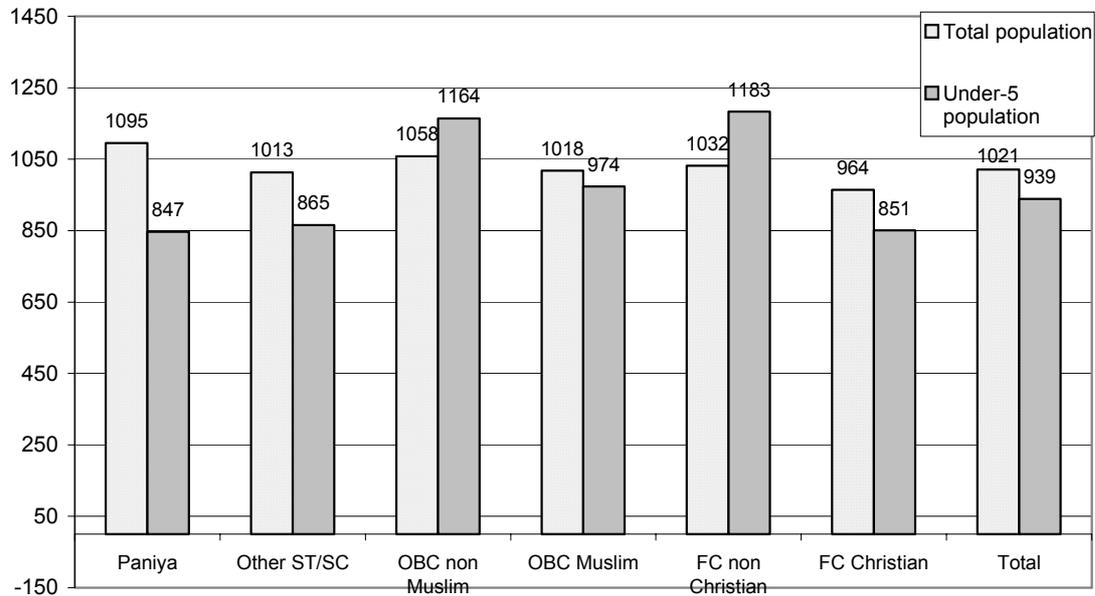
Figure 1. Age Pyramid of Kottathara, by sex



3.3 Sex ratios

There were 7,976 males, and 8,137 females in the Panchayat, which translates to 1,021 females per 1,000 males. This is less than Kerala's rate of 1,058 per 1,000, but remains well over the all India rate of 933 per 1,000 (Census of India, 2001). Among children under-five, there are 939 girls per 1,000 boys. If we examine these ratios by social groups we see two different patterns for the total population, and for children under five (Figure 2). Among the total population, the female per 1,000 males ratio is over 1,000 for all groups (with the exception of the forward caste Christians). Among the under-five population, we see much more heterogeneity across social groups. Among certain groups (OBC non-Muslims, FC non-Christians), the sex ratios are higher than 1,000, while in other groups they are well below 900 (Paniya, Other ST/SC, FC Christian).

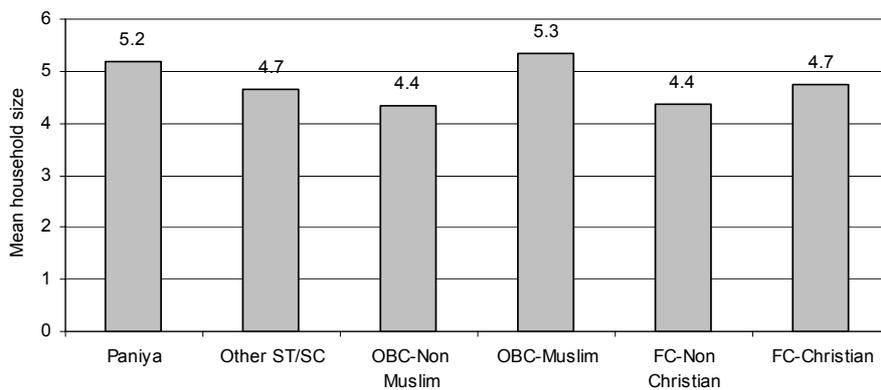
Figure 2. Females per 1000 males among total population, and under-5 population across social groups



3.4 Household Size

Comparing social groups, we see that Muslim and Paniya households, which are the poorer, have, on average, one more person living in their households compared to other groups (Figure 3). The other backward castes have similar household sizes as the forward castes. Average household size is slightly higher among male (mean = 4.9, SD=1.83) than female-headed (mean = 4.6, SD=2.09) households.

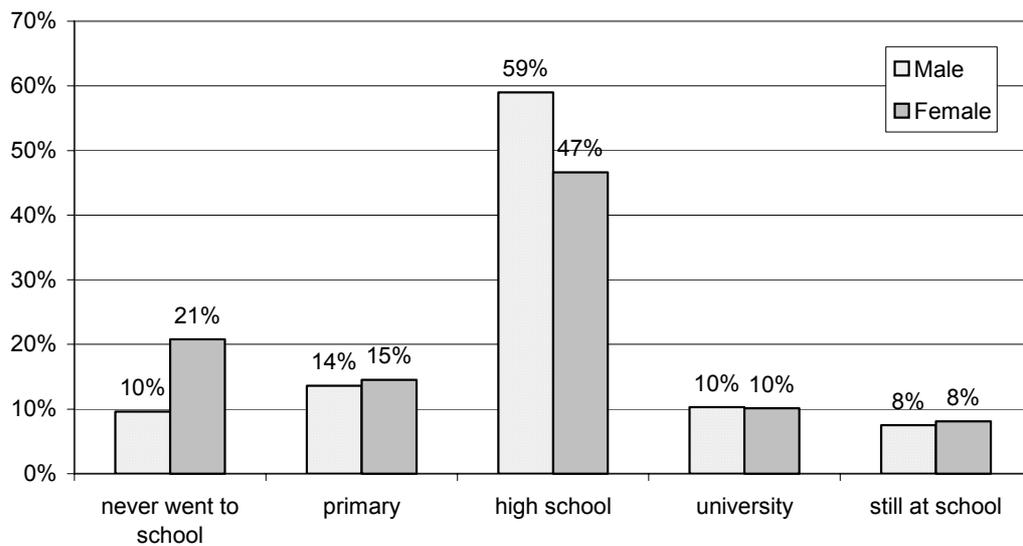
Figure 3. Average household size across social groups



3.5 Education

Over 50% of individuals living in Kottathara, over the age of 15 years, have a high school level education (achieved or not), and 15% have never been to school. If we compare education levels by gender, we see that more males have at least a high school education, while more females have never gone to school (see Figure 4). These gender disparities do not persist at the university level.

Figure 4. Highest educational level (achieved or not), among males and females (15 years and older) (%)



Educational level of individuals 15 years and over varies across gender and social group (Table 2). We see different patterns among those who have never gone to school, and among those who have gone to school. The first column shows the percent of each social group that has never been to school. The percentage of Paniya men and women that have never attended school is four times higher than the other social groups. Also, we see that a higher percentage of females compared to males have never been to school *across all social groups*.

The second, third, and fourth columns present the distribution of education levels *among those individual who have attended school but are not currently in school*. Over 60% of individuals have at least a high school education, with the exception of Paniyas. Although the level of education varies across social groups, there are no major gender differences among each social group. Also, we see that those who have a university education are concentrated among forward castes.

Table 2: Levels of education among males and females (15 years+) by social groups (%)

| Social group | Never went to school (%) | Level of education among individuals who went to school & not currently in school* | | |
|---------------------|--------------------------|--|-----------------|----------------|
| | | Primary (%) | High school (%) | University (%) |
| Paniya males | 46.1 | 48.2 | 51.0 | 0.8 |
| Paniya females | 57.0 | 49.7 | 49.4 | 0.9 |
| Other ST/SC males | 11.1 | 16.9 | 77.0 | 6.1 |
| Other ST/SC females | 30.2 | 16.4 | 76.7 | 6.9 |
| OBC males | 4.6 | 19.3 | 73.6 | 7.1 |
| OBC females | 18.5 | 24.0 | 66.4 | 9.6 |
| FC males | 1.5 | 7.4 | 69.8 | 22.8 |
| FC females | 4.0 | 13.4 | 63.1 | 23.5 |
| Total male | 9.6 | 16.4 | 71.1 | 12.5 |
| Total female | 20.8 | 20.3 | 65.5 | 14.2 |

Columns 2,3, and 4 total 100%.

3.6 Land ownership

The possession of land is an important asset, and is an indicator of wealth. The distribution of land holdings in Kottathara is presented in Figure 5. Thirty percent of the population has less than 10 cents of land, and one quarter of the population has over 100 cents. About four times more APL households own more than 100 cents of land compared to BPL households (39% versus 9%).

Possession of land by social group is presented in Table 3. From the table we see that landlessness in Kottathara is overwhelmingly a characteristic of Paniyas, and to a lesser degree OBC. We also see that ownership of land of more than 100 cents is concentrated among the forward castes.

Table 3. Household land holdings, by social group: no land versus more than 100 cents*

| | Land ownership | |
|----------------|-------------------|-----------------------------|
| | % not owning land | % owning 100 cents and more |
| Paniyas | 13.2 | 1.3 |
| Other ST/SCs | 0.9 | 22.6 |
| OBC | 2.1 | 15.4 |
| Forward castes | 1.5 | 46.1 |
| Total | 3.0 | 25.8 |

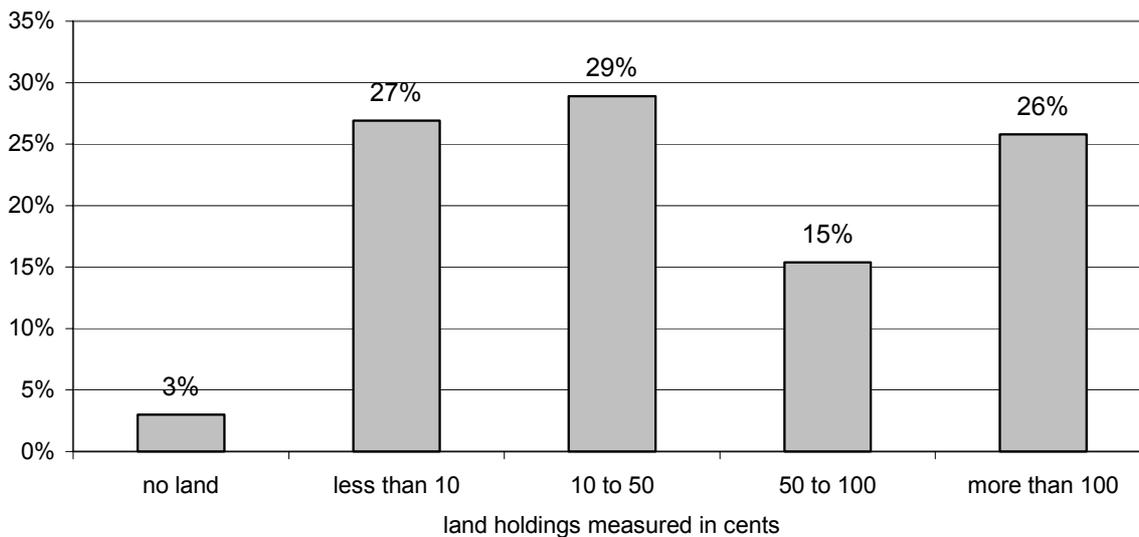


Figure 5: Household land holdings, by extent of land owned (measured in cents*)

* 1 cent is 1% of an acre

3.7 Income poverty and BPL status

Forty-three percent of households in the Panchayat are classified as BPL (Table 4). The average income of the BPL households, as estimated by the annual per capita income, is about 6,743 rupees, almost 2 thousand rupees less than that of the APL households, and almost one out of two BPL households earns an annual income per member that falls under 5,400 rupees, the State Specific Poverty Line (SSPL) (Table 4). The SSPL is estimated from household survey consumption data by the National Sample Survey Organisation (NSSO) is a defined poverty line that is fixed for inter-temporal poverty comparisons. The SSPL used here (450 per capita per month) considers price fluctuations since the last estimate provided in 1999-2000 by the Indian Planning Commission.

Table 4. Household poverty, and income among BPL and APL households

| Poverty level | Poverty status | | Average income* | Poverty incidence |
|---------------|----------------|-------------|------------------------|--------------------------|
| | Number of HH | % of HH | Rs per capita per year | % with income below SSPL |
| BPL | 1,454 | 43.4% | 6,743 | 44.7% |
| APL | 1,898 | 56.6% | 8,592 | 23.2% |
| Total | 3,352 | 100% | 7,790 | 32.5% |

*as estimated by the annual per capita household consumption.

The distribution of BPL and APL households across social groups is presented in Table 5. Compared to APL households, we see that Paniyas and other ST/SC make up more than 50% of all the BPL households. On the flip side, we see that the forward castes constitute almost 50% of the APL households.

Table 5. Social group composition of BPL and APL households

| Social group | BPL HH | APL HH | All |
|-------------------|-------------|-------------|-------------|
| Paniyas | 22.6% | 3.4% | 11.7% |
| Other SC/ST | 29.8% | 11.0% | 19.2% |
| OBC non Muslim | 11.4% | 12.9% | 12.3% |
| OBC Muslims | 18.0% | 25.1% | 22.0% |
| FC non Christians | 8.4% | 16.8% | 13.1% |
| FC Christians | 9.8% | 30.8% | 21.7% |
| Total | 100% | 100% | 100% |

3.8 Access to amenities

The majority of households get their water from either a public or private well or pipe (96%), and there is little variation across social groups (Table 6). Forty-six percent of houses are electrified, and 20% of households have a telephone in the household. We see that these amenities are primarily among forward castes; Paniyas have only a quarter of their households with electricity, and possess no phones.

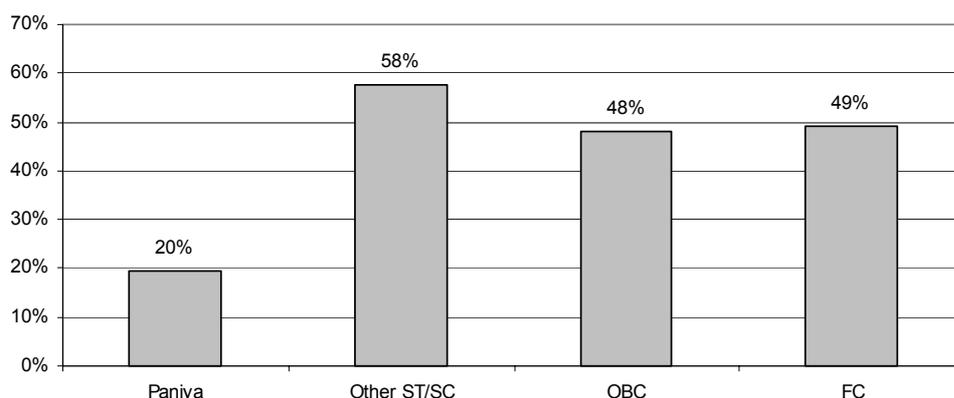
Table 6. Access to amenities among Paniya, Other ST/SC, OBC, and FC households (%)

| Amenity | | Paniyas | Other ST/SC | OBC | FC | Total |
|--------------------------|--------------------------------|---------|-------------|------|------|-------|
| Source of drinking water | Public, private well, Pipe (%) | 96.2 | 93.1 | 97.8 | 96.7 | 96.4 |
| | Pond, River (%) | 3.8 | 6.9 | 2.2 | 3.3 | 3.6 |
| House electrified (%) | | 24.2 | 53.7 | 38.8 | 57.2 | 46.4 |
| Telephone at home (%) | | 0.0 | 5.6 | 16.9 | 36.5 | 19.6 |

3.9 Social participation

Forty-seven percent of households in Kottathara have at least one household member that participates in a community organization. This rate of participation varies from a low of 20% among Paniyas to a high of almost 60% among the other ST/SC (Figure 6).

Figure 6. Participation in a community organization* among Paniya, Other ST/SC, OBC, and FC households



*defined as at least one member in the household participates in a community organization.

3.10 The Inter Group Variations- A Summary

The inter group variations are high in the Panchayat. As regards sex ratio of adults, it is over 1000 for all groups but sex ratio of under-5 is low for Paniya, other ST/SC and FC Christian. Household size is less than 5 overall but higher than 5 for Paniya and OBC-Muslim. Uneducated and lowly educated constitute a high percent among the Paniya. Among the rest there exists a social gradient with FC on top followed by OBC, Other ST/SC and Paniya at the bottom. In a largely agricultural economy, almost 60 percent of the households own less than 50 cents of land and landlessness is high among the Paniya. Poverty is high not only among the Paniya but also among Other ST/SC. Among the four groups, social participation by the Paniya is low and there is no difference across the other groups.

4. Health Status of Paniyas in Comparison with the Others

In Kottathara, in addition to cultural differences, there is a wide disparity in levels of deprivation between Paniya and the other social groups. Table 7 sums up this disparity; Paniyas have lower incomes, fewer assets, participate less in community organization, and have lower levels of education, all of these factors lead to a decrease in opportunities, including the capacity to lead healthy lives.

Table 7. Comparison of selected socio-economic characteristics of Paniya and others

| Socio-economic characteristic | Social group | |
|-------------------------------|--------------|-------|
| | Paniya | Other |
| | | |

| | | |
|---|-------|-------|
| Households classified as BPL (%) | 83.7% | 38.0% |
| Average income (Rs per capita per year) | 4,911 | 8,972 |
| Households owning no land (%) | 13.2% | 1.6% |
| Households participating in community organization* (%) | 19.6% | 50.3% |
| Individuals never attending school (%) | 52.0% | 10.1% |

*At least one member in the household participates in a community organization.

Because we know that the poorer and most deprived groups also have the poorest health, we should expect that Paniyas are the least healthy. However, as Table 8 indicates that compared to the other social groups, Paniyas do not report a worse health status, rather they report that they have better overall health, and experience less health problems! This pattern applies to both males and females, among working age adults and elderly populations (Table 9).

Table 8. Comparison of selected health indicators of Paniya and other groups for males and females (15 to 59 years)

| Indicator | Adults (15 to 59 years) | | | | | |
|---|-------------------------|------------------------|-------------------------------|---------------|------------------------|-------------------------------|
| | Females | | | Males | | |
| | Paniya (1) | Other groups (2) | Relative risk (2) / (1) | Paniya (1) | Other groups (2) | Relative risk (2) / (1) |
| Prevalence of poor perceived health (%) | 16.4 | 19.0 | 1.16 | 8.4 | 13.9 | 1.65 |
| Prevalence of disability (%) | 3.5 | 4.2 | 1.20 | 2.2 | 3.7 | 1.68 |
| Prevalence of chronic illness (%) | 11.8 | 17.9 | 1.52 | 6.3 | 11.8 | 1.87 |

The only common trait observable between the Paniya and others is the relative risk of illness between male and female. Both the groups report relatively higher prevalence of poor health, disability and chronic illness among women compared to men of the working age (Table 10). But the relative risk virtually disappears for the elderly.

Table 9. Comparison of selected health indicators of Paniya and other groups for males and females (Above 60 years)

| Indicator | Adults (Above 60 years) | | | | | |
|---|-------------------------|------------------------|-------------------------------|---------------|------------------------|-------------------------------|
| | Females | | | Males | | |
| | Paniya (1) | Other groups (2) | Relative risk (2) / (1) | Paniya (1) | Other groups (2) | Relative risk (2) / (1) |
| Prevalence of poor perceived health (%) | 63.8 | 81.1 | 1.27 | 62.9 | 75.7 | 1.20 |
| Prevalence of disability (%) | 21.3 | 24.0 | 1.13 | 20.2 | 21.2 | 1.05 |
| Prevalence of chronic illness (%) | 37.2 | 70.5 | 1.90 | 38.2 | 64.2 | 1.68 |

Table 10. Comparison of selected health indicators of Paniya and other groups for males and females

| Indicator | Adult (15 to 59 years) | | Elderly (Above 60 years) | |
|-----------|---------------------------|--------------|-----------------------------|--------------|
| | Paniya | Other groups | Paniya | Other groups |

| | M | F | RR | M | F | RR | M | F | RR | M | F | RR |
|---|-----|------|------|------|------|------|------|------|------|------|------|------|
| Prevalence of poor perceived health (%) | 8.4 | 16.4 | 1.95 | 13.9 | 19.0 | 1.37 | 62.9 | 63.8 | 1.01 | 75.7 | 81.1 | 1.07 |
| Prevalence of disability (%) | 2.2 | 3.5 | 1.59 | 3.7 | 4.2 | 1.14 | 20.2 | 21.3 | 1.05 | 21.2 | 24.0 | 1.13 |
| Prevalence of chronic illness (%) | 6.3 | 11.8 | 1.87 | 11.8 | 17.9 | 1.52 | 38.2 | 37.2 | .97 | 64.2 | 70.5 | 1.10 |

5. Health Status of Social groups (other than Paniya)

Among groups other than Paniya, among working age men and women poor perceived health is higher among the Other ST/SC and OBC compared to the forward caste. Population below the poverty line (BPL) report higher proportion with poor health ; similar are the differentials with regard to wage labourers and uneducated. The pattern is true for both male and female. However, women report higher prevalence of ill health compared to men across all categories (Table 11). There is a 40 percent higher chance of women reporting poor health than men and for some categories like wage labourers the relative risk is over 150 percent. The relative risk of prevalence of poor health observed across social groups for the working age men and women holds for the prevalence of chronic illness as well (Table 12). And the relative risk of chronic illness is also higher for women compared to men. The overall relative risk is 152 percent and for wage labourers 185 percent.

Table 11. Prevalence of poor perceived health (%) among working age men and women, by social group, and household poverty status.

| Characteristic | | FEMALE (n=) | | MALE (n=) | | Relative risk Female / Male |
|-----------------------------|-------------------|---------------|---------------|---------------|---------------|-----------------------------------|
| | | Incidence (%) | Relative risk | Incidence (%) | Relative Risk | |
| Social group | Other ST/SC | 21.8 | 1.32 | 15.2 | 1.27 | 1.43 |
| | OBC | 19.7 | 1.19 | 14.9 | 1.22 | 1.32 |
| | FC | 16.5 | - | 12.2 | - | 1.35 |
| Poverty status of household | BPL | 22.6 | 1.35 | 18.2 | 1.57 | 1.24 |
| | APL | 16.8 | - | 11.6 | - | 1.45 |
| Wage status | Wage labourer | 24.4 | 1.32 | 16.0 | 1.23 | 1.53 |
| | Non wage labourer | 18.5 | - | 13.0 | - | 1.42 |
| Education* | Uneducated | 48.1 | 3.12 | 50.4 | 3.94 | 0.95 |
| | Educated | 15.4 | - | 12.8 | - | 1.20 |
| Total | | 19.0 | | 13.9 | | 1.37 |

*Uneducated includes those who have never attended school, and educated those who have primary, high school, or university level education.

Table 12. Prevalence of chronic illness (%) among working age men and women, by social group, and household poverty status.

| Characteristic | | FEMALE | | MALE | | Relative risk Female / Male |
|-------------------|-------------|---------------|---------------|---------------|---------------|-----------------------------------|
| | | Incidence (%) | Relative risk | Incidence (%) | Relative risk | |
| Social group | Other ST/SC | 19.8 | 1.15 | 11.7 | 1.03 | 1.69 |
| | OBC | 17.6 | 1.03 | 12.3 | 1.08 | 1.43 |
| | FC | 17.1 | - | 11.4 | - | 1.50 |
| Poverty status of | BPL | 20.5 | 1.26 | 13.8 | 1.28 | 1.49 |

| | | | | | | |
|-------------|-------------------|------|------|------|------|------|
| household | APL | 16.3 | - | 10.8 | - | 1.51 |
| Wage status | Wage labourer | 24.4 | 1.36 | 13.2 | 1.11 | 1.85 |
| | Non wage labourer | 18.0 | - | 11.9 | - | 1.58 |
| Education* | Uneducated | 39.6 | 2.48 | 39.8 | 3.46 | 0.99 |
| | Educated | 16.0 | - | 11.5 | - | 1.39 |
| Total | | 17.9 | | 11.8 | | 1.52 |

It is striking that the risk of poor perceived health of other ST/SC relative to FC, which was high with regard to the working age adults, drops into insignificance with regard to the elderly, male or female. It is the same case with the risk with regard to BPL relative to APL and uneducated relative to the educated (Table 13). The pattern is exactly similar with regard to the relative risk of chronic illness (Table 14). The relative risk of poor health and chronic illness of female relative to male is also closer to 1 for all the categories.

Table 13. Prevalence of poor perceived health (%) among elderly men and women (60 years and older), by social group, and household poverty status

| Characteristic | | FEMALE | | MALE | | Relative risk Female / Male |
|-----------------------------|-------------|---------------|---------------|---------------|---------------|-----------------------------------|
| | | Incidence (%) | Relative risk | Incidence (%) | Relative risk | |
| Social group | Other ST/SC | 86.2 | 1.10 | 74.6 | 1.07 | 1.16 |
| | OBC | 82.0 | 1.04 | 85.3 | 1.23 | 0.96 |
| | FC | 78.7 | - | 69.5 | - | 1.13 |
| Poverty status of household | BPL | 84.8 | 1.07 | 82.5 | 1.13 | 1.03 |
| | APL | 79.4 | - | 72.9 | - | 1.09 |
| Education* | Uneducated | 88.5 | 1.19 | 81.6 | 1.10 | 1.08 |
| | Educated | 74.2 | - | 74.2 | - | 1.00 |
| Total | | 81.1 | - | 75.7 | - | 1.07 |

*Uneducated includes those who have never attended school, and educated those who have primary, high school, or university level education.

Table 14. Prevalence of chronic illness (%) among elderly men and women (60 years and older), by social group, and household poverty status

| Characteristic | | FEMALE | | MALE | | Relative risk Female / Male |
|-----------------------------|-------------|---------------|---------------|---------------|---------------|-----------------------------------|
| | | Incidence (%) | Relative risk | Incidence (%) | Relative risk | |
| Social group | Other ST/SC | 71.6 | 1.00 | 61.9 | 0.97 | 1.16 |
| | OBC | 68.8 | 0.96 | 66.3 | 1.04 | 1.04 |
| | FC | 71.3 | - | 63.8 | - | 1.12 |
| Poverty status of household | BPL | 70.0 | 0.99 | 69.0 | 1.11 | 1.01 |
| | APL | 70.7 | - | 62.3 | - | 1.13 |
| Education* | Uneducated | 72.0 | 1.04 | 71.1 | 1.14 | 1.01 |
| | Educated | 69.1 | - | 62.6 | - | 1.10 |
| Total | | 70.5 | - | 64.2 | - | 1.10 |

*Uneducated includes those who have never attended school, and educated those who have primary, high school, or university level education.

6. Environmental determinants of health by social groups

Ninety-six percent of households in the Panchayat have access to a drinking water from either a public or private well, or pipe, with no difference between BPL and APL households. Close to 90% of households have a latrine inside their house; 21% of BPL households, and only 5% of APL households have no latrine. And just over 50% of households reported that their house is in good or very good condition. BPL households reported their house to be in poor condition almost two times more than APL households (60% and 34% respectively). Households that do not have access to a safe drinking water source are predominantly from other ST/SC, and almost three quarters of Paniyas perceive that their home is in poor or very poor condition, and 50% of Paniyas have no latrine in their household (Table 15).

Table 15. Household environmental health determinants among Paniya, Other ST/SC, OBC, and FC households (%)

| | | Paniyas | Other ST/SC | OBC | FC | Total |
|--------------------------------------|--------------------------------|---------|-------------|------|------|-------|
| Source of drinking water | Public, private well, Pipe (%) | 96.2 | 93.1 | 97.8 | 96.7 | 96.4 |
| | Pond, River (%) | 3.8 | 6.9 | 2.2 | 3.3 | 3.6 |
| No latrine in the house (%) | | 52.2 | 9.2 | 6.3 | 4.0 | 11.4 |
| Perceived poor housing condition (%) | | 73.8 | 53.9 | 44.2 | 35.4 | 46.5 |

Commentaire [HH1] : Table 10 needs to have a last column for all households.

6.1 Housing conditions and health outcomes (excluding Paniyas)

Only housing conditions are examined by health status, because the number of households without access to safe drinking water and sanitation is too small to analyse distribution patterns. Table 16 shows that both men and women whose houses were perceived to be of poor condition reported poorer perceived health and a higher prevalence of chronic illness compared to individuals from houses in good condition. This pattern applies to both working age adults and elderly men and women (Tables 16 and 17).

Table 16. Housing condition and poor health among working age adults and elderly

| Age group | Housing condition | Female | | | Male | | | Female / Male Relative risk |
|-------------|-------------------|--------|---------------|---------------|--------|---------------|---------------|-----------------------------|
| | | Number | % poor health | Relative risk | Number | % poor health | Relative risk | |
| Working age | Poor | 1,841 | 23.0 | 1.42 | 1,798 | 18.4 | 1.67 | 1.25& |
| | Good | 2,750 | 16.2 | | 2,776 | 11.0 | | 1.47& |
| Elderly | Poor | 279 | 83.5 | 1.05 | 223 | 86.5 | 1.26 | 0.97& |
| | Good | 366 | 79.2 | | 357 | 68.9 | | 1.15& |

Note: Housing condition was self-reported.

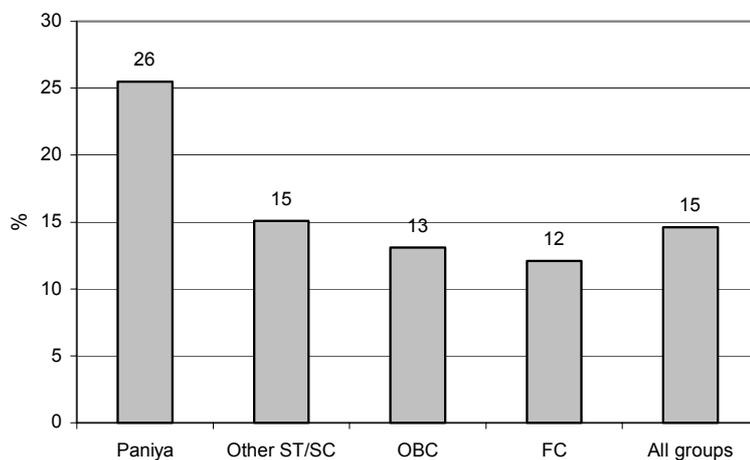
Table 17. Housing condition and chronic illness among working age adults and elderly

| Age group | Housing condition | Female | | | Male | | | Female / Male Relative risk |
|-------------|-------------------|--------|-------------------|---------------|--------|-------------------|---------------|-----------------------------|
| | | Number | % chronic illness | Relative risk | Number | % chronic illness | Relative risk | |
| Working age | Poor | 1,841 | 21.5 | 1.39 | 1,798 | 14.2 | 1.38 | 1.51& |
| | Good | 2,750 | 15.5 | - | 2,776 | 10.3 | - | 1.50& |
| Elderly | Poor | 279 | 77.3 | 1.18 | 223 | 73.1 | 1.25 | 1.06& |
| | Good | 366 | 65.3 | - | 357 | 58.7 | - | 1.11& |

7. Household health and hygienic practices by social groups

Households were asked to estimate the frequency in which they practiced each of the following habits, washing their hands before having food, using a latrine, and boiling drinking water and/or avoiding drinking water that was not boiled. Those who practiced a habit on a 'regular' basis include households who responded either 'systematically/always', or 'most of the time'. Hand washing and use of latrine was regularly practiced on an almost universal basis, and there was little variation across social groups. Specifically, 99% of households reported that they regularly washed their hands before having meals, and *among the households possessing a latrine*, 99% reported regular use of latrines. Consuming only boiled drinking water was regularly done by 85% of households. Twenty-one percent of BPL households compared to 11% of APL households did not boil their water regularly. Among social groups, we see that Paniyas adopt this practice less regularly compared to other social groups by a factor of two (Figure 7).

Figure 7. Percentage of households drinking boiled water by social group



7.1 Drinking boiled water and poor health

The practice of drinking boiled water regularly has a beneficial effect on the health status of adults of working age. There is a 50% higher risk of reporting poor health status by those not drinking boiled water compared to those who regularly drink boiled water. This

does not vary between male and female. However, such a pattern is completely absent in the case of elderly (above 60 years) (Table 18).

The association between drinking boiled water and perceived low poor health is not to be seen in the case of chronic illness. The relative risk is close to one for working age adults as well as elderly (Table 19).

Table 18. Drinking boiled water and poor health among working age adults and elderly

| Age group | Drinking boiled water | Female | | | Male | | | Female / Male Relative risk |
|-------------|-----------------------|--------|---------------|---------------|--------|---------------|---------------|-----------------------------|
| | | Number | % poor health | Relative risk | Number | % poor health | Relative risk | |
| Working age | Not regular | 612 | 26.7 | 1.49 | 615 | 19.7 | 1.52 | 1.36 |
| | Regular | 3979 | 17.9 | - | 3959 | 13.0 | - | 1.38 |
| Elderly | Not regular | 85 | 77.6 | 0.95 | 75 | 72.0 | 0.95 | 1.08 |
| | Regular | 560 | 81.6 | - | 505 | 76.2 | - | 1.07 |

Table 19. Drinking boiled water and chronic illness among working age adults and elderly

| Age group | Drinking boiled water | Female | | | Male | | | Female / Male Relative risk |
|-------------|-----------------------|--------|-------------------|---------------|--------|-------------------|---------------|-----------------------------|
| | | Number | % chronic illness | Relative risk | Number | % chronic illness | Relative risk | |
| Working age | Not regular | 612 | 19.3 | 1.09 | 615 | 13.2 | 1.14 | 1.46 |
| | Regular | 3979 | 17.7 | - | 3959 | 11.6 | - | 1.53 |
| Elderly | Not regular | 85 | 70.6 | 1.00 | 75 | 58.7 | 0.90 | 1.20 |
| | Regular | 560 | 70.5 | - | 505 | 65.1 | - | 1.08 |

7.2 Male smoking and health outcomes

This section reports only on the habit of smoking cigarettes, and does not include other related habits, such as chewing pan. In Kottathara, smoking is an almost exclusive male habit. Among adults over the age of 15 years, only 21 females reported that they had ever smoked, compared to 1,689 males. Here we examine the percentage of men who have ever smoked, and the percentage of men who have ever smoked and have since quit. The prevalence of men who have ever smoked is higher among BPL than APL in the working age category but lower among the elderly. The prevalence of men smokers who have quit is lower among BPL than APL (Table 20).

Table 20. Smoking habits among working age males (15 to 59 years) and elderly males (60 years+) by poverty status

| Age group | Poverty Status | Men who have ever smoked | | Men smokers who have quit\$ | |
|-------------|----------------|--------------------------|---------------|-----------------------------|---------------|
| | | Prevalence (%) | Relative risk | Prevalence (%) | Relative risk |
| Working age | BPL | 31.2 | 1.21 | 8.4 | 0.57 |
| | APL | 25.7 | | 14.7 | |
| Elderly | BPL | 8.4 | 0.57 | 18.6 | 0.57 |
| | APL | 14.7 | | 32.3 | |

Working age men who have ever smoked reported they were in poorer health more than two times, and almost one and a half times more chronic illness than men who have never smoked (Tables 21 and 22). Elderly men who smoked reported poorer health and more chronic illness than those who never smoked, although the differences are not as wide as they are for working age men.

Table 21 Smoking and poor health among the working age and elderly

| Age group | Ever smoked | Number | % poor health | Relative risk |
|-------------|-------------|--------|---------------|---------------|
| Working age | No | 3293 | 10.2 | - |
| | Yes | 1281 | 23.5 | 2.3 |
| Elderly | No | 353 | 72.5 | - |
| | Yes | 227 | 80.6 | 1.11 |

Table 22 Smoking and chronic illness among the working age and elderly

| Age group | Ever smoked | Number | % chronic illness | Relative risk |
|-------------|-------------|--------|-------------------|---------------|
| Working age | No | 3293 | 18.9 | - |
| | Yes | 1281 | 28.6 | 1.51 |
| Elderly | No | 353 | 62.8 | - |
| | Yes | 227 | 66.5 | 1.06 |

8. Conclusion

The Panchayat studied is a multi caste and multi tribe society and the differences among them and within the tribal group are wide. The expected poverty- ill health relationship does not show up when we compare the extremely deprived group- Paniya- with the rest

of the population. Obviously, there is a cultural divide and the perception of the health of the Paniya is different from the others. If we had included the Paniya in the broad group called Scheduled Tribe the relationship would have got completely masked.

Taking the population (excluding Paniya) the poverty- ill health relationship comes out strongly. The households with poor housing condition, less education, with wage labour as occupation show poorer health status compared to the reference groups. Further, hygiene practices and personal habits- smoking, drinking water not boiled- exacerbate the poverty effects.