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Morbidity Differentials in Rural Karnataka

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Introduction

India is a signatory to the Alma Ata declaration and has committed herself to achieving "Health for All by the Year 2000". Since then, a lot of planning, effort and public expenditure has been devoted to improving the health of the people both in rural and urban areas of the country. Further, the spread and accessibility of modern medicines has also improved substantially across the country. However, inspite of these efforts, India is one of the many developing countries, which have high levels of morbidity. The morbidity of different population groups may have different implications on the national population. For example, morbidity among adults may affect national income while the growth and development of children depends on the incidence and type of illness that they may be subjected to. Further, the morbidity pattern among the aged is now of special interest especially in developing countries like India where their proportion has been increasing due to declines in fertility and mortality levels.

Understanding the patterns of morbidity among different age, sex and socioeconomic groups thus assumes importance as they can help planners and policy makers to plan and implement appropriate health programmes so as to reduce morbidity. Against this background, the present paper attempts to study morbidity differentials by selected characteristics such as age, sex, religion/caste, household size, type of house, and landholding in rural areas of Karnataka State.

Sample and Methodology

The present study was carried out alongside an operations research study of spacing methods undertaken by the Population Research Centre, Dharwad, during June-September 1994. In this survey, based on the performance of spacing methods, two Primary Health Centres (PHCs) were chosen randomly, and from these PHCs, 20 villages were selected using the probability proportion to size

method (the details of the sample design have been reported earlier [1]). With the help of household registers maintained by either the health worker or Anganwadi worker of the village, a total of 1,600 households were, selected from the selected villages by systematic random sampling. A household schedule was administered to the head of each selected household to obtain particulars about the household such as religion/caste, type of house, total landholding, total landholding, total land cultivated etc. and about its individual members such as age, sex, and marital status. The same household schedule was used to elicit information about the morbidity status of each member of the household by asking a question to the head of the household: "During the last one month did you or any of your family members visit a hospital, a clinic or call on a doctor for treatment of any illness"? If the response to the question was "Yes", information about the nature of the illness and its duration in respect of each sick person was recorded. This data forms the basis for the present study.

The study was able to successfully cover 1,427 of the 1,600 selected households. A total of 837 persons in these households reported an illness during a recall period of one month. The commonly used index, `period prevalence rate' defined as the proportion who reported to be sick at any time during the reference period irrespective of the onset of the illness was derived to study morbidity differentials. It must be noted though that since the present study was carried out along with another survey as mentioned earlier, data on many variables such as source and storage of drinking water, disposal of waste water and garbage, nutritional status and so on were not collected. Such data would have provided a better understanding of morbidity variations and determinants.

Quality of data

A simple way of assessing the quality of data is to examine the pattern of reporting an illness by the age of the informant. If this is confined to only a few age groups for example the younger and not the older age groups due to recall lapse, it would give poor quality data. In order to examine this aspect, the prevalence of reported illness by age of the informant was computed and has been presented in Table 1.

Table 1: Period prevalence rate by age and sex of informant

Age of Information	Period prevalence rate				
	Infant	**1-14**	**15-59**	**60+**	**Total**
Age (years)					
20-29	11.1	23.3	18.7	64.3	21.5
30-44	19.1	7.0	13.1	45.6	11.2
45-49	9.8	13.3	11.0	82.9	12.9
60-74	9.7	9.7	12.7	6.9	10.6
75+	--	9.1	11.7	4.5	9.3
Sex					
Male	10.7	9.7	11.3	23.6	11.4
Female	14.3	10.7	13.5	20.9	13.0
Total	12.3	10.2	12.4	22.0	12.2

As can be seen from Table 1, the highest prevalence of illness (21.5 per cent) was found when the informants were less than 30 years of age. However, more importantly, the reported prevalence of illness did not differ much with an increase in the age of the informant. Thus, the prevalence of illness reported by informants in the age groups 30-44 and 60-74 years was almost the same (about 11 per cent) indicating that the probing measures adopted during the survey had helped reduce the under-reporting of morbidity by older informants, and suggesting that the quality of data relating to the incidence of morbidity was almost complete.

The sex of the informant is another way of examining the quality of morbidity data. In a male dominated society like that of India, there is room to suspect that a male informant would tend to not report or under-report an illness occurring to a female family member, and that this would be more likely if the illness was gynecological. In order to examine this assumption, the reported prevalence of illness was computed by the sex of the informant. The findings presented in Table 2 indicate that female informants reported higher morbidity (13.0 per cent) than male informants (11.3 per cent). Although, under-reporting cannot be eliminated completely, the reporting of illnesses seems to be relatively more correct due to the presence of more female informants in the study sample.

Table 2: Period prevalence rates of morbidity by age and sex

Age (years)	Males	Females	All
< 1	10.3	14.3	12.3
1-4	18.2	16.1	17.2
5-14	7.8	7.3	7.5
15-34	8.8	12.1	10.4
35-49	13.6	15.8	14.7
50-59	16.6	17.5	17.0
60+	26.6	18.4	22.0
Total	11.8	12.5	12.2

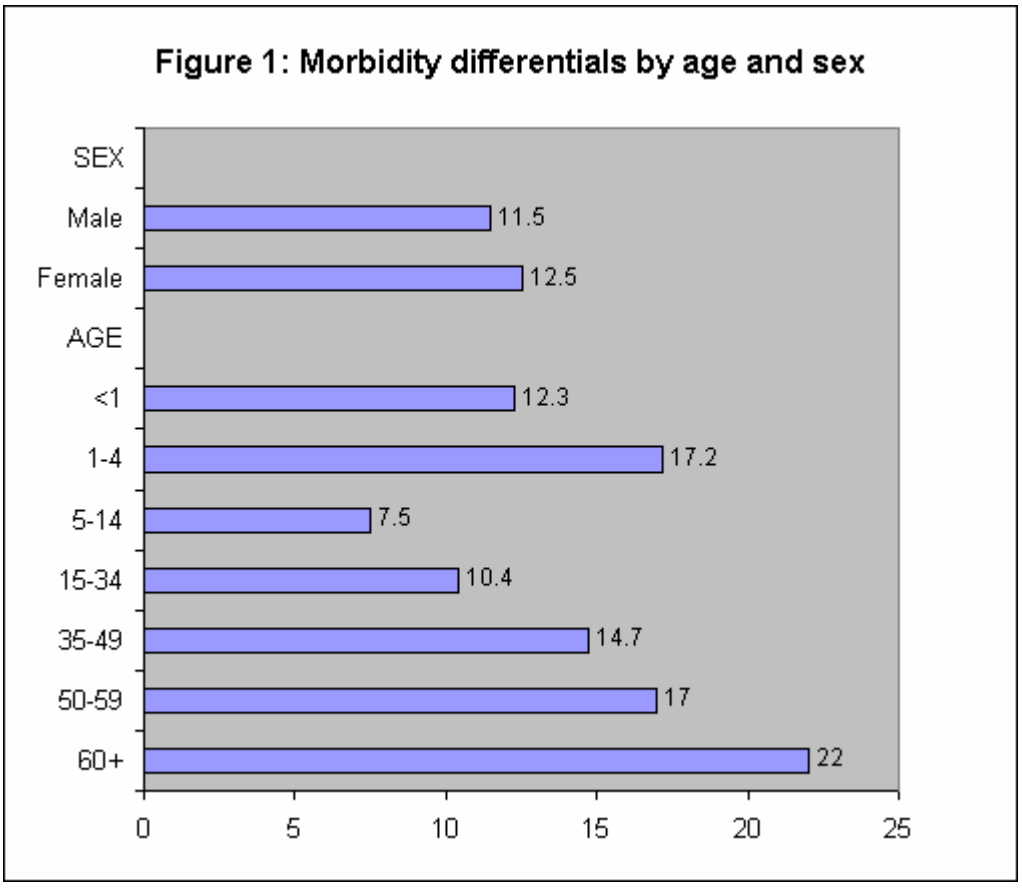
Before discussing morbidity differentials, it was thought worthwhile to compare the morbidity rate derived through our survey with that reported by other workers. It may be noted though that unlike fertility or mortality measures, the morbidity measure derived from two surveys are not comparable mainly due to differences in the definition of morbidity and reference periods: thus, the inclusion or exclusion of certain illnesses or the length of the recall period can influence morbidity rates. We have tried to compare the period prevalence rate computed for the present study with that derived from surveys which have used a similar definition and reference period.

The period prevalence rate in the 20 villages in Dharwad district of Karnataka surveyed by us worked out to 12.2 per cent per month. This compared well with an estimate of 11.7 per cent per month obtained by a conducted by NCAER [2] in rural areas of Karnataka. Another study, [3] also undertaken in rural Karnataka, reported a period prevalence rate of 15 per cent per month which is about three per cent higher that our estimate. These results suggest that our estimate is generally acceptable.

Results and Discussion

Morbidity differentials by age and sex

Table 2 and Figure 1 present the morbidity differentials by age and sex. The overall prevalence of morbidity was 12.2 per cent; it was highest (22 per cent) among individuals aged 60 or more years and the least (7.5 per cent) among young persons (5-14 years). Higher morbidity levels among younger individuals, low among adults and an increase in morbidity as age advances revealed a J-shaped relationship between age and morbidity. This finding is consistent with that of other Studies. [3, 4]



A desegregated analysis by sex showed females to have experienced higher morbidity (12.5 per cent) than males (11.8 per cent). This was observed among

infants and in the 15-49 age groups pointing to high reproductive morbidity among females.

Morbidity differentials by household size

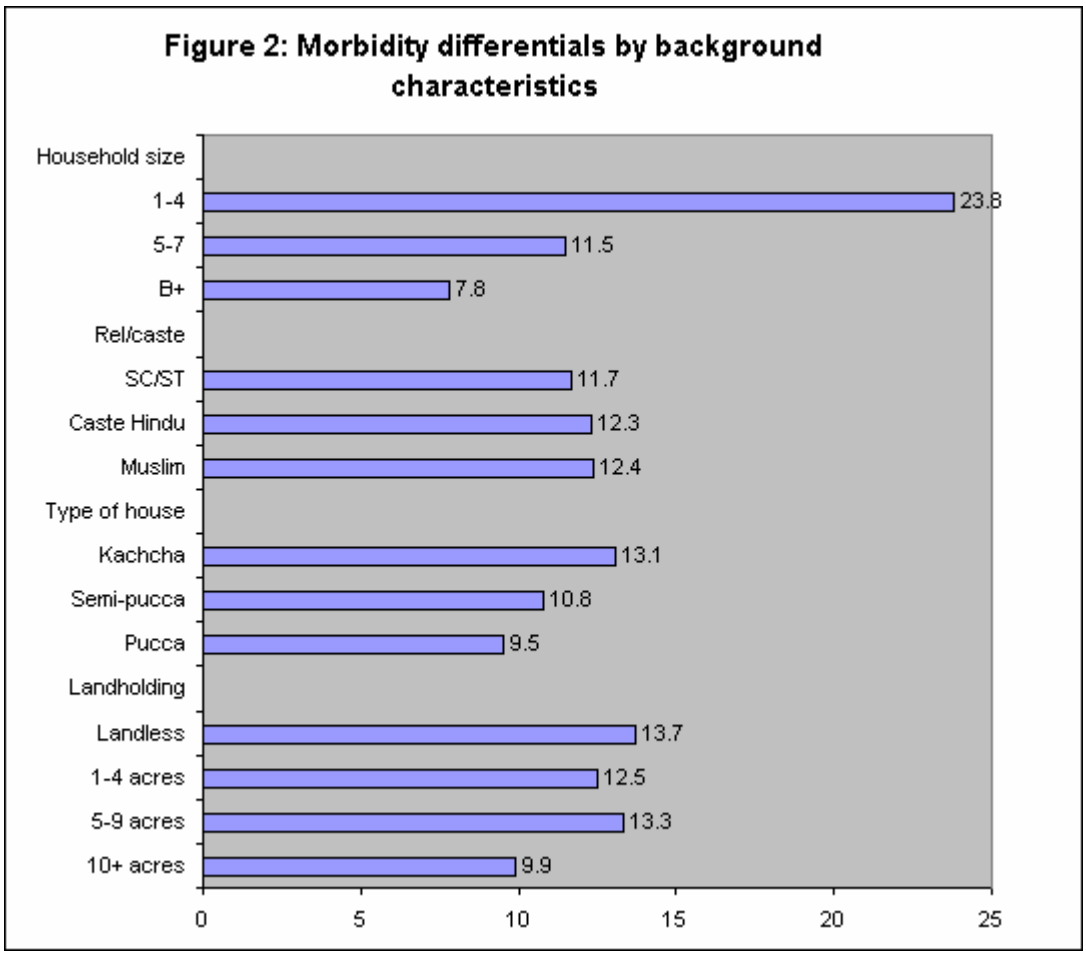
An increase in household size is expected to be associated with an increase in the incidence of morbidity due to transfer of disease agents from person to person. The data presented in Table 3 and Figure 2, however, show the reverse trend.

One reason for this could be that small-sized households are an indication of nuclear families consisting of the father, mother and small children. Since children are more susceptible to disease, the incidence of morbidity could be higher in such households. It is also possible that since information about the morbidity status of all the members in the household was asked of the head of the household, morbidity incidences of a minor nature or of lesser duration which may be higher in large-sized households as compared to small-sized households were missed out.

Table 3: Period prevalence rate by household size, religion/caste, type of house and cultivated landholding

Age of informant	**Period prevalence rate**				
	Infant	**1-14**	**15-59**	**60+**	**Total**
Household size	46.7	32.1	19.2	36.3	23.8
1-4 persons	11.1	9.9	10.2	25.8	11.6
5-7 persons	6.7	4.9	9.1	10.6	7.8
8+ persons					
Religion/caste	7.1	8.8	12.3	30.7	11.7
SC/ST	13.3	10.9	12.1	21.0	12.3
Caste Hindu	18.8	8.2	14.7	13.2	12.4
Muslim					
Type of house	10.8	10.6	13.7	25.6	13.1
Kachcha	14.1	9.7	10.4	17.3	10.8
Semi-pucca	20.0	6.8	9.8	22.2	9.5
Pucca					
Landholding	15.4	10.1	14.9	27.4	13.7

Landless	9.1	10.2	13.5	20.2	12.5
1-4 acres	6.7	12.8	12.6	23.4	13.3
5-9 acres	15.6	9.0	9.2	18.1	9.9
10+ acres					
Total	12.3	10.2	12.4	22.0	12.2



Religion/Caste and morbidity

An examination of the data in Table 3 also indicated the highest level of morbidity (12.4 per cent) among Muslims and the least (11.7 per cent) among scheduled castes and scheduled tribes (SC/STs). Higher morbidity levels among

the former could partly be because of poverty and low levels of cleanliness and literacy.

The Muslim respondents also reported higher morbidity among infants as compared to caste Hindus and SC/STs. However, the latter reported the highest prevalence of illness among older individuals aged 60 years and above. Thee prevalence of morbidity did not seem to differ much among children aged 1-14 years and persons aged 15-59 years belonging to different religion/caste groups.

Type of house, cultivated landholding and morbidity

The type of dwelling in which the person lives also has a bearing on the incidence of morbidity: poor quality of housing is an indication of less hygienic living conditions and hence greater chances of falling sick. The data presented in Table 3 conform this hypothesis in that the prevalence of morbidity for those living in kachcha (makeshift) houses was highest (13.1 per cent) and that of those living in pucca (permanent) houses was the least (9.5 per cent).

Table 3 also indicates that reported morbidity was highest (13.7 per cent) among the landless and lowest (9.9 per cent) among those having 10 or more acres of cultivated land. The morbidity rate was 12.5 per cent for those who held 1-4 acres of land and 13.3 per cent for those holding 5-9 acres of land. The data by and large revealed that morbidity tended to decrease with an increase in the size of cultivated landholding. This may partly be explained by the fact that economically better-off people have better purchasing power and greater contact with urban centres and hence would be able better take care of their health.

Conclusion

The results of this study show that children below four years of age and the elderly (60 + years of age) have higher levels of morbidity as compared to other age groups. The analysis also revealed higher morbidity among females than males, and indicated that poor, landless people, Muslims, and those living in kachcha houses had higher levels of morbidity as compared to those who were better off, those who owned cultivated land, caste Hindu or SC/STs, and members of pucca households respectively. Educating rural people about personal hygiene through health education and improving the services in government hospitals would help them to better utilise the available health

services which, in turn, would help reduce morbidity as also the observed morbidity differentials.

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