



## Development and Morbidity Prevalence in Jharkhand Special Reference to Tribal Population

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*Morbidity or infirmity has been an important determinant of human development. It affects the normal functioning and attainments of a human being affecting the capability and performance of a person in varying degrees. Sometimes it paralyses from doing any activity. The problem is generally perceived more in the underdeveloped regions due to several factors, especially in the tribal dwelling regions. Paradoxically there have been minuscule empirical studies on the subject and mainly focussed by the anthropological approaches. Therefore, this study has been a modest endeavour to find out the picture in a tribal region the State of Jharkhand- in terms of morbidity types and patterns with various measures. It has also been tried to highlight some associated factors and inter-relations. The paper has been organised in such a way that one goes from a general pattern to the micro level. It has different sub-sections. The paper deals with the conceptual aspects of this paper including objectives, data base, methods and sampling, and scope and limitations, and, Morbidity Profile, Morbidity Types, Regional Pattern of Morbidity, Other Measures of Morbidity, Type and Nature of Disease Prevalence with Location and Availability of PHC, Development Indicators and Morbidity and conclusions with and some suggestions on measure of preventive and promotion and mitigation. The database used for this study is primarily the data obtained from household survey supported by some secondary sources like NSSS, NCEAR, NFHS and Census of India. The morbidity has been measured using Morbidity Prevalence Rates, Proportion of Ailing Population and Disease Attack Rates.*

**Keywords : Morbidity, Tribal Health, Jharkhand**

### Introduction

The commonly used indicators of health are mortality, morbidity and nutritional status, which are not suitable measures in developing countries and especially in tribal areas where people with disability and illness have to engage themselves in work so as to run their family lives. Therefore, morbidity also is an indirect determinant of final goal of human development affecting the normal life and attainments. In health measurement, morbidity has not been examined in depth insofar as the tribes are concerned. Recently National Sample Survey (NSS) and National Family Health Survey (NFHS) have initiated activities to measure the extent of illness in India. But there is hardly any study at examining the morbidity types and patterns among the tribe at disaggregated micro level. This study attempts to find out the morbidity status among the tribal people of Jharkhand. The paper deals with the morbidity patterns of the tribes in the study area. It also incorporates age and sex wise variation of illness and impairments. The classification of diseases adopted for this study is based on the International Classification of Diseases (ICD) – 10<sup>th</sup> Revision<sup>1</sup> proposed by the WHO.

The study is mainly based on primary data collected from the eight sample villages of four blocks of two districts by household survey on 30 days recall and reporting basis. The basis of the selection of districts, blocks, villages, communities and households are well sampled and taking into

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consideration the location, availability of health facilities and other socio-economic parameters. However, secondary and tertiary data have also been used for sampling purpose and supplementary analysis. The main sources are the Census of India, the NFHS-2, NSSO, and NCAER. The methods followed in the study are the Proportion of Ailing Population (PAP), Disease Prevalence Rates or Morbidity Prevalence Rate (MPR) and Disease Attack Rate (DAR) in order to assess the effect dimension and magnitude of burden of episodes or spells of illness. Nature of Disease Prevalence with by background characteristics of development indicators including location and availability of PHC have also been analysed to study the behaviour or morbidity occurrence.

## Methods And Sampling

A total of 1983 persons from various age and sex groups and socio-economic backgrounds were taken for this study. The selection of district, blocks, villages and communities were done using stratified purposive random sampling method. At the first stage, Principal Component Analysis (PCA)<sup>2</sup> has been used to rank the districts and blocks on the basis of development index drawing from various socio-economic development indicators. And from the selected blocks one village with Primary Health Centre (PHC) or close to PHC and one remote village or away from a PHC were selected. Lastly, the households were selected in such a way that every community has a significant representation from a sample village. At this stage the households were chosen from all sections (relatively poorest to the richest in the village for the true representation). The following study units were selected in this process :

Nature of District	District/Block	Village with/Close to PHC	Remote Village
Relatively Developed District	Gumla		
Relatively Developed Block	Kurdeg	Kurdeg	Dharhi
Relatively Underdeveloped Block	Simdega	Bara Barpani	Muriya
Relatively Developed District	Dumka		
Relatively Developed Block	Gopitandari	Garijapani	Musna
Relatively Underdeveloped Block	Misalia	Ranga	Phalan

### Distribution Of Sample Village

The enquiry about the morbidity has been done on the basis of reporting by the respondents and symptoms observed and not on the basis of clinical tests or verification. Morbidity patterns have been worked out through the **Morbidity Prevalence Rates (MPR) or Disease Prevalence Rates** (short duration with 30 days reference period).<sup>3</sup> The formula for the calculation of the Disease Prevalence Rate<sup>4</sup> is:

$$\text{MPR} = \frac{\text{Total Number of Episodes of Illness}}{\text{Total Population}} \times 1000$$

The prevalence rate may exceed the total number of population because one person may be attacked by multiple diseases or multiple spells of attack by same diseases during the reference period or 30 days preceding the date of survey.

It may also be taken as a measure of magnitude of impact among populations measured by **Proportion of Ailing Population (PAP)** where estimated proportion of ailing persons (PAP) per

thousand population<sup>5</sup> or proportion of persons affected by illness may be seen. PAP may be expressed as<sup>6</sup>:

$$\text{PAP} = \frac{\text{Total Number of Persons under Illness}}{\text{Total Population}} \times 1000$$

PAP measures the dimension of impact in terms of population affected whereas MPR reflects the number of spells per thousand populations where the persons without any illness are also taken as denominator. Therefore one more measure has been taken to reflect the multiplicity/multiple attack of diseases on same person, where more than 100 per cent is a multiplicity/multiple attack of diseases termed as **the Disease Attack Rate (DAR)** and has been calculated as below:

$$\text{DAR} = \frac{\text{Total Number of Episodes of Illness}}{\text{Total Number of Persons under Illness}} \times 100$$

## Scope And Limitations

There are some limitations in this study. For instance all cases are not clinically certified or tested and are purely based on lay diagnosis reporting on 30 days recall basis and the gap between medically verified illness and lay diagnosis could be vital. However, the disease prevalence rates of tribes may provide some insights into their health conditions. The third limitation of this study is that the disease prevalence rates are not comparable with those of the NSS 52<sup>nd</sup> Round and National **Council of Applied Economic Research (NCAER)** studies. The NSS 52<sup>nd</sup> Round uses the PAP (Proportion of Ailing Persons Per thousand Population) rather than using the Prevalence Rate and that too for the reference period of 15 days.<sup>7</sup> The NCAER has taken two categories – Short Duration Morbidity Prevalence Rate Per thousand Population (MPR-SD) with a reference period of 30 days and Point Prevalence Rate of Major Morbidity per lakh population (PPR-MM) at the time of survey.<sup>8</sup> The present study considers all the old and new episodes of diseases occurring within the last 30 days of survey. The morbidity data given by the NFHS-2 also cannot be compared, as those are point prevalence rates and cannot be adjusted.<sup>9</sup> The data unavailability for new state is also a constraint like districtwise IMR of 1991 has been used because of this reason. The study, however, discusses about such long duration diseases along with the other short duration ailments and gives an overall morbidity types, prevalence and patterns for the region. The village level analysis is very restricted and community level study could not be presented due to limitations. Since this study is for Jharkhand taking samples, the name ‘Jharkhand’ has been used for pooled data.

## Morbidity Profile

The population in the region appear to be suffering from various infectious diseases like malaria, dysentery, diarrhoea, tuberculosis, and a number of nutrition deficiency diseases such as leprosy, anaemia, goitre, blindness, polio, etc. These diseases are responsible for high Infant Mortality Rates, spontaneous termination of pregnancy, various disabilities, preventable deaths and low efficiency and attainments of life. These ailments are not necessarily related to bio-medical factors but have been the results of various socio-economic factors, like poverty, illiteracy, early marriage, early motherhood, lack of safe motherhood, weak marriage institutions<sup>10</sup>, undernutrition, lack of preventive and curative health care facilities, physical, social or economic inaccessibility to medical facilities, lack of health awareness and education.

Though not fully comparable with the NSS 52<sup>nd</sup> Round estimates, Morbidity Prevalence Rates (MPR) estimated by this study is much higher than that of estimated by the NSSO 52<sup>nd</sup> Round,<sup>11</sup>

despite assumed underreporting in the rural tribal areas. Similarly the short duration morbidity prevalence rate comes to be much higher in Jharkhand than among the Scheduled Tribes of India.<sup>12</sup> The PAP data of the study area is also extremely high (Table 4) compared to the adjusted data of PAP for rural areas (108, 114 and 110 per thousand male female and total population respectively) given by the NSS 52<sup>nd</sup> Round.

## Morbidity Types

In the entire region, diseases caused by viral infection have been dominant with little variation. The only surprising observation has come from a village – Dhorhi - where it was found to be insignificant during the survey. However, the enquiry revealed that the village gets infected significantly by viral diseases during the winter season. This may be due to water logging and unchecked growth of luxuriant bushes and hill vegetations after the rainy season. The highest disease prevalence was on account of malaria with 141 per thousand population, where the total

Table 1

Jharkhand: Prevalence of Diseases per thousand Population

Diseases	Age Groups														
	0-4			5-14			15-59			60+			Total		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
I. I. & P. Diseases	50	22	37	8	20	14	30	31	30	70	26	48	30	27	28
II. Viral Infection	231	129	187	117	154	136	149	131	140	141	158	150	150	139	145
III. Respiratory	8	32	19	8	-	4	14	7	11	-	39	20	11	10	11
IV. Dig. & Int. Inf.	-	22	9	4	-	2	23	22	22	56	13	34	18	15	17
V. CNS	-	-	-	8	-	4	2	11	6	14	-	7	4	6	5
VI. Mal., Def. & Imm.	-	-	-	-	-	-	5	7	6	14	-	7	4	4	4
VII. Blood	-	-	-	4	12	8	2	7	4	-	13	7	2	8	5
VIII. Genito-Urinary	-	11	5	4	4	4	11	2	6	28	13	20	9	4	7
IX. Preg & CB	-	-	-	-	-	-	-	20	-	-	-	-	11	-	-
X. Muscular-Skeletal	-	-	-	-	-	-	9	11	10	0	26	14	5	8	7
XI. Visual	-	-	-	4	8	6	14	4	9	14	39	27	10	7	9
XII. Hearing	-	-	-	-	-	-	2	2	2	28	13	20	3	2	3
XIII. Locomotor	-	-	-	8	4	6	2	4	3	14	-	7	3	4	4
XIV. Speech	-	-	-	12	-	6	4	-	2	-	-	-	5	-	3
XV. Neoplasm	-	11	5	-	-	-	-	-	-	-	-	-	1	1	1
XVI. Skin	8	11	9	-	4	2	18	4	11	-	13	7	11	5	8
XVII. Acci & EI	8	11	9	12	8	10	16	11	13	14	26	20	14	11	13
XVIII. Senility	-	-	-	-	-	-	-	-	-	14	39	27	1	3	2
XIX. Cardio	-	-	-	-	-	-	2	-	1	-	-	-	1	-	1
XX. Other	25	11	19	28	-	14	40	41	41	56	53	54	37	29	33
XXI. Other Unclass.	17	65	37	12	28	20	19	14	17	-	-	-	16	22	19
<b>Total</b>	<b>347</b>	<b>323</b>	<b>336</b>	<b>230</b>	<b>244</b>	<b>237</b>	<b>360</b>	<b>327</b>	<b>343</b>	<b>465</b>	<b>474</b>	<b>469</b>	<b>333</b>	<b>318</b>	<b>325</b>

Source: Household Survey, 2000-2001.

prevalence rate of diseases of viral infection was only 145 (Table 1). It is prevalent among all age-groups and both sexes. Among all, diseases under this group including malaria, measles, and brain malaria (malaria has been classified as a viral disease in the 10<sup>th</sup> International Classification of Diseases) account for 44.50 per cent of the total number of episodes, where malaria alone has the share of 97.22 per cent in this group.

The prevalence rate of the next major group, infectious and parasitic diseases, is 28 per thousand population dysentery has the highest prevalence rate followed by polio, leprosy, diarrhoea and filariasis. Among these leprosy has emerged as a major health hazard in certain parts of the region. The dysentery plays havoc in the group having 32.14 per cent share to the total episodes under this category. The disease along with diarrhoea has no regional bias or boundary in the entire region, which reflects the water quality and conditions of sanitation and hygiene in the region.

Polio also is still playing a notorious role. Despite the National Health Programme and Universal Immunisation Programme, the existence of polio in the villages with PHCs raises one's eyebrow. The remote villages without PHCs have to fend for themselves as the vaccine hardly reaches there.

Diseases of digestive systems and intestinal disorders have prevalence rate of 17 per

thousand populations, which seems to be more prevalent among the children up to 4 years of age and population above 15 years of age. The tribal males of Jharkhand have reported more prevalence rate than the females. Their work outside home invariably exposes them to food and water consumption at workplace that may be one of the causes for this. The main disease, stomach ache, alone has the prevalence rate of 11, which is a widespread problem in entire Jharkhand. Stomach ache is next to malaria accounting for 66.67 per cent to the total episodes of diseases within this category (diseases of digestive systems). These diseases directly or indirectly contribute to the vicious cycle of cumulative effects of all other diseases because they first make people non-resistant, weak, and vulnerable to infections.

Respiratory diseases have reported prevalence rate of 11 per thousand populations where cough is a common ailment. Girl children and aged females are the main sufferers of cough. One of the causes for this apart from well-known negligence towards females is perhaps their long time association with cooking with firewood in the traditional '*chulhas*'. Impairments (both physical and mental) are of a major health concern. The older males are visually more impaired than the females. The skin disease, mainly fungal infection on nails that was found only in Dumka calls for a clinical test to arrive at the causes of this fast spreading disease. The diseases coming under the category of 'other' and 'unclassifiable diseases' have relatively high rate of prevalence with 33 and 19 per thousand respectively accounting for 10.08 and 5.74 per cent shares to total episodes of ailments respectively. In this group, bodyache has been found invariably in all the sample villages. Fever and headache have also emerged significantly. The group of 'unclassifiable diseases' plays a major role in the region as people do not even have a facility to know about the diseases hosted by them. Moreover, they do not even know that a simple symptom could be the beginning of a deadly end. This group comprises of unclassifiable fevers, cold, chest pain and some of the further unclassifiable ailments.

### **Regional Pattern, Age-Sex Differential And Seasonality of Morbidity**

**Gumla (relatively developed) District:** Malaria is a major disease in Jharkhand but is relatively very high in Gumla district. It is the single dominant disease in the district with varying degrees across its sub-regions. The disease accounts for 30.97 per cent to the total episodes of diseases and 96.00 per cent of the category of diseases of viral infection. The diseases of viral infection have a very high rate of prevalence among the tribal population of this district (103 per thousand population) but much lower (almost about 100 per thousand population) than Dumka (Table 2 and Table 3). In this district the females are having higher rate than males. The parasitic diseases distantly follow the diseases of viral infections in terms of prevalence rates as the prevalence rate is 26 only. The main diseases are dysentery, leprosy and polio. The next most prevalent well-defined diseases are related to the respiratory systems, where cough and lung T.B have emerged as major ones. Cough is mainly found among the females while lung T.B. is associated with males only. Though leprosy and polio have meagre shares at district level but are of the major health concerns. A person with leprosy is not allowed to intermingle with the society. The person is socially boycotted and kept in leprosy colonies/hamlets away from the main settlement. The diseases of digestive systems and intestinal infection are prevalent all over the district due to the poor water quality, lack of hygiene and health awareness. Stomach ache is the major health problem among the tribal population, which has worse impact among the males of 60 years and above.

Visual impairment are mostly found among women of the old age-group. The visual impairments among all needs to be analysed in association with other factors, like food intake and nutrition. The hearing impairment, malnutrition and deficiency diseases, diseases of blood and blood forming organs, diseases of genitourinary system, are mainly found among the old age population only. The old age

Table 2

Gumla District: Prevalence of Diseases per thousand Population

Diseases	Age Groups														
	0-4			5-14			15-29			30+			Total		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
I. I. B.P. Diseases	50	0	28	-	22	11	22	41	32	68	-	36	23	29	26
II. Infect/Infection	117	102	110	69	138	102	108	101	103	134	77	96	98	108	103
III. Respiratory	-	20	9	14	-	7	19	3	11	-	26	12	14	6	10
IV. Dig. & Int. Inf.	-	-	-	7	-	4	29	28	28	91	-	48	25	17	21
V. CNS	-	-	-	14	-	7	3	16	9	-	-	-	3	9	7
VI. Abn., Def. B/brn.	-	-	-	-	-	-	10	6	8	23	-	11	7	4	5
VII. Blood	-	-	-	7	14	11	-	9	5	-	26	12	2	11	6
VIII. Genito- Urinary	-	20	9	7	7	7	13	-	6	23	26	24	11	6	8
IX. Preg & C.B.	-	-	-	-	-	-	-	12	6	-	-	-	-	7	4
X. Muscular- Skeletal	-	-	-	-	-	-	13	12	13	-	51	24	7	11	9
XI. Visual	-	-	-	7	14	11	22	3	13	23	77	48	16	11	14
XII. Hearing	-	-	-	-	-	-	3	3	3	48	26	36	5	4	5
XIII. Locomotor	-	-	-	-	7	4	-	-	-	-	-	-	-	2	1
XIV. Speech	-	-	-	14	-	7	3	-	2	-	-	-	5	-	3
XV. Neoplasm	-	20	9	-	-	-	-	-	-	-	-	-	-	2	1
XVI. Skin	-	20	9	-	7	4	13	6	9	-	26	12	7	9	8
XVII. Acc/ & E/	-	20	9	7	14	11	13	6	9	23	51	36	11	13	12
XVIII. Senility	-	-	-	-	-	-	-	-	-	23	26	24	2	2	2
XIX. Other	50	-	28	34	-	18	57	66	62	91	102	96	53	46	50
XX. Other Unclass.	-	102	46	21	43	32	22	19	21	-	-	-	18	31	24
Total	217	308	257	200	268	233	346	334	340	523	512	518	308	328	318

Source: Household Survey, 2000-2001.

populations are also main sufferers of diseases of immunity disorders, and diseases of muscular-skeletal systems. Diseases of skins are basically related to the female populations. Examples are also found for the paralysis has also been reported in this district as a result of wrong and untested herbal medicines given by a traditional healer for birth control to a lady.

The district may be put in a better position in terms of morbidity as, apart from senility, some of the diseases are related to old age populations. However, due to poverty, food and nutritional deficiency and problems related to proper health care from both ends (providers and receivers) morbidity among the ageing population is of a growing concern whose shares have been increasingly growing due to general population transition.

### Dumka (Relatively Underdeveloped) District

Dumka has been found as the most underdeveloped district of Jharkhand region only next to Deoghar district in terms of educational, health, and transport infrastructures, safe drinking water facility and literacy. The episodes under malaria are extremely high in the district with 58.62 per cent of total cases falling in this category. The infectious and parasitic diseases have a share of 9.31 per cent. In this group diarrhoea, polio, and Filariasis have emerged as the major diseases. Here malaria alone accounts for nearly two-thirds of total episodes. Besides these two kinds of diseases, all other groups have the prevalence rates of less than 5. Accidents and external injuries, respiratory diseases, diseases of digestive systems and intestinal infections, 'other' and unclassifiable diseases have the shares of 3.45 per cent each. Other main diseases are cough, stomach ache, diseases related to pregnancy and childbirth, genito-urinary systems, fungal infections of nails, genetic deformity, unclassifiable fevers, diseases and aches. In Dumka the morbidity prevalence rate is high but the number of diseases is less than Gumla.

**Figure - 1**

Table 3

Dumka District: Prevalence of Diseases among Sample Population

Disease	Age Groups														
	0-4			5-14			15-29			30+			Total		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
A. & P. Diseases	40	40	40	19	19	19	39	17	23	74	34	63	58	23	51
M. Proto-Infection	544	130	267	124	176	130	204	171	133	133	243	219	217	177	197
M. Respiratory	16	40	29	-	-	-	3	13	10	-	34	31	7	16	11
M. Dig. & Intest.	-	40	19	-	-	-	16	13	14	-	27	16	9	14	11
M. CNS	-	-	-	-	-	-	-	4	2	57	-	16	2	2	2
M. Mal. Def. & Imm.	-	-	-	-	-	-	-	3	4	-	-	-	-	3	2
M. Blood	-	-	-	-	3	3	4	4	4	-	-	-	2	3	3
M. Genito-Urinary	-	-	-	-	-	-	3	4	6	57	-	16	7	2	3
M. Preg. & CS	-	-	-	-	-	-	-	29	14	-	-	-	-	16	3
M. Muscular-Skeletal	-	-	-	-	-	-	4	3	6	-	-	-	2	3	3
M. Visual	-	-	-	-	-	-	4	4	4	-	-	-	2	2	2
M. Locomotor	-	-	-	19	-	3	4	3	6	57	-	16	9	3	7
M. Speech	-	-	-	10	-	3	4	-	2	-	-	-	4	-	2
M. Skin	16	-	10	-	-	-	24	-	12	-	-	-	16	-	3
M. Acc. & O	16	-	10	19	-	3	20	17	13	-	-	-	13	9	14
M. Mental	-	-	-	-	-	-	-	-	-	34	31	-	3	2	-
M. Cardio	-	-	-	-	-	-	4	-	2	-	-	-	2	-	1
M. Other	-	23	10	19	-	3	20	3	14	-	-	-	16	7	11
M. Other Unclass.	55	23	29	-	3	3	16	3	12	-	-	-	13	9	11
Total	473	541	419	272	215	242	576	517	547	570	432	406	563	505	534

Source: Household Survey, 2000-2007.

impairment is the matter of concern because of their genesis.

The female related health problems needs to be focussed despite their less percentage under any disease and impairments. The disease prevalence rate among them is 16 per thousand population and 29 per thousand female populations under reproductive age-group. Diseases of genito-urinary system is found among the 6 per thousand population under the age-group of 15-59 years and 37 per thousand males of the age of 60 years and above, which is nine times higher than the previous groups. Prevalent skin diseases (fungal of nails and eczema) especially found in Dumka district have the rate of 8 per thousand population and found only among males. The diseases under the categories of 'other' and 'other not classifiable' have the rate of 21 per thousand population. These diseases need to be detected what exactly they are, such as unclassifiable fevers. All diseases under these categories are predominantly found among the children, where genetic deformity needs a greater examination.

Dumka, a relatively less developed district, has a higher disease prevalence rate, i.e. 334 per thousand population compared to Gumla, a relatively developed district in terms of rural social infrastructure,

aria alone has the prevalence rate of 194 per thousand population accounting for 99.42 per cent share in this group of diseases (Table 3). It is found across all the age-groups. But the higher rates are found among the children and the old populations. The next kind of prevalent diseases are of infectious and parasitic diseases found to be 31 per thousand population. It is found in all age-groups. In this category, diarrhoea, Filariasis and polio are most prevalent ones. Kala-Azar supposed to be fully controlled but still found in Dumka. Respiratory diseases and diseases of digestive systems and intestinal infections have the prevalence rates of 11 each. Among all these, cough and stomach ache are in considerable numbers. Impairments are also significant in the district, where locomotor



with a Prevalence Rate of 318 per thousand population. There are significant variations among the blocks, where developed blocks in both the districts have much less morbidity rates than the underdeveloped ones. It is more conspicuous in case of Gumla district. The differences in the prevalence rates among villages are wider than the block level variations ranging from 211 per thousand population in Dhorhi village to 469 in Ranga village.

As revealed from Table 1 the overall average morbidity reflected in terms of prevalence rates (per thousand population) is 325 for Jharkhand. The gender differential is not observed to be significant. Between the two sample districts the difference is not large again though the prevalence rate is higher for Dumka. Masalia block of Dumka has reported the highest prevalence rate. Among the villages, MPR is observed to be of the order of 469 per thousand in Ranga village of Masalia block in the Dumka district. It is closely followed by Muriya village located in the Gumla district (Simdega Block). The variability across the villages was high whereby Dhorhi village of Gumla has reported the lowest MPR followed by Phalan in the Dumka district.

This clearly indicates that morbidity pattern varies significantly within the two districts as each has a village with a very high MPR sometimes recording twice the magnitude in relation to the one with lowest MPR.

The figure (**Fig. 1**) gives an illustration of the spatial dimensions of morbidity prevalence in Jharkhand. Though number of the diseases at different levels is not comparable (among villages, among blocks or between districts) because of varying sample size, the pie diagram may be helpful in focussing on the diseases which are most debilitating such as viral infection, parasitic infection, respiratory diseases, diseases of digestive systems, etc. Among all, about half proportion goes to malaria alone. It crosses even the 50.00 per cent share in all villages of Dumka district.

There is a clear pattern that the villages with PHC have recorded the higher MPR than the remote villages. In terms of gender differential, there is again no definite pattern on the basis of the location of the village with reference to PHC. It is noticed, however, that the villages of relatively advanced block (Gopikandar) have reflected high MPR for females, than the villages of Masalia block. Remarkably the gaps are also wide.

There are marked differences among the villages even within a district in terms of total morbidity prevalence. There are also significant inter-village and inter-tribal variations of morbidity prevalence among the various age-groups. Apart from common ailments, there are specific diseases in different villages. All these kinds of morbidity prevalence reflect the varying physical, environmental and socio-economic conditions of the village within a district. For instance in Kurdeg village, viral infection and infectious and parasitic diseases play a notorious role with malaria and leprosy as the major diseases. Leprosy is expected to spread as the symptoms were reported by some more persons. There are some diseases with very large proportions, prominently fevers and pains, which could not be classified due to their uncertain genesis. In Ranga, the health problems of females (diseases related to pregnancy and childbirth), have come in the light in a very significant manner, which reflect all associated factors including the absence of a lady doctor in the PHC and their proper care. In Phalan, diseases of skin have prominently emerged in the village where fungal disease on nails (decay of nails) is widespread with 5.08 per cent of total episodes. This disease is male specific in the village. Diseases related to pregnancy and childbirth have emerged with significant rate of 33 per thousand females of the reproductive age-group. A fungal disease related to the decay of nails is confined to Santhal Parganas region of Jharkhand and is not found in Gumla.

Similarly the diseases can clearly be identified as age and sex-specific in nature. For example, polio is found among the younger generation except malaria which is not age or sex specific. The

respiratory diseases are found among the younger people as well as the people of the age-group of 15-59 years unlike the people of Dumka district, where it is found among children and older population. Females are little more susceptible than males. The population at higher risk is from both the younger and the older generations with MPR of 364 and 667. However, in the younger generation (0-4), female children reflect a gross negligence than the male children. The disease prevalence rate among them is 200 and 615 per thousand male and female children respectively. In contrast, in the older generation females are at little advantageous position where they have the MPR of 500 compared to 786 among males. In the most affected age-groups of females, the major diseases to increase the prevalence rate among them are dysentery, typhoid, diarrhoea, malaria, body ache, fever and headache, waist pain and other kinds of pains in different parts of the body. These are attributed to heavy workload and the poor living conditions. In the old age-group, females are affected by anaemia, skin diseases, injuries and diseases of senility. Therefore, even in the tribal society, females are the subject of negligence/deprivation indirectly, due to changing life-style and socio-economic spheres, and burden of different responsibilities. Old populations are most affected in all communities.

There is seasonality also in the diseases like Malaria occurs in winter in Dhorhi whereas it prevails in summer in Kurdeg. Similarly, Masalia is reported to have been attacked by various diseases severely in post rainy season (October to February). It is also supported by some other major studies where marked difference in reporting has been found. For example Sen (1998)<sup>13</sup> reflects that Kerala has the highest morbidity reports whereas NCAER (1999)<sup>14</sup> reports that Kerala is among the states with low morbidity prevalence rates.

The other observation is that the village Bara Barpani is situated in an advantageous position among all other sample villages in terms of amenities and economic opportunities. Yet the village has registered high MPR. The village is severely affected by malaria. This rate has gone up to such extent due to the cumulative episodes of the diseases of viral infection, respiratory diseases, genito-urinary systems and muscular-skeletal systems and among the females of this age-group. Therefore, females have been affected with a burden of several kinds of diseases, which increases in cumulative aggravation day-by-day.

## **Other Measures Of Morbidity**

### **Proportion of Ailing Population (PAP)**

Total PAP in Jharkhand is 285 meaning thereby 28.5 per cent population are under any ailment. Dumka district's 29.37 per cent population is identified as ailing (PAP-293 per thousand population). However, the positive side of the districts' health condition is that its less pronounced among females' population (26.34 per cent) than males (32.29 per cent). In Gumla opposite is true as the PAP is lower than Dumka but is higher among females. However there are extreme cases like Dhorhi village reports only 174 per thousand ailing population, which is lowest among all the sample villages despite its remoteness, inaccessibility and poverty. Also the population of Ranga village is at a very high risk because of the highest proportion of its population recorded as ailing (400 per thousand population). It is a matter of concern for any society and the government because the village is only 2 kilometres away from the PHC.

### **Morbidity Prevalence Rates (MPR)**

The average MPR in Jharkhand is found to be 325. The villages of Gumla district have wide differences in MPR among male and female population, where Kurdeg, Bara Barpani and Muriya villages have higher MPR among females. This gap goes up to 101 per thousand in Muriya. The same magnitude

**Table 4**  
Proportion of Ailing Persons or Morbidity Rates  
in Jharkhand (Per thousand Population)

Village/Block District	Male	Female	Total
<b>Gumla District</b>	<b>270</b>	<b>285</b>	<b>277</b>
Kurdeg	264	274	269
Dhorhi	216	131	174
Bara Barpani	256	287	270
Muriya	351	443	397
<b>Dumka District</b>	<b>323</b>	<b>263</b>	<b>294</b>
Gariyapani	250	301	274
Musna	233	250	242
Ranga	476	326	400
Phalan	295	168	236
<b>Kurdeg Block</b>	<b>246</b>	<b>220</b>	<b>233</b>
<b>Simdega Block</b>	<b>295</b>	<b>357</b>	<b>325</b>
<b>Gopikandar Block</b>	<b>242</b>	<b>275</b>	<b>258</b>
<b>Masalia Block</b>	<b>387</b>	<b>254</b>	<b>322</b>
<b>Jharkhand</b>	<b>293</b>	<b>275</b>	<b>285</b>

Source: Household Survey, 2000-2001.

of gap (102) is found in Dhorhi village, where MPR for male and female are 261 and 159 respectively. In the childhood (0-14), only Muriya village has shown low prevalence rates among the female population. In the age-group 15-59, this pattern changes as the opposite situation emerges, *i.e.* in all villages the MPR among females comes lower than males whereas it reverses in Muriya with a wide gap. The MPR for females enormously differs (by 153 per thousand) in this age-group in Dhorhi than males. Among the older population, the MPR is found to be very high in all the villages with a huge gender gap, where females are more affected in Bara Barpani and Muriya villages. Among all villages, females are found to be in better position in Dhorhi village after the childhood.

The disease prevalence rate in Dumka district is 365, 303 and 334 per thousand for male, female and total populations respectively, which is higher than Gumla district. However, the remarkable point in the district is its less disease prevalence rate among the females than the males, which is even less than Gumla district. But here, as discussed above, under reporting may be a factor due to low self-perceptive reporting owing to health

awareness. Another situation can be articulated as the traditional societies have non-discrimination against females, which leads to better health. For example, the low prevalence of diseases in Bihar does not mean healthy situation than that of Kerala where the prevalence is much higher than Bihar. Dumka has significantly low MPR in the remote villages. But there are villages with very high MPR like Ranga, which has tremendous external interventions also.

## Disease Attack Rate

**Table 5**  
Jharkhand: Morbidity Prevalence per thousand Population

Village/Block	Age Groups														
	0-4			5-14			15-59			60+			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
<b>Gumla District</b>	<b>217</b>	<b>306</b>	<b>257</b>	<b>200</b>	<b>268</b>	<b>233</b>	<b>346</b>	<b>334</b>	<b>340</b>	<b>523</b>	<b>513</b>	<b>518</b>	<b>309</b>	<b>328</b>	<b>318</b>
Kurdeg	200	613	364	116	179	188	330	301	314	786	500	667	239	330	314
Dhorhi	0	100	50	91	100	95	339	186	263	667	250	471	261	159	211
Bara Barpani	138	280	200	226	306	258	368	328	351	167	600	428	237	324	308
Muriya	545	200	381	563	500	531	333	500	420	333	636	462	386	437	437
<b>Dumka District</b>	<b>475</b>	<b>341</b>	<b>419</b>	<b>272</b>	<b>213</b>	<b>242</b>	<b>376</b>	<b>317</b>	<b>347</b>	<b>370</b>	<b>432</b>	<b>406</b>	<b>365</b>	<b>303</b>	<b>334</b>
Gariyapani	471	333	423	261	167	213	302	333	316	0	800	488	306	323	313
Musna	300	571	438	105	388	267	268	182	125	400	200	300	244	230	268
Ranga	474	250	387	419	167	256	631	479	551	636	500	386	556	388	469
Phalan	600	111	417	233	179	207	296	233	267	167	200	288	311	206	262
<b>Kurdeg Block</b>	<b>133</b>	<b>391</b>	<b>248</b>	<b>105</b>	<b>206</b>	<b>154</b>	<b>333</b>	<b>262</b>	<b>296</b>	<b>739</b>	<b>389</b>	<b>585</b>	<b>284</b>	<b>266</b>	<b>275</b>
Simdega Block	300	231	268	304	338	321	338	421	388	286	619	482	333	337	364
Gopikandar Block	407	478	440	190	280	239	286	257	272	200	545	381	278	306	292
Masalia Block	529	190	400	328	155	244	486	366	412	471	385	419	435	301	368
<b>Pooled</b>	<b>347</b>	<b>323</b>	<b>336</b>	<b>230</b>	<b>244</b>	<b>237</b>	<b>360</b>	<b>327</b>	<b>343</b>	<b>463</b>	<b>474</b>	<b>469</b>	<b>333</b>	<b>318</b>	<b>325</b>

Source: Household Survey, 2000-2001.

This table shows a reverse situation with high attack rate in Gumla District that Dumka. Unlike

Morbidity Prevalence Rate and PAP where it is just opposite (Table-6). It means that the person under any illness is more prone to other multiple diseases in Gumla than in Dumka as this rate is 116 and 112 in Gumla and Dumka districts respectively. Kurdeg block has the highest attack rate but has the lowest PAP or Morbidity prevalence rate. It indicates that there are households/persons with very high level of multiple deprivation paving way to multiple attack of disease(s). It also indicates that a particular group is more vulnerable to diseases. The other study units also show this kind of characteristics for further investigation as to what leads to multiple attack apart from the pathological reasons like inability for treatment, inaccessibility of health care centres or no preference of modern sources of treatment.

## Type And Nature Of Disease Prevalence With Location And Availability Of PHC

As seen above Dumka district has the higher prevalence rate than Gumla. However, if the characteristics of villages are considered then there are differences within and between both the districts. The Gumla has higher prevalence rates than Dumka in the remote villages without PHC. Though the low morbidity reporting in Dumka district may be because of two factors; one, these remote villages really are better off due to less external intervention, and second, the capacity of morbidity perception and reporting may be low due to remoteness and poor external exposure and perceptive capability.

The morbidity pattern in the sample area presents an important complexion of association between

Table 6  
Ranking of Study Units by various Measures of Morbidity in Jharkhand

Chronic Attack Rate				Proportion of Ailing Population				Morbidity Prevalence Rate			
Village/Block	Male	Female	Total	Village/Block	Male	Female	Total	Village/Block	Male	Female	Total
Dhanri	121	121	121	Rango	476	326	400	Rango	526	369	469
Kurdeg	113	116	116	Murba	381	443	397	Murba	366	487	427
Rango	113	113	116	Garkapanti	350	361	374	Kurdeg	398	300	314
Bera Barpanti	113	115	117	Bera Barpanti	356	367	370	Garkapanti	306	323	313
Garkapanti	122	107	115	Kurdeg	364	374	369	Bera Barpanti	397	324	369
Murba	115	110	112	Mura	320	350	342	Mura	344	390	369
Mura	105	116	111	Phalan	326	166	326	Phalan	311	306	362
Phalan	100	111	104	Dhanri	316	131	174	Dhanri	361	153	311
Kurdeg Block	116	113	117	Sirdeg Block	326	367	323	Mazla Block	426	361	369
Sirdeg Block	117	112	114	Mazla Block	367	354	322	Sirdeg Block	300	397	364
Gopikandri Block	115	111	113	Gopikandri Block	342	375	359	Gopikandri Block	379	306	392
Mazla Block	106	117	112	Kurdeg Block	346	330	333	Kurdeg Block	364	366	375
Gumla District	116	115	116	Dumka District	323	363	394	Dumka District	366	303	334
Dumka District	110	114	112	Gumla District	370	385	377	Gumla District	369	328	318
Jharkhand	114	115	114	Jharkhand	393	375	385	Jharkhand	320	318	325

Source: Midwestern Survey, 2000-2001.

reported morbidity and development. As it is well known that the method of lay diagnosis reporting (LDR) can successfully work when two necessary conditions are fulfilled. Firstly, that the respondent perceives the fact that he/she is unwell and is also in a position to locate, though broadly, the nature of ailment/symptoms. Secondly, that the communication between the interviewer and the respondent is reasonably good. Having said this one may also observe that there would be significant variation across communities and groups of population in terms of their perception and definition of ailment that one may call as culturally determined.

Studies have also shown that morbidity tends to be higher in developed conditions. In other words, social and economic process of development brings better awareness and health care facilities that helps the process of perceiving one's health. Economically better off persons are likely to utilise health care services more often than others, and therefore, are likely to have higher morbidity rates. In India the case of Kerala is an interesting example of this process.

One may agree that the illiterate and the marginalized tribes may reveal relatively poor levels of illness perception, which may also be conditioned by cultural factors. It is generally said that in the pre-literate traditional societies, physical and mental infirmities are generally associated with spells of magic or wrath of the supernatural and supreme powers. Hence, disease as medically constructed and that which is culturally constructed may be at same variance. In the course of transition, when a pre literate society of tribal denomination comes in contact or is exposed to the forces of modernisation, the distinction between disease and magic/ supernatural forces tends to set in. Hence, the perception of ailment on account of disease is likely to be perceived from the vantage point of two-fold distinction mentioned above.

In the sample area, one observes that the difference in morbidity (MPR) between the villages with and without PHC was significant though not very large where the PHC villages have reported higher MPR than villages without PHC (Table 7). The gap between villages with and without PHC in Dumka was very large while it was not so in Gumla. What emerges here is that Gumla, a relatively developed district, has a prominent record of higher prevalence rate in a village, which is without PHC. The pattern observed above, therefore, fails to help understand the causes of this variation. One would have expected that PHC villages report higher MPR than village without PHCs. At the aggregate Jharkhand level, this observation is not consistent with the above pattern. It means, that there are local conditions that underline the observed variation. One may also hypothesise that far-flung areas in the tribal pockets that are still untouched by outside influences and would tend to have poor prevalence rates. The observation in the field made in the

**Table 7**  
**Jharkhand: Prevalence of Diseases with Background of Villages**

Diseases	Prevalence of Diseases					
	Villages Without PHC			Villages With PHC		
	Gumla	Dumka	Jharkhand	Gumla	Dumka	Jharkhand
A.I. & M. Diseases	23	24	24	27	57	51
M. Malaria Infection	110	146	127	98	245	138
M. Respiratory	7	12	9	12	11	12
M. Dig. & Intest.	16	14	15	24	9	18
M. CNS	11	2	7	3	2	4
M. Mal. Oc./&Imm.	4	0	2	6	4	3
M. Blood	11	2	7	5	4	4
M. Genito-Urinary	4	0	2	11	9	10
M. Preg & CS	2	7	3	3	9	6
M. Muscular-Skeletal	7	0	5	11	7	9
M. Mental	13	2	10	11	2	7
M. Hearing	2	0	1	6	0	4
M. Accidental	0	7	5	2	9	4
M. Speech	2	0	1	5	4	4
M. Anaemia	0	0	0	2	0	1
M. Skin	9	10	9	8	7	7
M. Acci. & Dr	11	7	9	12	20	13
M. Mental	2	3	5	2	0	1
M. Cancer	0	0	0	0	2	1
M. Other	72	12	45	53	11	23
M. Other Unclass.	15	14	14	20	9	21
Total	527	263	287	511	400	547

Source: Household Survey, 2000-2007.

two Dumka villages that were without PHCs such as Musna and Phalan reported lower morbidity rates. To what extent it is a function of ignorance, self perception or disturbance in the primordial tribal life style needs to be further examined with reference to a much larger sample and in depth analysis focused on this theme.

## **Development Indicators And Morbidity**

The MPR is found to be higher in the villages with PHC as has already been examined with exceptions at micro level. In these villages, the prevalence rate is more among females than males. However, the prevalence rates for females are significantly less among the females of remote villages. It is also found that with literacy the MPR is found more among the illiterate tribes of Jharkhand (Table 8). The main point here is it is significantly lower among the literate female than the literate males opposite to the situations among the illiterate males and females. Among illiterate populations, females have the higher morbidity prevalence rates.

The highest morbidity prevalence rate is found among the non-agricultural workers (518 per thousand population). Surprisingly it is also very high among the service holders (375 per thousand population) followed by agricultural workers and non-workers. The lowest prevalence rate is found among the wage labourers (207 per thousand population) with a vast gap with the highest prevalence rate for non-agricultural activities. The higher prevalence rates among females are found among the non-workers and non-agricultural workers. Among the service holders, the prevalence rate among females is comparatively very low (male- 422; female- 263 per thousand population). It is also lower among the females engaged with agricultural activities and wage labour. Hence, the comparatively lower prevalence rates are observed among either the non-workers or the wage-labourers.

The morbidity prevalence is relatively low among those, who belong to the head of the households engaged in agricultural activities (295 per thousand population) and the prevalence rates are high with those who belong to the head of the households engaged in wage labour (421 per thousand population) and non-workers (441 per thousand population).

Child morbidity has also been examined with the occupation of mothers and it is found that the lowest morbidity prevalence rate is found among those children whose mothers are non-workers. The prevalence rate is also low among the children of mothers engaged in agricultural and allied activities. Agricultural and allied activities have much flexibility for female workers to take care of their children because most of them work in their fields only. Very high prevalence rates are experienced by the children of those mothers who are engaged in non-agricultural activities (455 per thousand population) and wage labour (438 per thousand population) where they do not have time to take care of their children during working hour. The higher prevalence rate is also found among the children whose mothers are engaged with services or non-agricultural activities. Similarly, it is significantly lower with the female children of the mothers engaged in non-agricultural activities.

There is not very clear picture of relationship of morbidity with land holding. But there is a tendency of decreasing morbidity towards larger land holding size and the large land holding size is found towards the relatively less developed areas or villages. Similarly there is no definite pattern of relationship of morbidity with per capita income in Jharkhand. The other factors are more dominant in the region. The morbidity seems to prevail marginally more among those who have availability of access to food for both the meals a day. In both the conditions, the prevalence rate among females is lower than the prevalence rate among males.





district only.

The per capita income does not show any definite pattern. In the two districts of Jharkhand, where two distinct cultures also exist at micro level, there is some difference in disease occurrence. There are physical, environmental, economic, political, administrative and social factors involved in the evolution of the occurrence and perception of diseases, awareness, health and health care. The physical factors may have contributed for the difference in malaria and *Kala-Azar* in the two regions. The difference in diseases related to digestive systems and intestinal infection and respiratory diseases, skin diseases (fungal in nails) and filaria are contributed by the environmental factors such as water quality and surroundings and amenities inside the house. The occurrence of diseases related to malnutrition, impairments and muscular skeletal systems may be characterised by economic factors. The diseases like genetic deformation are differentiated by the social factors such as early marriage and pregnancy below age of 18 years. And finally, the overall health situation is attributed to the varying political and administrative factors, which hardly pay its attention to eradicate and minimize the prevalence rates of diseases, enhancement of nutritional status, provision of health care facility, etc.

The overall analysis reveals that the communities of Gumla district are healthier than the communities of Dumka. Wherever human intervention has taken place in one-way interaction, their situations have become grimmer. In contrast, the remote areas are healthy in some respect like environmental health and food intake. Nonetheless, these are deprived of positive sides of human interventions like all kinds of infrastructure, facilities and overall balanced developments.

There is a need of further examination about the higher prevalence of diseases in the villages with PHC to find out that whether the remote villages under report morbidity due to various reasons or the villages with PHC are really worse off in terms of morbidity prevalence.

There are well defined seasonality of disease occurrence, for which preventive and promotive measures can be taken well ahead. Similarly the preparation to mitigate the challenges during the seasonal occurrence in particular regions makes planning easy to combat those epidemic situations.

Looking at the size and dimension, the prime concern is the elimination of malaria and provision and maintenance of safe drinking water supply to every household so that prevalent diseases related to digestive systems and intestinal disorders can be eliminated and if these two are eliminated, a significant decline in disease prevalence can be achieved.

The diseases classified in 'other' categories cannot be neglected as their prevalence rate is also significant and is primarily associated with older populations where main health problems are of body ache, fever and headache and heat stroke. The unclassifiable diseases, in contrast, are found among the children, especially the unclassifiable fevers and ailments. So, there should be some mechanism to enhance their awareness to go for the diagnosis and treatment and also there should

Table 9  
Mortality Indicators in Jharkhand

Districts	IMR			U-5MR		
	T	M	F	T	M	F
<b>Santhal Pargana</b>						
Godda	71	75	73	104	101	111
Sahibganj	81	78	83	129	124	134
Dumka	63	69	64	85	86	85
Deoghar	97	95	109	128	129	127
<b>Central Jharkhand</b>						
Dhanbad	35	32	37	41	44	43
Giridih	76	79	72	96	97	99
Hazaribagh	55	57	54	80	76	89
Palamu	113	89	134	131	104	149
<b>Southern Jharkhand</b>						
Lohardaga	54	77	44	110	109	111
Gumla	80	65	98	116	118	120
Ranchi	50	51	48	79	84	74
East Singhbhum	58	55	61	92	89	95
West Singhbhum	68	68	68	96	99	93

Source: Census of India, 1991, Bihar State District Profile, 1991, p.p. 54-55.



be proper visits and services by the government health personnel to detect, treat or to refer and help in minimizing these unclassifiable diseases. Almost one-fourth of the total episodes of diseases are comprised of the diseases categorised in ‘other’ and ‘other unclassifiable’. People generally neglect the treatment of these ailments due to unavailability and improper facilities.

The perception of morbidity increases with development and thus reporting may also increase. However, the studies reveal that there is a positive relation of development and health status especially in the society of low level of development.<sup>16</sup> Therefore, development is a must to create the affordability for (the factors of) improvement and maintenance of good health status.

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