

## A Study of Water-borne Morbidities of Thanga Village, Manipur

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**ABSTRACT** The present study was undertaken in the fishing community of Thanga village of the North-eastern state of Manipur to identify the factors that were contributing to high incidence of water borne diseases. A total of 200 families were asked to recall all the illness prevalent during the last one week prior to the day of recording the data. The results revealed that out of a total of 1254 individuals 132 were reported suffering from water-borne diseases such as diarrhoea (34. 84%), worm-infestation (27. 27%), typhoid fever (21. 21%) and jaundice (16. 66%). The study indicates that low literacy rate, low economic status, unavailability of potable drinking water; ignorance, poor hygienic practices and cultural practices associated with consumption of drinking water etc. were found to be the determinants of high incidence of morbid condition in the village.

### INTRODUCTION

The internal environment of man himself and the external environment surrounding him determine the health status of an individual, a community and a nation. Lack of safe drinking water is the prime reason of much of the ill health in the underdeveloped world. Water-borne diseases are a leading cause of morbidity and mortality and are still a major public health problem in India (WHO, 1994).

In the present study an attempt has been made to explore the water-borne morbidities and its contributing factors. Thanga, a village in Bishnupur district of Manipur is situated 45 km from Imphal and surrounded by water in all three sides. The village has 1010 households but only a few families have proper toilet facility and majority of the people defecate in water. So fecal matters are seen floating on the water. The same water is used for cooking, drinking, bathing, washing clothes and cleaning utensils. Water level of Loktak lake increases during rainy season and houses near the water are often flooded during rainy seasons. The colour and odour of the lake water is reported to change due to rotten grasses and water hyacinth.

### MATERIAL AND METHODS

The present study was undertaken in the fishing community of Thanga village of the North-eastern state of Manipur. Systematic sampling method was followed for selecting 200 out of a

1010 households. The sample size consisted of 1254 individuals comprising 648 males and 606 females. Structured interview schedule and observation methods of hygienic practices related to use of drinking water among the present population were employed.

### RESULT AND DISCUSSION

Types of water-borne morbidities in the surveyed population are worm infestation, diarrhoea, jaundice and typhoid fever. It is evident from table 1 that out of the total 132 individuals suffering from water borne morbidities diarrhoea account for 34. 84%. In India, diarrhoea is a major public health problem as in other developing countries. An estimated 1.8 billion episodes of diarrhoea occur each year and 3 million children under the age of 5 years die of diarrhoea (WHO, 1999)

Table 2 reveals that morbidities are found to be prevalent more among males than females by showing a highly significant value of  $Z=3.72$  ( $p<0.01$ ). This may be because biologically, immunity of males is comparatively lower than

**Table 1: Frequency distribution of water-borne morbidities of Thanga village**

<i>Types of water-borne morbidities</i>	<i>No.</i>	<i>%</i>
Worm Infestation	36	27. 27
Diarrhoea	46	34. 84
Typhoid fever	28	21. 21
Jaundice	22	16. 66
Total	132	100. 00

**Table 2: Sex-wise distribution of water borne morbidities in the present population**

Waterborne morbidities	Male		Female		Total	
	No.	%	No.	%	No.	%
Worm infestation	23	27.38	13	27.08	36	27.27
Diarrhoea	30	35.71	16	33.33	46	34.84
Typhoid fever	17	20.23	11	22.91	28	21.21
Jaundice	14	16.66	8	16.66	22	16.66
Total	84	100.00	48	100.00	132	100.00

females. Other reason may be males are frequently exposed to outdoor activities in the lake water.

**Table 3: Age-wise distribution of water borne morbidities**

Age group (in yrs)	Population (n)	Frequency infected	%
<1	10	5	3.78
1-4	94	29	21.96
5-9	92	8	6.06
10-19	178	18	13.63
20-29	308	19	14.39
30-39	178	8	6.06
40-49	118	9	6.81
50-59	134	9	6.81
60-69	98	18	13.63
>70	44	9	6.81
Total	1254	132	100.00

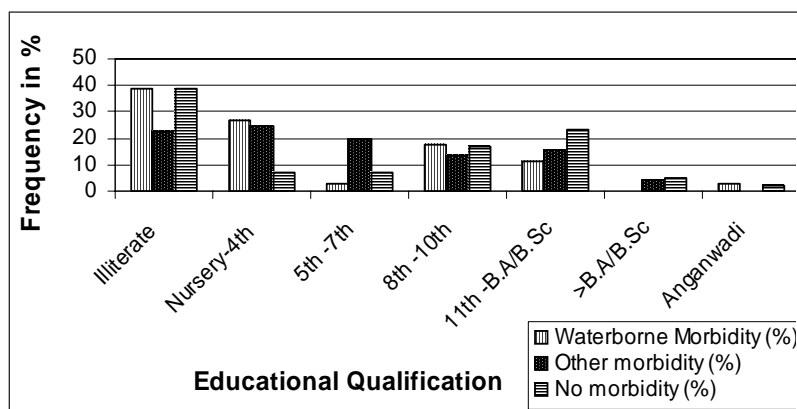
It is evident from table 3 that children of the age group 1-4 years suffer most (21.96%) from water-borne morbidities, on the whole more than 25% of the infected population belongs to children below 5 years. Nearly 20% of all water borne morbidities affected the elderly (>60 years) group.

Figure 1 reveals that most episodes of water borne illness (38.63%) occurred among the illiterate group of the surveyed population. Thus, the illiterate sections of the population are more vulnerable to water-borne diseases than the educated section of the surveyed population. From the socio demographic profile of the population it is shown that literacy rate of the studied population is 57.41% which is lower than the literacy rate of Manipur 68.87% (NFHS, 2000-2001). The incidence of Water-borne morbidities decreases with the increase of educational standard.

The pattern of arrangement of different houses on the slope ridge of the village is a noteworthy feature. The houses are arranged very densely one above another in tiers. The construction of latrines amongst these congested houses is limited by the geographical topography of the village site. If one constructs one kutch / pit latrine in his own homestead, problems of bad odour as well as running down faecal matters towards the low lying houses especially during the rainy season is to be faced. Thus, in order to avoid such awkward situations, the villagers are compelled to answer the call of the nature in the nearby lake – an age-old ongoing trend handed down for many years. The same situation is faced by the people in case of drainage system also.

The diseases associated with contaminated water remain amongst the most serious public health problems for much of the world's population (Wynngarden, 1992). No doubt there is water pipeline for supply of drinking water installed by PHED in the year 1992-93 but the same is currently defunct. The main source of

water therefore is met from the lake. Out of the 200 household surveyed, 89% of the household depend on the lake as sole source of water for drinking as well as other uses. Though hand pumps are available, only about 11% of the household use them obviously because of adherence to certain cultural taboos since these were recently

**Fig. 3. Frequency percentage distribution of education and morbidities**

introduced and at the same time most people objected to the taste and odour of water. Types of treatment method used by the villagers for household included boiling, conventional method of filtration using cloth and modern water filter. The availability of safe and adequate drinking water and sanitary measures has a direct bearing on the working conditions and health of the people and their capacity for optimum production. While access to safe drinking water and sanitation have been proven to be essential to good health, and while the availability of water is a requisite for socio-economic development, there also exists a cause and effect relationship between water, health and development (Shukla, 1988).

All the 200 households surveyed in the population store water for drinking and 92% of them used traditional covered vessels for storing drinking water and 3% of the households stored water in uncovered vessels. 39% of the household daily cleaned the vessels in which they stored drinking water, 11% cleaned in weekly basis and 50% reported cleaning the vessel twice a week. 46% of the household used cup or vessel without handle to remove drinking water from stored vessel and only 4% had tap on vessel where drinking water is being stored.

Illness can be prevented by ensuring that drinking water remains clean from the point of collection to the point of consumption. This is possible by storing drinking water in clean, covered vessels and by using a ladle for taking out the water (UNICEF, WHO and UNESCO, 1997). Of the total 200 households surveyed, 75% had not constructed toilet and these people defecate in the lake. Some of the reasons they had given for not constructing toilet are – lack of space (44%), no money (39%), no need (2%) and other problems (15%).

India is a land of villages and about 80% of its population live in villages. The problem of sanitation therefore is one of “Rural sanitation”. Surveys have shown that 90% of the population “go to the open fields” for defecation. This habit of indiscriminate fouling of the surrounding with human excreta is generations-old and rooted firmly in the cultural behaviour of the Indian village people. The problem in rural sanitation is how to overcome the resistance of the village people, and induce them to use sanitary latrines (Park, 1995).

## CONCLUSION

The study indicates that low literacy rate, low economic status, unavailability of potable drinking water, ignorance, poor hygienic practices and cultural practices associated with consumption of drinking water etc were found to be the determinants of high incidence of morbid condition in the village.

The study indicates that some strategies are needed to ensure safe drinking water to the community. The study shows that lack of awareness is a major problem among the community. One of the solutions can be creating awareness amongst the people in the surveyed population. To implement this suggestion and bring it to reality there is a need to formulate scientifically designed intervention strategies to create awareness amongst the people. Provision of safe drinking water is of utmost priority that goes hand in hand with education of the people. There has to be system for pumping the water from lake to the convenient site on the island and proper treatment of the water and its distribution. Perhaps, it is imperative that the community learns to take up the responsibility of ensuring that the drinking water remains safe and this would be one step towards the community taking their health in their own hands.

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