CHAPTER VI

DEMOGRAPHIC INDICATORS OF HEALTH AND DISEASE

INTRODUCTORY STATEMENT

While discussing the health situation in the Third World a few fundamental factors should be kept in mind. The health policies of the post-colonial countries tend to perceive and treat the health situation as an ahistorical and natural product rather than a historical and social one. The so-called "Tropical Diseases" can equally be labelled as the "Diseases of the Poor", because they are less a result of climatic conditions than of the economic and social conditions prevailing generally in the tropics. In fact, the "tropical" disease have become endemic in large areas as a result of colonialism and the ecological disturbances indirectly brought about by the process.

The colonialists themselves seldom noted the ecological disturbances. Just as they brought missionaries to save the savages from heathendom, they sent modern medicine and doctors to cure them from their "tropical" diseases. In this way the relation of health to economic and social processes was almost forgotten, and effectively prevented from having any practical effect on health policies. In consequence, health problems are defined as technical problems, rather than political and economic ones. This emphasis was nurtured by the progress in the medical sciences in the West. The "germ theory" of disease, and the

resultant discovery of the wonder drugs, truly transformed the art of curing. Though not brought about by technology, the almost concurrent improvement in public health in the West gave an apparently rational basis for the new "religion", viz; the belief in the omnipotence of medical technology. The doctors derived their almost deified status from being the "priests" of the new religion. Economics and politics were virtually ignored as factors. Medical technology became the panacea, as when the Health Commissioner of an American City went as far as to state that it matters little if the streets of the city were cleaned or not, provided microbes were kept under control and people were protected against infection by proper vaccination.

Since Independence the Indian Government has pursued health policies which have been giving priority to the training of medical personnel, construction of hospitals, and extension of medical services to the countryside through "Primary Health Centres". But the distribution of these facilities are not "need - based" and hence represents quite an uneven distribution so far. The health policies and the growing number of medical personnel cannot counteract one inconvenient fact: the Indian people are growing more and more disease-ridden. Even if no one can statistically prove


this fact, it is the only possible consequence of another trend: the Indian people are getting poorer and poorer. It is now widely recognised that an increasing proportion live below the officially defined "poverty-line". People eat less, have fewer clothes and worse houses, and live in an increasingly polluted environment. As a consequence they grow weaker and more susceptible to "tropical" diseases.

Epidemiology, thus defined, is the study of the distribution of and determinants of disease frequency in human groups. The systematic search for factors bearing on disease has classically involved analysing a variety of features of the physical environment of man. The term "social epidemiology" are used to qualify studies that attempt to relate social and cultural factors to specific diseases, found in a population or social group. An immediate aim is to demonstrate that the prevalence and/or incidence of disease and its distribution in space in a social system bear a relationship to such factors as cultural exclusivity, ethnic identity, social class or any other variable that may be linked to social processes.

Health, however, is not only a socially defined, but also a socially produced natural reality. This perspective on health follows from the more general perspective of


historical materialism, which refuses to view Nature and Culture as two separate and unrelated entities. Nature and Culture are seen as dialectically interrelated through the activities of man. For our actions are not only symbolical and meaningful acts of communication, but they are also part of the material world. They structure and transform Nature, both conciously when we realise our intentions by transforming it, and unconciously through the multifarious effects of our actions and our mental processes on the material world, including our own body. We start processes, and become part of processes which we do not control, and which take place and develop independently of our cognition of them. Though largely unaware of it, mankind creates and recreates his physical milieu. This perspective is also applicable to the science of ecology, formulated by Marx and Engels more than a hundred years ago.

The health of a worker is a function of his overall well-being; his cultural, social and economic situation is reflected in his and his family's health condition. His health condition is again reflected in his efficiency and productivity.

The health condition of a jute mill worker was never a question of serious investigation. The Factory Inspector's report bore ample testimony to this absence of a spirit of investigation. This was an important question from the Government of India's point of view, carrying obvious implications for the dietary conditions, the standard of living, the wages situation, and the efficiency of the
workers. None of these latter considerations, however, ever influenced the Bengal Factory Inspectors. For years, their reports carried a section called "General Health of the Operatives" where the workers' health was always described as "good" if there had been no epidemics. "The general health of operatives has been good", said the Factories Act report for 1928, "no outbreak of disease in epidemic form having been reported during the year". Why was health a question of epidemics, and not one of diet, nutrition or standard of living? The following quotation from the factory inspection report for 1921 suggests the answer:

The Naihati Jute Mills at Naihati, Baranagar Jute Mills at Baranagar .......... reported a shortage of labour in the month of August owing to outbreaks of malaria and influenza. The shortage .......... was not serious and the general health of the operatives ........ has on the whole been satisfactory". In the same report of 1923 it is said that "The general health of the operatives during the year ........ has been comparatively good, no shortage of labour on account of epidemic diseases or sickness having been reported by the mills".9

In the Jute Mills, health care for workers was essentially aimed at prevention of epidemics. Information regarding diseases treated free by the doctors of 23 Jute Mills in 1928 was collected by the Government of Bengal for submission to the Royal Commission of Labour. It is interesting to observe that none of the diseases treated was


7. ibid, September, 1928, A 12 - 15.

8. ibid, June, 1921, A 29 - 30.

9. ibid, August, 1924, A 34 - 37.
due to malnutrition; chief among them were cholera, smallpox, malaria, typhoid fever, relapsing fever, kala-azar, dysentry, diarrhoea, pneumonia, tuberculosis and respiratory diseases "other than infectious". Clearly, most of them were infectious diseases and water or food-borne diseases, capable of affecting a number of people at the same time, especially under conditions of overcrowding.

In other words, attention was confined to diseases that were potentially epidemic. It was epidemics which caused large-scale absenteeism and thus affected production. Speaking to IJMA in 1918, Alexander Murray, then Chairman of the Association, referred to a proposal put up by mills "in four different municipalities up the river ........... to spend upto Rs.100/- per loom" in improving workers' housing, and remarked that he could "imagine no more profitable investment from a mill labour point of view".

Clearly, to Murray, as to the jute industry, the measure of the severity of epidemics was the drop in production. Therefore, epidemics became the most important issue whenever the employers turned their minds to the question of the health of the workers.

In a 1921 report entitled "The Conditions of Employment of women before and after child-birth in Bengal industries" by Dr. D.F. Curjel of the Indian Medical Service, confirms

10. West Bengal State Archives, Commerce Department, Commerce Branch, April, 1930, A7 - 12.


12. West Bengal State Archives, Commerce Department, Commerce Branch, April, 1923, p. 77.
this attitude. Of the 25 jute mills Curjel visited, none were able to offer any information about the number of children born to the female workers. Curjel was struck by the Manager's lack of interest in the working class conditions. The Manager of the Soorah Jute Mill "did not concern himself with conditions affecting lives of his workers". The Manager of the Union Jute Mill who "had been in charge 6 months", told Curjel that "he had been too busy to think about the health of the workers". Even more telling was the reception that Curjel had from the Manager of the Belliaqhat Jute Mill. The Manager "would scarcely discuss" the subject of labour conditions with Curjel. He said "he did not concern himself with the workers' lives".

One implication of such an outlook was that large areas of working class life remained out of view. Once again, the health question illustrates the problem. As a result of the recommendations of the Royal Commission of Labour, an investigation was carried out into the condition of women workers in jute mills in 1931-32. The investigating doctor discovered several diseases that have never been found their way into the records of mill dispensaries. She noted that many of the worker's children had "a tendency to rickets". This was "probably due to deficiency of vitamin D in the food". Although many children looked 'fine' "in the first year of life", a "healthy appearance was less common" after that age. In the lines of one mill, she came across a young girl "obviously dying of a type of anaemia", but "she was having no treatment". She noticed "several cases of
children reduced to almost extremity". Another time she saw "a woman suffering from blindness and being obliged to stop working". The investigating doctor remarked that "none of these cases were known to the mill doctors who always accompanied me when I visited the lines".

The same type of apathy regarding the health problems of the workers are found even today among the officials of the jute mill. The health problem of the worker is of least priority even today. The employers, the factory inspector, the mill doctor, the trade unions and even the workers have contributed to the negligent attitude towards health problems. It is regarded as a problem of secondary nature to the jute people.

In the following chapters the morbidity pattern of the worker and the various components of health (e.g. addition, inoculation etc.) were studied. The various types of health care pattern, the types of medicine consumed for various diseases etc. were also discussed. Moreover, an attempt had been made to find a casual relationship between morbidity and various socio-economic parameters.

DEMOGRAPHIC COMPONENTS OF HEALTH

To describe the health situation of the jute mill workers of both mills, it should be kept in mind that the disease panorama, though mainly a natural or biological reality, is as well as socially defined and socially produced.

13. West Bengal State Archives, Commerce Department, Commerce Branch, July, 1932, A 2 - 6.
While discussing the disease panorama both in biomedically and socio-medically, the background of the present health situation of the workers' households are necessary to know. This bio-medical infrastructure of the individual workers are discussed in this chapter.

Various demographic features e.g. age at marriage and fertility pattern of the workers are useful in providing a complete background picture of the bio-medical infrastructure of the jute mill workers. These factors have both direct and indirect effect on the health pattern of various family members of the jute mill workers' households.

AGE AT MARRIAGE

The age at marriage has the greatest impact on the overall health status of the mother and children. Early marriage causes early childbirth and thus affects the general health of the womenfolk. Since the reproductive potential of a woman is increased drastically with an early marriage, it is also a reason behind a large number of children and causes an increased number of child mortality in an indirect manner. As most of the jute mill workers are from rural areas of backward states where child marriage is still practised, the age of marriage of the workers and their wives are usually below the requisite age. In Meghna Jute Mill 65.7% and in Birla Jute Mill 62.6% of the total workers had child marriage. Though the actual age of the bride and the groom could not be known accurately, the general trend in the workers' families are those of child marriage.
FERTILITY PATTERN

Fertility is usually measured on the basis of either the number of births over a period of time or the average number of children born to a woman during her reproductive span of time. The reproductive potential of a woman marrying at 17 years of age is estimated as approximately 13 children, but this maximum is very rarely achieved.

Fertility depends upon several factors:

a) Age of marriage - Surveys indicate that females who marry after the age of 19 have a lower fertility than those who marry earlier. An average Indian woman has her first child by the age of 19, her second and third child between 20 - 24 years, her fourth and fifth child between 25 - 28 years and her sixth child between 30 - 34 years.

b) Education - There is a negative association between fertility and educational status. A survey has shown that the average number of children born to an illiterate woman was 6.6 while those educated upto the University level was 2.


c) Economic status - The National Sample Survey in India has shown that fertility decreased with an increase in per capita household expenditure.

d) Rural-Urban differences - Studies indicate that the rural-urban differences in fertility were small and insignificant.

The fertility pattern of the workers of jute mills depends on various factors, some of them are medical ones and some of them are socio-economic. The combination of these factors create some behavioural changes that lead to the present pattern of fertility. Due to these reasons, we find differences in fertility rates. Different behavioural patterns regarding fertility are also found in various linguistic and religious communities.

In Meghna and Birla Jute Mills, the fertility rate of the households of the workers follows a specific pattern. The percentages of different number of conceptions of the worker's household are given below:

<table>
<thead>
<tr>
<th>Number of conceptions</th>
<th>Meghna Jute Mill (%)</th>
<th>Birla Jute Mill (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 3</td>
<td>20.8</td>
<td>40.0</td>
</tr>
<tr>
<td>4 - 5</td>
<td>43.2</td>
<td>34.6</td>
</tr>
<tr>
<td>6 and above</td>
<td>34.2</td>
<td>21.7</td>
</tr>
</tbody>
</table>


18. ibid, p - 31.
In Meghna Jute Mill, only 20.8% of the total number of households have less number of conceptions (1 - 3). The maximum percentage (43.2%) of conceptions are concentrated in the 4 - 5 group followed by 34.2% of household in the 6 and above group. There is a tendency of a larger number of conceptions among the workers of Meghna Jute Mill.

In Birla Jute Mill, the trend is reversed. Here most of the families tend to have less number of conceptions. A large section of households (40%) have the least number of conceptions (1 - 3). This is followed by 34.6% of the total households having 4 - 5 conceptions and only 21.7% of the total households with 6 and more conceptions.

The reasons behind this difference in the number of conceptions between both mills are numerous. Most of the reasons are due to differences in behavioural patterns related to various socio-economic factors, most of which are indirectly related. As educational levels and income levels of workers are more or less same in both mills, we may conclude that education and income are not the major criteria behind the number of conceptions in this case.

There is a myth that Muslims have more children than Hindus, because the religion of Islam does not approve of contraceptions. In Meghna Jute Mill there is a majority of Muslim workers. The bulk of the workers of Meghna Jute Mill are from rural areas of Bihar and Eastern Uttar Pradesh, which are economically and culturally backward states. On the other hand, the workers of Birla Jute Mill are mostly from rural areas of West Bengal and Bangladesh.
There might be some cultural difference of the workers causing this behavioural difference.

**CHILD MORTALITY**

The death rate is very high among children in India. While children in the age group 0 - 5 years constitute only about 13% - 15% of the total population, they contribute to nearly 44% of the total death in the country, of which 22% are those of children below the age of 1 year. The important causes of death in children in the age-group below 5 years are:

a) Viral infections: Smallpox, Measles;
b) Bacterial: Diarrhoea, Whooping cough, Diphtheria, Tetanus, Enteric fever, Tuberculosis;
c) Nutritional: Malnutrition and
d) Miscellaneous: Accidents and Poisoning.

Most of these conditions are generally preventable by immunization, nutritional and health education services.

Infant mortality rate is defined as "the number of infant deaths per 1000 live births in one year". Infant means a child who has not attained the age of one complete year. Infant mortality rate has been acknowledged by demographers as "a most sensitive index of the health and level of living of a people".

Demographers have given infant mortality a separate treatment because of the following reasons:

i) infant mortality is the largest single age-category of mortality;

ii) death at this age are due to a peculiar set of diseases and conditions to which the adult population is less exposed or less vulnerable;

iii) infant mortality is affected rather quickly and directly by specific health programmes and hence may change more rapidly than the general death rate.

The problem of infant mortality is one of multiple causation. The causes are generally grouped under four heads: (1) Medical Causes, (2) Biological Causes, (3) Economic Causes and (4) Cultural and Social Causes. The medical causes are the immediate causes, and the rest are the remote or root causes. All these causes go together and threaten the survival of the infant.

(1) MEDICAL CAUSES - The infant mortality which occurs within the first four weeks is called neonatal mortality or early infant mortality; that which occurs between 1 - 12 months is called postneonatal mortality or late infant mortality. This distinction is helpful because the causes that operate during these phases are different. Neonatal mortality is chiefly due to prenatal and natal influences; and postneonatal mortality is due to environmental influences. The


22. ibid, p - 298.
major causes of neonatal mortality are -
(a) low birth weight, (b) birth injuries and asphyxia;
(c) congenital abnormalities; (d) haemorrhagic diseases and neonatal infections.
On the other hand, the major causes of post neonatal mortality are -
(a) gastroenteritis and dysentry; (b) respiratory infection; (c) various communicable diseases e.g. smallpox, whooping cough etc; (d) malnutrition and (e) miscellaneous causes e.g. accidents, developmental defects etc.

2. BIOLOGICAL CAUSES -
The following biological causes may be identified:

a) Age of the mother: There is a close relationship between the age of the mother and the life-span of the child. Infant mortality rates are greater when the mother is either very young or relatively older.
b) Order of birth: The highest mortality is found among first baby births, and the lowest among second births. The risk of infant mortality tends to increase after the third birth. The fate of the fifth child is always worse than the fate of the third child.
c) Interval between births: The shorter the time interval between births, the greater the risk to the survival of the infant.
d) Multiple births: Infants born in multiple births face a greater risk of death than do those in single births, due largely to the greater frequency of
prematurity among the former;

e) Family size: The risk of death increases with the size of the family. The size of families often varies, inversely with the degree of social and economic advancement, the largest families being found among the under-developed societies.

f) High fertility: There is a relationship between infant mortality and general fertility. In most under-developed societies, high fertility and high mortality rates go together.

3. ECONOMIC CAUSES - Studies in India have shown that nearly 90% of the infant deaths occur among the poorest families. In the cities of Bombay and Calcutta, statistics reveal that infant mortality rates are highest in the slums and lowest in the richer residential localities. The economic factor influences the state of nutrition, standard of living and the health of the people. There is medical evidence that prenatal nutrition has an effect on the health and size of the infant.

4. CULTURAL AND SOCIAL CAUSES - The major social causes affecting infant mortality are:

   a) Religion and Caste: An examination of infant mortality among Indian Christians, Hindus


24. ibid, p - 213.
and Muslims revealed a very low rate for Indian Christians, a high rate for Muslims and highest for Hindus. These differences are attributed to socio-cultural patterns of living involving age-old habits, customs, traditions affecting cleanliness, eating, clothing, child care and almost every detail of daily living.

b) Illiteracy - Infant mortality is highest among the illiterates.

c) Ignorance of child care: The art of child care has to be learnt; many a mother has learnt it by paying a heavy price in the death of one or two of her infants.

d) Sex of Child: In most parts of India, female infants receive far less attention than the male infants. In many families, the birth of a female child is unwelcome. This is especially the case where there already are several female children.

e) Broken families: Infant mortality tends to be high in families where the mother or father has died or separated.

f) Illegitimacy: The illegitimate baby has a higher mortality risk than the baby born in wedlock. It is because the illegitimate baby is often neglected and not taken proper care of.

g) Brutal habits and customs: Certain primitive customs and habits greatly influence the infant mortality. Branding of the skin, application of
DISTRIBUTION OF WORKERS HOUSEHOLDS BY CHILD MORTALITY

MEGHNA JUTE MILL

BIRLA JUTE MILL

NO. OF CHILD MORTALITY

- 1-2
- 3+
- NIL
home made things to the cut end of the umbilical cord, frequent purgation, faulty feeding customs and early weaning are some of the cultural practices associated with high infant mortality in India. Female infanticide is still practiced in various parts of India.

h) The indigenous dai: The traditional dai or midwife in India is responsible for the high infant mortality in India. She is usually illiterate and divorced from all knowledge of rules of hygiene.

i) Lack of trained personnel: Shortage of trained personnel like midwives, dais and health visitors is another cause of high infant mortality in India.

j) Bad environmental sanitation: Infants are highly susceptible to bad environmental sanitation. Lack of a safe water supply, poor housing conditions, bad drainage, overcrowding etc. all increase the risk of infant mortality.

In the case of Meghna and Birla Jute Mills, child mortality is quite prevalent. In Meghna Jute Mill 45.1% and in Birla Jute Mill 29.9% of total households reported of 1 or more infant deaths in the family. The percentage of child-deaths in the worker's households of both mills are given below:

<table>
<thead>
<tr>
<th>Number of child death</th>
<th>Meghna Jute Mill (%)</th>
<th>Birla Jute Mill (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 2</td>
<td>33.7</td>
<td>22.1</td>
</tr>
<tr>
<td>3 and above</td>
<td>11.4</td>
<td>7.8</td>
</tr>
</tbody>
</table>
Compared to Meghna Jute Mill, there is a marked lack of infantile death in Birla Jute Mill. While 33.7% of the total households in Meghna Jute Mill have more than one infantile death, the corresponding percentage of Birla Jute Mill is 22.1%. A smaller percentage of infantile death is found in Meghna Jute Mill (11.4%) in the case of households with 3 or more infantile deaths. The corresponding percentage of Birla Jute Mill is 7.8%.

The comparative lack of child mortality in Birla Jute Mill might be due to many reasons. An overall better housing conditions, better sanitation facilities, better medical facilities and lesser number of children cause better health of both mother and child. The ethnic and religious differences of the workers of both mills might be also behind this differences of infantile mortality.

LIVE BIRTHS

Live births are closely related to the incidence of perinatal mortality among Indian families. The term perinatal period was defined by W.H.O. as the period from the 28th week of pregnancy until the end of the first week of life. With the decline in infant mortality to low levels in many developed countries, perinatal mortality assumed importance as a sensitive index of the efficiency of mother and child care facilities.

The statistics of perinatal mortality is neither uniform nor accurate and very difficult to obtain. The

causes of perinatal mortality can broadly be arranged into four main groups -

1) **Antenatal Causes** -
   a) Maternal diseases e.g. hypertension, cardiovascular diseases, diabetes, tuberculosis, anaemia etc.
   b) Pelvic diseases;
   c) Anatomical defects;
   d) Endocrine imbalance and inadequate uterine preparation.
   e) Blood incompatibilities;
   f) Malnutrition;
   g) Toxemias of pregnancy;
   h) Antepartum haemorrhages;
   i) Congenital defects;
   j) Advance maternal age.

2). **Intranatal Cause** -
   a) Birth injuries;
   b) Asphyxia,
   c) Prolonged effort time.

3) **Postnatal Causes** -
   a) Prematurity;
   b) Respiratory distress syndrome;
   c) Infections of various types.

4) **Unknown Causes** - In some cases, the causes are not clinically ascertainable.

In India perinatal mortality can be controlled by various ways - the prime among them are adequate medical
DIAGRAM 25

DISTRIBUTION OF WORKERS HOUSEHOLDS BY NUMBER OF LIVE BIRTHS

MEGHNA JUTE MILL

BIRLA JUTE MILL

NUMBER OF LIVE BIRTHS

1-3
4-5
6+
facilities and sanitary living conditions. The percentage of various numbers of live births of both mills are given below:

<table>
<thead>
<tr>
<th>Number of Live births</th>
<th>Meghna Jute Mill ( % )</th>
<th>Birla Jute Mill ( % )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 3</td>
<td>34.3</td>
<td>52.5</td>
</tr>
<tr>
<td>4 - 5</td>
<td>49.7</td>
<td>34.1</td>
</tr>
<tr>
<td>6 and above</td>
<td>16.0</td>
<td>13.4</td>
</tr>
</tbody>
</table>

In Meghna Jute Mill 34.3% of the total households report 1 - 3 live births and the corresponding percentage of Birla Jute Mill is 52.5%. The percentage of households having 4 - 5 live births increases in Meghna Jute Mill (49.7%) and decreases in Birla Jute Mill (34.1%). The smallest percentage of households report live births of 6 and above, the percentage of Meghna and Birla Jute Mills being 16% and 13.4% respectively.

From this table it is evident that live births are less in Birla Jute Mill than in Meghna Jute Mill i.e. they correspond to the trend of conceptions in both Mills. Though there are child mortality in both mills, the percentages of it are more in Meghna Jute Mill than in Birla Jute Mill. It is thus proved that in Meghna Jute Mill medical facilities are scarce and insanitary living conditions are more prevalent than in Birla Jute Mill.

The reasons of mortality and morbidity start taking roots before the child is even born. We can thus conclude that the morbidity pattern of the households of the workers depends largely on the health conditions described in this chapter.