INTRODUCTORY STATEMENT

Though death is a clearly defined event, illness is hard to define. The reasons are:

1. Illness is not a clearly defined event, whereas death is an end-point in the natural course of disease;
2. Illness has many facets - it may occur many times in the same individual, generally known as "episodes" or "spells" of sickness, e.g. influenza, cough and cold etc;
3. Illness has a duration ranging from a few hours (e.g. food poisoning) to several years (e.g. leprosy) to a lifetime (e.g. diabetes);
4. Illness varies in severity from mild to severe;
5. Illness has a 'spectrum' ranging from inapparent and sub-clinical cases to severe cases. The inapparent and sub-clinical cases escape recognition, it is therefore impracticable to give a definition of illness which would be applicable to all diseases. In the sixth report of the W.H.O. Expert Committee on Health Statistics, illness or morbidity was defined as "any departure, subjective or objective, from a state of physiological well-being."

Mortality statistics give a fair picture of the distribution of disease as a cause of death, but they cannot provide an estimate of the load of sickness and disability that precedes death. Furthermore, not all diseases lead inevitably in themselves to death. In many chronic conditions of low fatality (e.g. mental diseases, 2 arthiritis) mortality statistics are virtually of no use. Morbidity statistics are more useful than mortality statistics as an index of sickness and health.

Since morbidity has several facets its measurement is somewhat complicated, in contrast with the measurement of mortality or death which is a straight forward event. Morbidity is measured in terms of the following units:

a) persons who are ill;

b) spells of sickness experience and

c) duration of illness.

Two rates are commonly used for measuring the frequency of illness in a population, the incidence and prevalence rates. Incidence rate is defined as the frequency of occurrence of new illness in a population. The rate refers only to new cases, during a given period, in a specified population.


4. ibid, p - 628.
Prevalence is the total number of cases (old and new) at a given point of time. If the prevalence is recorded at a stated moment - it is called point prevalence, if it is recorded during a given period of time - it is called period prevalence. Prevalence rate is particularly useful in the statistical study of chronic disease. Prevalence is determined partly by incidence and partly by the duration of disease. The prevalence rate may be calculated in terms of (a) the persons affected or (b) the spells of sickness.

While dealing with morbidity statistics, it should be kept in mind that in an under-developed country like India, most of the illnesses are undetected. The poor man tries to avoid medication as long as possible. When the disease turns chronic and unbearable then only he visits a doctor. In rural areas and in some urban areas, the doctors are often not qualified and there is hardly any follow-up of the cases. The women and children are often not getting any medical care whatsoever. A lot of gender and class bias is found among the Indian household in general.

While discussing morbidity pattern of a section of population, it should be kept in mind that various diseases affect various persons under similar conditions. The reasons are various - ranging from genetic characteristics and childhood upbringing to recent living and working conditions. As the workers are mostly migrant, the health conditions prevailing at their place of origin and the

5. ibid, p - 628.
diseases prevalent in those areas have an important bearing on their present health conditions. Hence the past record of their diseases should be studied along with the diseases he is suffering from at present. The health and diseases of the workers' household members affect the workers' health in many ways - the infectious diseases of the household members infect the worker as well and vice versa. The medical treatment affects the worker monetarily; he is often indebted due to various types of sicknesses of his household members. In Meghna Jute Mill 28.3% and in Birla Jute 23% of the total households are in debt due to sickness. Hence, while discussing the worker's health problems, the past history of the morbidity pattern of his household as well as the present situation should be considered in order to get a complete picture.

The diseases of the workers can be classified under various groups. They are -

a) Water-borne disease e.g. typhoid, cholera, diarrhoea, amoebiasis, hepatitis, enteric diseases etc;

b) Vector-borne diseases e.g. malaria, filaria, dengue, kala-azar, chicken pox etc.;

c) diseases due to malnutrition e.g. anaemia, rickets, gastritis, tuberculoseis;

d) respiratory diseases e.g. asthma, bronchitis etc;

e) ergonomic problems e.g. sciatica, arthritis, spondilitis, nervous disorders etc.

f) skin disease;

g) deafness and
h) miscellaneous e.g. diabetes, cancer, heart problems, liver problems, urological problems etc.

Most of these diseases are caused due to various socio-economic as well as physiological reasons. Overcrowding, insanitary living conditions etc. are prime causes behind these illnesses.

The water-borne (or water-related) diseases are many and varied. The common diseases of the worker are cholera, typhoid, amoebiasis, hepatitis and enteric diseases. Most of the workers suffer from chronic symptoms of various forms of these ailments. These diseases are usually generated from unhygienic and insanitary living conditions and lack of purified drinking water. Overcrowding is a main factor behind the spread of such diseases. The causal factors of these diseases are divided into three groups:

1) Those caused by the presence of an infective agent -
   a) Viral - Infectious hepatitis, poliomyelitis.
   b) Bacterial - Cholera, Bacillary Dysentry, Typhoid fever,
   c) Protozoal - Amoebiasis, Giardiasis,
   d) Helminthic - Roundworm, Whipworm, Threadworm, Hydatid disease,
   e) Leptospiral - Weil's disease.

2. Those due to the presence of an aquatic host -
   a) Water multiplied - Schistosomiasis (Vector - snail),

b) Not multiplied - Guinea worm, Fish tape worm (Vector - cyclops).

3 Those due to the presence of toxic and inert substances -

a) Toxic substances - Lead, arsenic, mercury etc.

b) Other substances - Fluorides and nitrates.

Since the workers of the jute mills lack proper drinking water facilities and often bathe in ponds and in river Hooghly polluted with industrial wastes, the risk of health problems is high.

In the terminology of communicable diseases, the word "vector" means an "arthropod or other invertebrate which transmits infection by inoculation into or through the skin or mucous membrane by biting, or by deposit of infective materials on the skin or on food or other objects". Vectors transmit diseases two ways:

1) Mechanical transmission - The disease agent is carried mechanically on the legs or body of the insect, e.g. diarrhoea, dysentry, and typhoid fever by the housefly;

2) Biological transmission - This may be of three types:

i) Propagative - The disease agent multiplies and increases in the insect vector, e.g. plague bacilli in rat fleas;

ii) Cyclo-propagative - The parasite undergoes a cycle of development in the body of the insect host with multiplication. In the case of malaria parasite

7. ibid, p - 257.
in mosquito, the parasite not only undergoes a cycle of development in the mosquito, but increases its progeny;

iii) Cyclo-developmental - The parasite undergoes a cycle of development without multiplication, e.g. filaria parasite in culex mosquito and guinea worm embryo in cyclops. The period of time necessary for the development of the parasite in the arthropod host is called 'extrinsic incubation period.' The extrinsic incubation period depends on the environmental temperature and varies from vector to vector. Among the jute mill workers, these diseases are generally due to insanitary living and overcrowding. Malaria, filaria, dengue, kala-azar and chicken pox are quite common among the workers. Epidemics of malaria are quite frequent.

Among the workers' households of jute mills, malnutrition and related diseases are widespread. Malnutrition is generally defined as "a pathological state resulting from a relative or absolute deficiency or excess of one or more essential nutrients, this state being clinically manifested or detected only by biochemical, anthropometric or physiological tests.

Four forms of malnutrition have been distinguished. They are -

a) Under-nutrition: This is the condition which results when insufficient food is eaten over an extended period of time. In extreme cases, it is called starvation;

b) Over-nutrition: This is the pathological state resulting from the consumption of excessive quantity of food over an extended period of time. The high incidence of obesity and diabetes in western societies is attributed to overnutrition;

c) Imbalanced diet: It is the pathological state resulting from a disproportion among essential nutrients with or without the absolute deficiency of any nutrient;

d) Specific deficiency: It is the pathological state resulting from a relative or absolute lack of an individual nutrient.

India is a typical example of a poor country where malnutrition is endemic, especially among the poorer sections. The Indian dietary pattern is generally ill-balanced with an excess of carbohydrate and very little protein. The consequences of malnutrition are -

i) retarded physical and mental development;

ii) lower productivity in adulthood and

iii) occurrence of a wide range of nutritional deficiency diseases e.g. protein-caloric

9. ibid, p - 29.
deficiency and deficiency disease due to lack of vitamins, calcium and iron.

The ecological factors related to malnutrition are various e.g. conditioning influences, cultural influences, socio-economic factors, food production, medical and educational services. While discussing a cross-cultural section of population, discussion of the various facets of mal-nutrition is necessary.

1) **Conditioning influences** - Malnutrition makes the individual more susceptible to infection and infection in turn is one of the principal contributory factors of mal-nutrition. Infections such as diarrhoea, dysentry, amoebiasis, intestinal parasites and worms have been contributory factors in the etiology of protein-caloric malnutrition and nutritional anaemias. Conversely, malnutrition contributes to increased morbidity and mortality from infection.

2) **Cultural influences** - Malnutrition is not always due to shortage of food. Too often there is starvation in the midst of plenty. People choose poor diets when good ones are available because of cultural influences which vary widely from country to country and from region to region. The following are some of the well known cultural influences in the etiology of malnutrition -

   a) **Traditional customs and habits** : Food habits are among the oldest and most deeply entrenched aspects of any culture. The family plays an important role in shaping the food habits, and
these habits are passed from one generation to another. Many customs and beliefs are based on false ideas and ignorance. Millions of people in India eat white polished rice because it has a great historical, psychological and emotional significance. During the Second World War, when what was made available in place of rice in South India, people refused to buy wheat because it was not their staple cereal.

b) Religion - Religion has a powerful influence on the food habits of people. Intake of meat, fish and eggs is prohibited by certain religions or castes in India. Some people do not eat certain vegetables like onions on religious grounds. In the case of some communities like the Jains, even the time of eating is fixed. Fasting is prescribed by certain religions. Prolonged fasts weaken the individual's resistance. Thus religion is an important factor responsible for a certain amount of malnutrition in India.

c) Food fads - In the selection of foods, personal likes and dislikes play an important part. These are called "Food-fads". The food-fads may stand in the way of correcting the nutritional defects.

d) Cooking practices - like draining the starch out of boiled rice, deep-frying the vegetables etc. influence the nutritive value of foods.
e) Disease and food - Certain foods are considered to create trouble for the body in different areas e.g. in Gujarat, valuable foodstuff such as dals, leafy vegetables, rice and fruits etc. are believed to be harmful for the nursing mother.

f) Child-rearing practices - These vary widely from region to region and have an important bearing on the nutritional status of infants and children.

g) Psychological factors are sometimes responsible for malnutrition. Various malnutritional diseases like anorexia have strong psychological reasons.

h) Miscellaneous - In India, men eat first and women eat last and the leftovers. Consequently, the health of women in these societies is affected. Chronic alcoholism is another factor which may lead to serious malnutrition.

Socio-Economic Factors - Malnutrition is mainly caused by various socio-economic factors. They are -

a) Poverty - Food is a purchaseable commodity, it can be had only for a price. Protective foods such as eggs, meat, fish, milk and fruits are relatively costly and therefore do not find a place in the diet of the poor people. Insufficient purchasing power is therefore a very important basic factor in the prevalence of malnutrition.

b) Ignorance - Ignorance is at the root of most health problems in India. It prevents farmers
from making full use of his resources. The ignorant housewife is not capable to provide the special needs of infants, children, pregnant and nursing mothers and cannot allocate the existing limited resources of her family.

c) **Prices of foodstuff** - Even if there is a surplus of food, people may not afford to go in for a balanced diet because of the economic handicap. In India, whenever the prices are lowered, the food consumption increases.

d) **Bad harvesting and storage facilities** lead to mass wastage of food.

e) A general **population increase** nullifies the benefits of increased agricultural production.

f) **Urbanization** is leading to greater dependence upon processed foodstuffs with resultant hazards from food additives and loss of nutrients.

g) **Lack of proper medical and educational services** lead to a general malnutrition of Indian population.

All these factors influence the general health of the worker of the jute mill and their household members. Lack of income, education and inadequate health services lead to a general atmosphere of malnutrition. Diseases due to malnutrition are more widespread among women and children.

Respiratory diseases are quite widespread among the workers of jute mills. They include diseases like asthma, bronchitis, chronic cough etc. A large number of workers
and sometimes their family members complain of various types of chronic respiratory diseases. The dusty atmosphere of the mills, the exposure to jute dust and the general dusty atmosphere of the slum neighbourhood are responsible for the spread of respiratory diseases.

Ergonomic stresses and various physical disorders related to these have generally been reported from the workers attending various machines in the jute mill. The diseases vary from person to person. Nervous disorders, aches and pains at joints, sciatica, spondilitis etc. are quite common. These problems increase the chance of accidents and reduce the over-all health and efficiency of the worker, which in turn affect the productivity. Partial and total paralysis of limbs take place in some workers.

In the jute mills occupational dermatitis is a big health problem. The causes are -

i) physical e.g. heat, moisture, friction, pressure etc.

ii) chemical e.g. acids, alkalies, dyes, grease, tar, pitch etc.

iii) biological e.g. living agents, viruses, bacteria, fungus etc. and

iv) plant products e.g. jute dust.

The dermatitis - producing agents are further classified into -

a) Primary irritants and (b) Sensitizing substances.

Primary irritants cause dermatitis in workers exposed in sufficient concentration and for a long
enough period of time. On the other hand, allergic dermatitis occurs only in a small percentage of cases, due to sensitization of the skin.

Occupational dermatitis is largely preventable if proper control measures are adopted:

1) Pre-selection - The workers should be medically examined before employment, and those with an established or suspected dermatitis or who have a known tendency to skin diseases should be kept away from jobs involving a skin hazard.

2) Protection - The worker should be given adequate protection against direct contact by protective clothing, long leather gloves, aprons and boots. The protective clothing should be frequently washed and maintained properly.

3) Personal hygiene - There should be available a plentiful supply of warm water, soap and towels. The worker should be encouraged to maintain personal hygiene. Adequate washing facilities are a statutory obligation under the Factories Act.

4) Periodic inspection of occupational dermatitis should be carried on by the proper medical authorities.

These preventive methods are generally not available in the jute mills. Therefore, various types of skin diseases, ranging from itching to eczema are common among the workers. A typical skin disease is found among those workers who
handle batching oil in the batching department. It is a kind of eczema that causes pigmentation and scars of the skin. The scars often turn into skin cancer needing operation. The skin diseases are further multiplied due to insanitary living conditions, overcrowding and malnutrition.

Quite a number of workers suffer from various degrees of deafness. This is due to noise pollution inside the factory.

Other than these diseases, the workers and their household members suffer from heart diseases, diabetes, cancer, liver problems, abnormalities of blood pressure etc.

**MORBIDITY PATTERN OF THE JUTE MILL WORKERS**

The diseases of the worker differ from the diseases of his household members in the sense that the workers suffer from some diseases typical to their nature of working and the working conditions. The worker thus suffer from occupational hazards at the workplace as well as environmental hazards at the workplace and at home. Hence, the workers suffer from more diseases than their household members do.

While discussing the morbidity pattern of the jute mill workers, it should be kept in mind that only those diseases receiving medication are being discussed here. Minor problems are overlooked by the worker as well as in this study though these problems might be having the potentialities of turning serious in the future.
PAST MORBIDITY PATTERN OF THE WORKERS

MEGHNA JUTE MILL

BIRLA JUTE MILL

DISEASE TYPE

WATER BORNE
VECTOR BORNE
MALNUTRITIONAL
RESPIRATORY
ERGONOMIC
SKIN
DEAFNESS
OTHERS

SCALE: 1 cm = 10 UNITS
The morbidity pattern of the worker in the past is very necessary to consider while discussing the overall health problems of his household. The diseases of the workers are classified according to the basic causes of their occurrences. The multiple-cause diseases are generally listed under the most prevalent reason. The percentages of past occurrences of various diseases of the workers of both mills are given below:

<table>
<thead>
<tr>
<th>Disease types</th>
<th>Meghna Jute Mill (%)</th>
<th>Birla Jute Mill (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water-borne</td>
<td>50.5</td>
<td>29.5</td>
</tr>
<tr>
<td>Vector-borne</td>
<td>21.6</td>
<td>16.5</td>
</tr>
<tr>
<td>Malnutritional</td>
<td>10.0</td>
<td>5.2</td>
</tr>
<tr>
<td>Respiratory</td>
<td>5.5</td>
<td>2.1</td>
</tr>
<tr>
<td>Ergonomic</td>
<td>1.6</td>
<td>0.4</td>
</tr>
<tr>
<td>Skin diseases</td>
<td>1.1</td>
<td>-</td>
</tr>
<tr>
<td>Due to noise</td>
<td>0.5</td>
<td>-</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>9.2</td>
<td>46.3</td>
</tr>
</tbody>
</table>

Among the workers of Meghna Jute Mill most of them suffered from water-borne (50.5%) and vector-borne (21.6%) diseases. It is followed by malnutrition (10.0%) and miscellaneous diseases (9.2%). Insanitary living and malnutrition are the root causes of the morbidity pattern of workers in Meghna Jute Mill.

In Birla Jute Mill, the morbidity pattern of the workers is somewhat different. Miscellaneous diseases are found among the largest section (46.3%) of the workers.
Next to that water-borne diseases (29.5%) are quite prevalent, followed by vector-borne diseases (16.5%). Malnutrition and other diseases are negligible.

The differences in the morbidity pattern between both mills signify a lot. It means that better living conditions, sanitation facilities and better income facilities are available to the workers of Birla Jute Mill. It helped in improving the overall health condition of the workers. The differences in the diseased pattern enhance the different types of living conditions of the workers in these two mills. As in Birla Jute Mill 68.7% of the total households have drinking water facilities and 70% of the total households have separate toilet facilities (in Meghna Jute Mill, the percentages of households having drinking water facilities and separate toilet facilities are 1.6% and 1.6% respectively) the workers suffer less from water and vector-borne diseases.

The present condition of workers’ health in both mills are quite different from the situation in the past. At present sickness have grown more in number. Against 170 occurrences of diseases of the workers in Meghna Jute Mill in the past, we find 260 disease occurrences at present. For Birla Jute Mill, the occurrences of various diseases increased from 138 to 222. The rate of increase is more in Meghna Jute Mill than in Birla Jute Mill.
PRESENT MORBIDITY PATTERN OF THE WORKERS

MEGHNA JUTE MILL

DISEASE TYPE

BIRLA JUTE MILL

DISEASE TYPE

SCALE: 1 cm = 10 UNITS
At present, the morbidity pattern of the workers of both mills are as follows -

<table>
<thead>
<tr>
<th>Disease types</th>
<th>Meghna Jute Mill (%)</th>
<th>Birla Jute Mill (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water - borne</td>
<td>2.3</td>
<td>2.2</td>
</tr>
<tr>
<td>Vector - borne</td>
<td>23.8</td>
<td>11.2</td>
</tr>
<tr>
<td>Malnutritional</td>
<td>19.6</td>
<td>22.9</td>
</tr>
<tr>
<td>Respiratory</td>
<td>25.7</td>
<td>27.0</td>
</tr>
<tr>
<td>Ergonomic</td>
<td>17.7</td>
<td>19.8</td>
</tr>
<tr>
<td>Skin</td>
<td>3.8</td>
<td>3.1</td>
</tr>
<tr>
<td>Due to noise</td>
<td>1.0</td>
<td>0.8</td>
</tr>
<tr>
<td>Others</td>
<td>6.1</td>
<td>13.0</td>
</tr>
</tbody>
</table>

From this table it is evident that the present-day occurrence of water-borne diseases are much less compared to the past record. Most of the workers suffer from respiratory diseases. In Meghna Jute Mill 25.7% and in Birla Jute Mill 27% of the total workers suffer from various types of respiratory diseases. It is followed by vector-borne, malnutritional and ergonomic diseases. In Birla Jute Mill respiratory diseases (27%) are most common. The prevalence of malnutrition (22.9%) diseases and ergonomic diseases (19.8%) are also quite high. The lack of occurrences of vector-borne diseases in Birla Jute Mill is most probably due to better living conditions and sanitary surroundings. In both mills, the diseases according to prevalence are - respiratory, vector-borne, malnutritional and ergonomic diseases. Most of them are caused by
insanitary working and living conditions, lack of proper
diet, rest and medical care. The past and present
morbidity pattern of the workers - when compared - show very
interesting findings. In the past, workers report of very
few cases of malnutritional diseases. Past records of
respiratory and ergonomic diseases are almost nil. But at
present, those are the main types of disease from which the
workers suffer. This change in the morbidity pattern proves
that the main reasons of workers' ill health are due to the
living and working conditions of the workers. The diseases
are inherent in the nature of the job.

In the workshops of jute mills, the fibrous dust-
filled air produces chest affectations, especially among
workers in the carding and combing sections. The most
common effects of this inhaling of dust are blood-spitting,
hard, noisy breathing, pains in the chest, coughs,
sleeplessness - in short, all the symptoms of asthma ending
in the worst cases of tuberculosis.

The various ergonomic disabilities are due to the
unfavourable influence of the work on the limbs. The
causes generally are :-

a) The inevitable necessity of forcing the worker's
mental and bodily effort to keep pace with a
machine moved by a uniform and unceasing motive
power;

b) Continuing in an upright position during
unnaturally long and quickly recurring periods;
c) Loss of sleep in consequence of too long working hours, pain in the legs and general physical derangement.

Malformations of the spine are very frequent among mill-hands, some of them consequent upon mere overwork, others the effect of the long work upon constitutions originally feeble, or weakened by bad food. Deformities seem even more frequent than these diseases, the knees were bent inward, the ligaments swollen and legs bent. Nervous disorders are also quite common.

In different mill operations, the morbidity pattern of the workers vary according to their specific job in that department. The specific health hazards of the workers in various departments of Meghna Jute Mill in 1991-92 are given in the following table:

<table>
<thead>
<tr>
<th>Name of Water-Deptt.</th>
<th>Vector borne dis-ease</th>
<th>Malnutri- tional disease</th>
<th>Respi- ratory nomic disease</th>
<th>Ergo- nomic disease</th>
<th>Skin disease</th>
<th>Deaf- ness disease</th>
<th>Other disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rawjute</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Batching</td>
<td>18</td>
<td>4</td>
<td>9</td>
<td>4</td>
<td>10</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Preparing</td>
<td>8</td>
<td>5</td>
<td>10</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Spinning</td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>4</td>
<td>-</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Beaming</td>
<td>10</td>
<td>2</td>
<td>8</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Winding</td>
<td>-</td>
<td>6</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Weaving</td>
<td>2</td>
<td>9</td>
<td>19</td>
<td>19</td>
<td>10</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>Sack Sewing</td>
<td>5</td>
<td>2</td>
<td>6</td>
<td>12</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Finishing</td>
<td>6</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

270
In this mill, the incidence of water-borne diseases among the workers is almost negligible. Vector-borne diseases are mostly found among the workers of batching, beaming and weaving departments, though they are more or less generally distributed among the workers of all departments. The same is applicable in the case of malnutritional diseases. Respiratory diseases are also evenly distributed, though the weaving, preparing and batching departments show a slight increase in the incidence of these diseases. In the case of ergonomic diseases; weaving, sack-sewing and beaming departments show the maximum incidence. In these departments, the workers have to work every moment with a machine that involves unusual body position. Skin diseases are mostly prevalent in the batching department.

The prevalence of various diseases among the workers of various mill operations of Birla Jute Mill in 1991-92 is given below:

<table>
<thead>
<tr>
<th>Name of Water-Deptt.</th>
<th>Water-borne Disease</th>
<th>Vector-borne Disease</th>
<th>Malnutritional Disease</th>
<th>Respiratory Disease</th>
<th>Ergonomic Disease</th>
<th>Skin Disease</th>
<th>Deafness</th>
<th>Other Disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rawjute -</td>
<td>5</td>
<td>2</td>
<td>7</td>
<td>4</td>
<td>1</td>
<td>-</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Batching 1</td>
<td>7</td>
<td>4</td>
<td>16</td>
<td>4</td>
<td>4</td>
<td>-</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Preparing -</td>
<td>-</td>
<td>9</td>
<td>12</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Spinning 2</td>
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<td>6</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Beaming 1</td>
<td>3</td>
<td>1</td>
<td>7</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Winding -</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>1</td>
<td>-</td>
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<td></td>
</tr>
<tr>
<td>Weaving -</td>
<td>3</td>
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<td>17</td>
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<td>-</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>SackSewing1</td>
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<td>2</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Finishing -</td>
<td>-</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

271
In Birla Jute Mill, water-borne and vector-borne diseases are less prevalent compared to Meghna Jute Mill, though they are as evenly distributed among various departments. Malnutritional diseases are also evenly distributed but in weaving department they are more prevalent. The batching, preparing and weaving departments show a high incidence of respiratory diseases. It is interesting to note that though weaving department in Birla Jute Mill shows a high incidence of ergonomic diseases, the rest of the departments do not repeat this trend. This is quite unlike the trend showed in Meghna Jute Mill. Skin diseases are also quite few in Birla Jute Mill which is again unlike the other mill.

The past records of the diseases of the household members of the workers are given below. It shows the morbidity history of the respondents in their lifetime.

<table>
<thead>
<tr>
<th>Diseases types</th>
<th>Meghna Jute Mill (%)</th>
<th>Birla Jute Mill (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water-borne</td>
<td>63.6</td>
<td>48.8</td>
</tr>
<tr>
<td>Vector-borne</td>
<td>19.2</td>
<td>23.8</td>
</tr>
<tr>
<td>Malnutritional</td>
<td>8.0</td>
<td>11.9</td>
</tr>
<tr>
<td>Respiratory</td>
<td>4.0</td>
<td>2.8</td>
</tr>
<tr>
<td>Ergonomic</td>
<td>0.9</td>
<td>1.1</td>
</tr>
<tr>
<td>Skin</td>
<td>0.6</td>
<td>-</td>
</tr>
<tr>
<td>Due to noise</td>
<td>0.6</td>
<td>-</td>
</tr>
<tr>
<td>Others</td>
<td>3.1</td>
<td>11.6</td>
</tr>
</tbody>
</table>
PAST MORBIDITY PATTERN OF HOUSEHOLD MEMBERS OTHER THAN THE WORKER

MEGHNA JUTE MILL

BIRLA JUTE MILL

DISEASE TYPE

WATER BRONE
VECTOR BRONE
MALNUTRITIONAL
RESPIRATORY
ERGONOMIC
SKIN
DEAFNESS
OTHERS

SCALE: 1 cm = 10 UNITS
PRESENT MORBIDITY PATTERN OF HOUSEHOLD MEMBERS OTHER THAN THE WORKER

MEGHNA JUTE MILL

BIRLA JUTE MILL

DISEASE TYPE

WATER BORNE
VECTOR BORNE
MALNUTRITIONAL
RESPIRATORY
ERGONOMIC
SKIN
DEAFNESS
OTHERS

SCALE: 1 cm = 10 UNITS
This table shows that the workers' household members generally suffered from water-borne and vector-borne diseases. The past morbidity records of the household members of the workers of Meghna Jute Mill shows 63.6% of them suffered from water-borne diseases and 19.2% of them from vector-borne diseases. In Birla Jute Mill, the trend is more or less similar. The other diseases are not too prevalent.

The morbidity pattern of the household members at present is given below:

<table>
<thead>
<tr>
<th>Diseases types</th>
<th>Meghna Jute Mill (%)</th>
<th>Birla Jute Mill (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water-borne</td>
<td>8.2</td>
<td>5.2</td>
</tr>
<tr>
<td>Vector-borne</td>
<td>41.0</td>
<td>9.3</td>
</tr>
<tr>
<td>Malnutritional</td>
<td>18.2</td>
<td>25.7</td>
</tr>
<tr>
<td>Respiratory</td>
<td>15.1</td>
<td>21.7</td>
</tr>
<tr>
<td>Ergonomic</td>
<td>9.5</td>
<td>17.7</td>
</tr>
<tr>
<td>Skin</td>
<td>2.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Due to noise</td>
<td>1.0</td>
<td>0.6</td>
</tr>
<tr>
<td>Others</td>
<td>4.8</td>
<td>17.7</td>
</tr>
</tbody>
</table>

From this table, it is evident that at present, a striking growth in the occurrence of malnutritional, respiratory and ergonomic diseases have taken place. There is also a marked decrease in the occurrences of water-borne diseases. The altogether increase in the occurrence of morbidity is remarkable. The household members report 322 and 176 occurrences of diseases in the past, respectively,
in Meghna and Birla Jute Mill. At present, that same population show 616 diseases in Meghna and 322 diseases in Birla Mill. In Meghna Jute Mill, vector-borne diseases are prevalent while in Birla Jute Mill they are not so widespread. There is quite a lot of similarity in the morbidity pattern of the worker and their household members. The reason of this may be attributed to the infectious nature of these diseases. It has been found that in a household many inmates are suffering from the same diseases. Due to insanitary living conditions people are affected easily, overcrowding heightens the problems by spreading the diseases.

CONCLUDING STATEMENT

The morbidity pattern of the jute mill worker and his family members can be greatly influenced by imposing regular income, better living and working conditions and health care facilities. None of these are impossible tasks and should be carried out by the employer as well as the state. These indirect tools of exploitation are proved to be most harmful to the workers in the long run.