CHAPTER VII

RURAL HEALTH HAZARDS
The importance of health requires little elaboration. It is fundamental to personal happiness and the ability to enjoy and appreciate all other aspects of life and has a strong influence on productivity and earning capacity. Secondly, health is fundamental to national progress in any sphere. Loss of health affects productivity as well as efficiency in the national production both in the sphere of industry as well as agriculture. Therefore health involves not only medical factors but also social, economic and educational factors.

Health is a state of complete physical, mental and social well being and not merely the absence of disease or infirmity.¹ Disease is the abnormal condition of the body

brought about by violation of natural laws. Diseases are directly controlled by the surrounding environmental conditions and respective nutritional intake based on their dietary pattern. Most of the diseases are caused by pathogenic, microorganisms, inborn errors of metabolism, vitamin deficiency, high vitamin concentration and hormonal disturbances. Disease is a complex affair and it may take a combination of two, three or even more factors to produce it, e.g., extremity of temperature, lack of proper nourishment and energy provisions required for normal functioning of the body. In this context diseases could be attributed to a partial or total failure of the internal adjustment and mechanism in maintaining conditions necessary for health. Diseases could, therefore, be classified as follows according to the main important causes that play major role in a disruptive influence:

(a) Infectious disorders: e.g. Typhoid, Small-pox, Influenza etc.

(b) Due to physical and chemical agents, such as burns and poisons.

(c) Due to injuries.

(d) Due to nutritional deficiencies such as rickets, Anemia, Beri-beri, eye disorders etc.

(e) Due to degenerative origin such as 'thickening of arteries' and 'liver cirrhosis'.

(f) Due to new growths such as Cancer.

(g) Miscellaneous diseases e.g. diseases of allergic origin.

(h) Here do-familiar diseases and diseases due to unknown causes.

Health hazards among rural people due to nutritional deficiency and polluted environment have not received proper care and, therefore, the present study is to wipe out this lacuna. Tribals of the study area live in remote areas. They are exposed to a particular environment and their pattern of living standard etc. are directly influenced by the surrounding environment. Health of rural population is influenced, sometimes even more significantly, by such social, cultural and economic factors as nutrition, water supply, waste disposal, housing, education, income and its distribution, employment, communication and transport, social structure and health services. Instead of physical factors, human factors play very important role as far as ill-health condition are concerned. Rural health is directly influenced by the local environment and such environment is controlled by the activities of the villagers.

RURAL ENVIRONMENT

The rural people as compared to urban population have different health problems. In some respects, conditions have been more favourable for the rural population, but in other ways they have been less favourable. It has been customary
to refer to the obvious advantages of outdoor work, fresh air, and lack of crowded conditions in rural areas as health advantages. On the other hand, medical, hospital facilities in most rural areas are inadequate, and unsanitary conditions often exist.

The general description of the rural area viz. climate, agricultural crops, flora and fauna as well as the demographic structure of the community make the physical environment in which people live. The term environment is defined as the totality of the external conditions and influences that affect men.

Local environment very much influenced by the process of learning is responsible for individual health as far as rural health is concerned. Generally, cultural and social activities are closely bound with the old faiths and traditions which never provide a conducive environment for people.

Rural health is one of the very important aspects as far as rural development is concerned. It is particularly so in our country and specially in the study area where more than 65 per cent population lives in rural areas. In Mandla district, which is one of the most important tribal district of Madhya Pradesh, tribal population lives in rural and remote areas. The study of rural health in such an area is one of the very important aspect, if any one likes to explore the possibilities of the area.
In brief, rural environment factors, which affect the health conditions in rural areas, are as under:

A. Primary Needs -
   1. Sufficient nutritive food
   2. Health facilities
   3. Uncontaminated drinking water
   4. Educational facility

B. Economic Factors -
   5. Occupation
   6. Economic status
   7. Way of living

C. Social Factors -
   8. Food habits
   9. Concept of diseases and treatment
   10. Old and new customs
   11. Marriage concept
   12. Ignorance and lack of civic sense

D. Housing conditions -
   13. Adequate housing
   14. Ventilation
   15. Lighting
   16. Waste disposal
   17. Sanitation

E. Personal Hygiene -
   18. Clothing
   19. Personal cleanliness and healthy habits
FIELD CONDITIONS

A. PRIMARY NEEDS

SUFFICIENT NUTRITIVE FOOD

In the rural areas of Upper Narmada Basin people suffer from inadequate food supply in their diet because their purchasing power is limited. People are generally doing their work outside the village and in the evening they collect some food material for preparation of night food. Their food is not rich in respect of nutritive value.

HEALTH FACILITIES

As far as Government facilities are concerned, Primary Health Centres (PHC) are the principal institutions providing integrated health services to the rural population. In the study area, the delivery system of health care is mainly through the complex of state-owned PHCs in rural areas. In the study region, 29 PHCs are providing health facilities for the people of the area.

UNCERTAIN DRINKING WATER

The provision of safe and adequate water supply is a basic requirement. The water supply for drinking and domestic purposes influences the health of the people. In the study area, the physical condition of rural water supply is
unsatisfactory. In most of the villages, drinking water is obtained from unprotected wells and 'nalis'. In some villages, hand pumps are also provided by the Government. Out of 24 villages, where diet survey has been conducted and have also been chosen for other survey, people in about 50 per cent villages, are getting their drinking water from wells only, and these wells are not capable to supply water even for half the year.

EDUCATIONAL FACILITIES

Educational facilities are considered to be a major instrument for bringing social change. It is also one of the important preconditions of economic development. Upper Narmada Basin as compared to the Madhya Pradesh is below the State level literacy. Literacy level of the Basin being 31.95 per cent of the population compares poorly with 36.2 per cent of the country. Almost every village has a Primary School, but due to lack of interest on the part of parents, children do not prefer to join schools.

B. ECONOMIC FACTORS

OCCUPATION

In the study area people engaged in agriculture and its related activities. Other family members are also helped in these activities so that family earn more for their livelihood.

ECONOMIC STATUS

Their economic condition is poor because their purchasing
power is very low and limited. Hence they are not able to consume nutritive food for good health.

WAY OF LIVING

The way of living of the villagers is directly controlled by their economic condition because their resources are limited. So the people are living with old traditional system with limited resources.

G. SOCIAL FACTORS

Social factors which include food habits, concept of diseases and their treatment, old and new customs, marriage concept and ignorance and lack of civic sense make the social environment in the rural area.

FOOD HABITS

Food habits of the people differ from community to community because they are usually taking their food according to their traditions.

CONCEPT OF DISEASES AND TREATMENT

Almost all the people generally ignore proper treatment of the illness and prefer usually traditional system method and trust in 'Vaidyas', 'Jhara-funki' etc.

OLD AND NEW CUSTOMS

In the rural areas of study region many social - old and new - customs, early marriage concept etc. also influence their
health. The people always ignore the illness and do not care for their health.

D. HOUSING CONDITIONS

Adequate Housing

The four types of houses - kachcha, partly pucca, semi-pucca and pucca - may differ with regard to various plans of houses construction determined by the resources and needs of the families. This is needed both for health and for the prevention of diseases. A good house should have cross ventilation i.e. doors and windows facing each other, and adequate natural lighting in every room. But unfortunately these are not available in the rural houses. House and place of work are stuffy and over crowded. Air circulation in these houses is not proper. The pattern of housing is not suitable for getting the light and fresh air. In the study area the houses are congested, ill-lighted, ill-ventilated and over-crowded.

Waste Disposal

The water which has been used for such domestic purposes as washing utensils, washing clothes and bathing etc. is termed as house sullage. But in the villages the drainage system does not exist at all. In and around the villages, one can notice a number of ditches and pits which are good breeding places for mosquitoes.
SANITATION

In the rural areas there are no private or public latrines and the villagers go to their fields instead. The children often use the lanes and streets in the villages for this purpose.

E. PERSONAL HYGIENE

In this point it is proposed to describe the habits of the people of study region pertaining to bodily cleanliness which includes habits of cleaning clothes, taking bath etc.

CLOTHING

Clothing is a biological as well as a social need for man. From the biological point of view he must sustain the warmth of the body and protect it against heat and cold as also from external injuries. As a social need clothings are necessary for decency and personal decoration. The material for clothing in the villages is predominantly cotton.

People wash their clothes mostly in the villages hardly twice in a week at the time of their bathing. Before taking their lunch they only clean their mouths and teeth. Thus the people of the area keep insanitary habits.

FOOTWEAR

People are not using shoes regularly. Some economically rich persons only use plastic shoes but the labourers are not using shoes. However, they occasionally use country leather
shoes and chappals made out of motor tyres or leather.

In the rural areas, people are engaged all the time in their work. They have no time for rest or recreation during the working hours.

SOURCE OF DATA

The health incidence data of each PHC has been collected from the Chief Medical Officers' offices where year-wise data has been computed according to International Classification of Diseases. This data has been collected PHC-wise for the year 1982-83, 1983-84, 1984-85. For the present study all the above collected data are classified under fifteen groups and their average percentage has been calculated. PHC-wise percentage of each group is given in Table 7.1. For the present study, the diseases on the basis of relevant data have been grouped as follows:

(i) Dysentery and Diarrhoea  
(ii) Diseases of Digestive System  
(iii) Infectious Diseases  
(iv) Parasitic Diseases  
(v) Diseases of Respiratory System  
(vi) Skin Diseases  
(vii) Tuberculosis  
(viii) Viral Diseases  
(ix) Venereal Diseases  
(x) Deficiency Diseases
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*Data not available

Source: Based on CMC Office data of Different PHCs.
(xii) Diseases of E N T.
(xiii) Diseases of Teeth and Gum
(xiv) Diseases of Urinary System
(xv) Cancer

DISTRIBUTION OF DISEASES

Detailed study of diseases is as follows:

1. Intensity of Diseases
2. Ranking of Diseases
3. Spatial Distribution of Diseases

INTENSITY OF DISEASES

This study is an attempt to detect the different intensity zones of diseases because it is one of the important aspects in the study of various diseases in the area. Besides the distribution of diseases, it is also essential to know the area where diseases occur more frequently and where they occur less, and so on.

METHODOLOGY

In order to demarcate the disease intensity zones, disease ranking co-efficient values Rb1, Rb2, Rb3 ... Rbn were calculated for all the PHCs and were grouped into five classes according to their magnitude. To detect the intensity,
the whole computation has been done in four steps.1

1. The disease figures were converted into percentage figures.
2. All the PHCs were arranged in descending order under the head of each disease separately on the basis of their percentage figures.
3. The percentage figures thus arranged were then transferred to ranks, i.e. each PHC has been given a rank for each disease.
4. All the ranks of each PHC were added and their average was calculated to get its disease ranking co-efficient value, using the following formula:

\[ Rb_1 = \frac{Dr_1 + Dr_2 + Dr_3 + Dr_4}{N} \]

Where \( Rb_1 \) = Disease ranking co-efficient value of PHC b1.
\( N \) = Total number of diseases taken into consideration.
\( Dr_1, Dr_2, Dr_3 \ldots Dr_n \) = Ranks occupied by PHC b1 for diseases, \( r_1, r_2, r_3 \ldots r_n \).

For example, the co-efficient for PHC -

\[ \text{Majholi} = \frac{2 + 2 + 1 + 17 + 22 + 8 + 2 + 2 + 4 + 17 + 5 + 5 + 3 + 1 + 1}{15} \]

\[ = \frac{92}{15} = 6.1 \]

Disease incidence data in percentage figures are given in Table 7.1.

DISEASE INTENSITY

Upper Narmada Basin displays remarkable regional imbalance in the intensity of diseases. The value of disease

ranking co-efficient varies from 4 to 19, and these have been placed into five categories, viz.

<table>
<thead>
<tr>
<th>Category</th>
<th>Co-efficient</th>
</tr>
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<tbody>
<tr>
<td>High Disease Intensity Area</td>
<td>≤ 4.5</td>
</tr>
<tr>
<td>Moderate High Disease Intensity Area</td>
<td>4.5 - 9</td>
</tr>
<tr>
<td>Moderate Disease Intensity Area</td>
<td>9 - 13.5</td>
</tr>
<tr>
<td>Moderate Low Disease Intensity Area</td>
<td>13.5 - 18</td>
</tr>
<tr>
<td>Low Disease Intensity Area</td>
<td>≥18</td>
</tr>
</tbody>
</table>

Different intensities of different places have been shown in Table 7.2. The lower ranking co-efficient value displays the higher disease intensity, while a higher co-efficient value shows a lower disease intensity.

HIGH DISEASE INTENSITY AREA

Shahpur PHC constitutes the high disease intensity area of the study region. The area has the lowest disease ranking co-efficient value of the PHC (4.57) in the entire study unit. The most frequent diseases of the PHC are infectious and are ranked first, diseases of Digestive system ranking second, diseases of Teeth and Gums and Diseases of Respiratory system rank third.

On the basis of above analysis, Shahpur PHC occupies higher position in comparison to other centres of the region. Infectious diseases are most common. These diseases spread from person to person, directly or indirectly through several mediums. Very small germs are the causes of infection. Lack of personal hygiene as well as poor health practices are very
much favourable for the higher prevalence of skin diseases. Some of the skin diseases like itch, Eczema and Ringworm are very common in the area.

MODERATE HIGH DISEASE INTENSITY AREA

This category of disease intensity covers five PHCs namely Kundam, Majholi, Mandia, Datni and Panagar. Above mentioned category forms three distinct zones, viz. Katni forms the first, Majholi, Panagar and Kundam form the second and PHC Mandia forms the third zone respectively (Plate 18). The disease ranking co-efficient values of these PHCs are given in Table 7.2.

Katni (first zone) ranks first in Venereal Diseases, ranks third in Viral and ENT diseases and ranks fourth in diseases of Digestive System and Tuberculosis. In the second zone Majholi, Panagar and Kundam; Majholi ranks first in the three diseases viz. Respiratory system diseases, diseases of Digestive system and Skin diseases, second in Infectious, Parasitic and diseases of Teeth, Gum and Eye and third in Dysentery. Panagar PHC holds first rank in Deficiency diseases, second rank in Venereal diseases and ENT diseases, third in Parasitic diseases and less than fourth in widely reported diseases of Respiratory system, Viral diseases, Diseases of Digestive system and Infectious diseases. Panagar holds first rank in Parasitic Diseases, third in skin diseases, fourth rank in the three diseases viz. Infectious, Deficiency and Eye and fifth rank in Dysentery and ENT diseases. Third zone i.e.
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<th>Value</th>
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<td>6.93</td>
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<td>7.07</td>
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<td>Panagar</td>
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<tr>
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<td>Sehora</td>
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<td>Ghughri</td>
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<td>Bijadandi</td>
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<td>Mehandwani</td>
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<td></td>
<td>Karanjia</td>
<td>17.16</td>
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<tr>
<td></td>
<td>Narainganj</td>
<td>17.23</td>
</tr>
<tr>
<td>V Low</td>
<td>Dhimarkhera</td>
<td>19.66</td>
</tr>
</tbody>
</table>

Source: Compiled on the basis of Collected Data.
Mandla holds first rank in Tuberculosis, third in Deficiency and Cancer, fourth in Diseases of Urinary system and fifth rank in Veneral and Diseases of Teeth and Gums.

Parasitic, Deficiency and various diseases of Respiratory system are highly reported in this category. Main causes of the occurrence of the above diseases are anatomical position, physiographical influences and the frequency of exposure in the infections as well as adopting to the changing environmental conditions. Deficiency diseases reported due to lack of knowledge about the nutrients and proper use of food material. In this area the population density is high because this is the main urban area of study unit. Diet of the study area, which is found deficient in some nutrients, is also responsible for deficiency diseases.

MODERATE DISEASE INTENSITY AREA

This category of diseases intensity covers eleven PHCs. Disease ranking coefficient value of these PHCs are from 9.1 to 12.69. Above category forms five distinct zones which are distributed in northwest, southeast of the study area. The name of each centre with the respective disease ranking coefficient value is given in Table 7.2. The first zone i.e. Vijayaraghavgarh PHC holds fourth rank in Viral and Diseases of Teeth and Gums, fifth in Eye diseases, sixth in Infectious, seventh in Dysentery and eighth in diseases of Parasitic and Digestive system diseases. In the second zone - Rithi, Bahoriband and Sihora PHC, Rithi holds second rank in diseases
of Respiratory system and skin diseases, third in Infectious and Digestive system diseases. Bahoriband ranks first in Eye diseases, second in Viral diseases, fourth in Dysentery and Skin diseases and fifth in Infectious diseases. Sehore PHC stands first in four diseases - Dysentery, Cancer, Teeth and Gum and Diseases of ENT while it ranks second in Diseases of Respiratory system and Urinary system.

Coefficient number of Patan and Barqi (third zone) is 10.16 and 10.50 respectively. Patan ranks third in Urinary system diseases, fourth in respiratory system diseases and sixth in Parasitic and ENT diseases. PHC Bargi holds second rank in Dysentery, fifth in Diseases of Digestive system and Tuberculosis. The fourth zone i.e. Nainpur and Bichhia, Nainpur holds second rank in Tuberculosis, seventh in ENT, eighth in diseases of Urinary system and ninth in skin diseases. Bichhia ranks third in Tuberculosis, sixth in cancer and seventh in Deficiency and Teeth and Gum diseases. In the fifth and last zone of this category i.e. Shahpura, Dindori and Bajag, Shahpura holds first rank in Diseases of Urinary system, second in Cancer, sixth in Venereal Diseases and eighth in Deficiency diseases. Dindori ranks second in Deficiency diseases, sixth in Tuberculosis and diseases of Teeth and Gums and seventh in diseases of Urinary system and Cancer. Bajag ranks fifth in skin and Cancer, sixth in Deficiency diseases and ninth in Tuberculosis. In this category, mostly environmental and chronic diseases are reported. In some areas deficiency diseases are also reported less.
MODERATE LOW DISEASE INTENSITY AREA

This category, being the second one, occupies the largest area of study unit and covers eleven PHCs. The group coefficient values vary from 13.76 to 17.23. The name and disease ranking coefficient value of each centre is given in Table 7.2. The category forms three different zones; Barwara forms the first zone, Karanjia the second and Bijadandi, Niwas, Narainganj, Mehandwani, Majholi, Amarpur, Ghughri, Mawai and Samnapur the third zone respectively (Plate 18). Barwara - first zone - ranks first in Viral diseases, seventh in Parasitic diseases, ninth in Infectious diseases and tenth in diseases of Respiratory system. The second zone i.e. Karanjia holds fourth rank in Cancer, eleventh in Parasitic and Respiratory system diseases, thirteenth in Venereal diseases and fifteenth in Tuberculosis. The third zone - Bijadandi - ranks ninth in diseases of ENT, eleventh in Venereal diseases, twelfth in Parasitic, Tuberculosis and Deficiency diseases. Niwas holds sixth rank in Skin diseases, seventh in Tuberculosis, ninth in Deficiency diseases, tenth in Venereal diseases and twelfth in three diseases, viz. Diseases of Respiratory system, Diseases of Digestive system and Diseases of Urinary system. Mohgaon PHC ranks third in Eye diseases, fifth in Deficiency diseases and tenth in Parasitic diseases. Samnapur holds fourth rank in Venereal diseases, eleventh in Tuberculosis and Deficiency diseases and twelfth in Parasitic and Viral diseases respectively.
Venereal diseases and Tuberculosis are the main
diseases reported in this category. Poverty, social environ-
ment and lowered resistance may be said to be the causes of
these diseases.

LOW DISEASE INTENSITY AREA

The highest disease ranking coefficient value in
Dhimarkhera PHC is 19.66. This constitutes low disease
intensity area ranking sixth is Dysentry, twentyfourth in
Tuberculosis and twentyseventh in Infectious diseases. This
area is reported to be the least unhealthy zone in the region
under study.

THE RANKING OF DISEASES

This is a relatively simple method which helps to
assess the degree of prevalence of diseases in an area. The
method also helps to compare the occurrence of diseases from
one place to another. On the basis of collected data diseases
of every PHC were arranged in order of the number of cases
reported. Each disease was then ranked under the head of
each PHC. (Lower rank means high frequency).

Rank-wise study of diseases is very useful in under-
standing the distributional pattern of disease in an area
because it provides an idea of the relative dominance of
different diseases in order of importance. Table 7.3 shows
the ranking of diseases of each PHC of the study region. It
is clear from this table (7.3) and Plate (19) that the diseases
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**TABLE 7.3**

**RANKING OF DISEASES PHC WISE**

**Source:** Based on CMC Office Data of Different PHCs.

**Key:**
- **Dys** - Dysentery
- **Dig** - Digestive
- **Inf** - Infectious
- **Para** - Parasitic
- **Res** - Respiratory
- **TB** - Tuberculosis
- **Viral** - Viral
- **VD** - Venereal Diseases
- **Def** - Deficiency
- **ENT** - Ear, Nose, Throat
- **TG** - Teeth & Gum
- **Ur** - Urinary
- **Can** - Cancer
have a varied distribution both in rank and space. With the help of this method detailed study of ranking and description of diseases will be made (Table 7.1 and 7.3).

SPATIAL DISTRIBUTION OF DISEASES

GROUP I
DYSENTERY AND DIARRHOEA

It would be desirable to consider diarrhoea, amoebic dysentery and bacillary dysentery together because there is no hard and fast differentiation between these.

BACILLARY DYSENTERY

This is caused by germs belonging to shigella group. The germs are transmitted from person to person through contaminated food as well as water. The symptoms are abdominal cramps, bloody diarrhoea, straining at the stool and the loss of a large quantity of fluid from the gastro-intestinal tract.

Disorders of this group are most frequently in Jabalpur district. The occurrence of dysentery is related to season. It is most common in the rainy season and sometimes in the hot dry season also, when house flies are most active at their places of pollution. Deficient diet is also indirectly responsible for the occurrence of this disease. It has been noticed that in the rainy season house flies are much more active in the entire area. As far as drinking water supply is concerned, it is also responsible for the spread of this health hazard.
The author has noticed the following environmental factors on the basis of his own observations:

1. More than 50 per cent of the people are living in an unhealthy environment.

2. Sewage facilities are unhygienic particularly in remote areas.

3. In many places one could see refuse material and sewage domestic water flowing in the so-called streets of the villages.

4. People use muddy water of ponds for cleaning their domestic pots and clothes also.

According to private doctors, the cases of dysentery and diarrhoea are reported more frequently than other diseases. This was also noted during the diet survey. The author, while visiting Nigri village of Bargi P.H.C, noticed that people were facing a serious drinking water problem on a very large scale and were frustrated in this respect. Most of the families who were interviewed by the author reported of dysentery and diarrhoea frequently.

**AMEOBLIC DYSENTERY**

Amoebic dysentery is caused by an organism known as "Entamoeba Hystolites". This is mostly reported in the study area.

**DIARRHOEA**

Indigestion also causes diarrhoea. Germ-laden food,
half-ripe fruits or the use of bad and dirty water causes this disease. This disease spreads through flies. It is also reported at many places frequently.

**DISTRIBUTION**

The diseases of this group are leading in ten centres of the region. These are most frequent among all the other reported diseases in Bargi, Sihora, Vijayaraghavgarh, Patan, Bahoriband, Karanjia, Chughri, Bijadandi, Mandla and Dhiman-kherna. They are second most frequent in Narainganj, Amarpur, Samnapur, Nainpur and Shahpura while they rank third in eight other centres (Plate 19).

If a study on the basis of total cases reported is made, the highest cases of Dysentery and Diarrhoea in Bargi centre, viz. 74.1 per cent of the total number of registered cases, while in Sihora, Vijayaraghavgarh and Patan, the registered cases are 44.6, 29.8 and 28.7 per cent respectively of the reported cases. In other centres of the region the percentage of reported cases of this group of disorders vary from 28.7 to 3.0 per cent (Table 7.1 and 7.3).

It was also observed during diet and disease survey that people of different places generally suffer from the disorders of this group.

Unhygienic living environment, improper facilities for sewage disposal, contaminated drinking water, lack of civic sense, particularly poor personal hygiene and faulty dietary
habits of the people of the region are the main causative factors which make conditions favourable for the occurrence of the above mentioned disorders. If strict attention is paid to personal hygiene, proper disposal of sewage, control of flies and supply of adequate uncontaminated water, the disorders of this group can be controlled easily.

GROUP II

DIGESTIVE SYSTEM DISORDERS

Abdominal pain, loss of appetite, constipation, diarrhoea, difficulty in swallowing, flatulence, vomiting and loss of weight are the symptoms of digestive disorders. It is often the result of over eating, dietary indiscretion and irregular dietetic habits.

DISTRIBUTION

The diseases of the digestive systems are the least reported in third and fourth rank of all the reported diseases in Bargi and Rithi respectively while it ranks fifth in Shahpur. It ranks sixth in Majhori as far as patient is concerned because maximum cases have been reported in this PHC i.e. 9.1 per cent of total reported diseases. The author visited Ponda village of Majholi PHC and observed some lower caste people are living there in most unhygienic conditions and are using contaminated water. These are the causes responsible for the occurrence of this disease.

As a safeguard against these diseases suitable
precautionary measures should be taken as suggested by the doctors or other medical staff. Moreover, proper diet and adequate exercise are the keypoint for upkeep of the general health. These are needed to assist the functioning of respiratory system of the body. In addition cleanliness of the body, clothings, houses and surrounding areas, feeding and drinking water, is also essential for good health and happiness.

GROUP III

INFECTIONOUS DISEASES

Infectious diseases are also common in rural areas of the study region. These diseases spread from one person to another directly or indirectly through several mediums. Very small germs are the causes of infection. These germs multiply in number and try to establish themselves in the body as soon as they enter. In the skin which remain unclean and dirty, a number of infectious diseases take root in the body. The infections of the skin are caused by the viruses, bacteria, fungi parasites, environmental factors and personal hygiene. These are very much favourable for the higher prevalence of infectious diseases.

Some of the infectious diseases like whooping cough, influenza, typhoid, tetanus and diphtheria are very common in the study region.
WOOPING COUGH

This disease spreads from one person to another through a special type of germ that travels in air. Such infectious disease to the child is most harmful. In the beginning, the child is attacked with cold. Secretion comes out of his nose. He sneezes and water flows from his eyes. Besides, coughing starts at short intervals. In the study region the author has seen the children suffering from this disease.

INFLUENZA

Many germs cause this disease. The symptoms of the disease are: rise in temperature, headache, pain in limbs, shivering due to cold, water discharge from eyes and nose in addition to sneezing. The main cause of this disease in the region is cough and cold. Other major infectious diseases are common in the region viz. Pneumonia and tetanus.

DISTRIBUTION

The disorders of this group are the third important ones in five centres of the region, being most frequent in Shahpura, Rithi, Bichhia, Narainganj and Samnapur. They are second most frequent in Niwas, Karanjia, Mawai, Mehandwani, Bajag, Bijadandi, Majholi, Barwara, Kundam, and Bargi while five other centres hold third rank.

The highest case would be found in Shahpura centre, viz. 46.3 per cent of the total number of registered cases while in Rithi and Bichhia, the registered cases are reported
from 41.6 to 33.4 per cent. In other centres of the region the percentage of reported cases of this group of disorders vary from 23.6 to 1.4 per cent (Table 7.1).

GROUP IV
PARASITIC DISEASES

Cholera, Typhoid, Leprosy and Diphtheria are the main parasitic diseases which spread through small parasites. The characteristic of these diseases are that they do not necessarily spread through only one channel, e.g. those which spread through water may also spread through flies, filth etc.

CHOLERA

This is an acute infectious disease which is caused by a microscopic germ. The stools and the vomit of a cholera patient are full of cholera germs and these may get into a healthy person when contaminated food or drink is taken by mouth. The patient starts passing stools frequently which are white like rice water, and gets repeated vomiting.

TYPHOID

The organisms of the disease are present in the stool. They may also be present in urine. They can, therefore, be carried by water and contaminated food since the disease spreads through contaminated water and food. All measures for disinfecting water supplies and preventing contamination of food by flies and dust are to be adopted. According to private doctors, Typhoid is very common in rural areas of
Majholi PHC of the study region.

DISTRIBUTION

The disorders of this group are reported in first rank in three PHCs of Jabalpur district i.e. Kundam, Majholi and Panagar. Other one centre Barwara occupies fifth rank (Plate 19).

FIELD DATA: It was observed during field work that the people use contaminated water. The maximum number of parasitic diseases has been reported in Kundam and Majholi, viz. 47.2 and 19.6 per cent.

To quote an example, parasitic diseases rank first in Kundam and second in Majholi centre. The author, while visiting villages Ponda and Bargi for diet survey, noticed the following factors being favourable for the incidence of various parasitic diseases:

1. Use of contaminated water by the people for drinking and domestic purposes.
2. Ignorance towards diseases.
3. Unhygienic internal living environment.

GROUP V

DISORDER OF RESPIRATORY SYSTEMS

Diseases of the respiratory tract are of common occurrence due to the anatomical position, physiological influence and the frequency of exposure to the infections. Signs and symptoms depend upon whether the upper or the lower
respiratory tract is affected. The important signs and symptoms of this disease are cough, sputuna, Haemoptysis, Pain in the chest and Dyspnea.

The following are the common diseases of the respiratory system which are most frequent in study region:

Common cold, Bronchitis, Tonsils, Asthma etc.

COMMON COLD

Common cold is caused by the germs which live in the outer passage of the respiratory tract. The resistance to cold in the body decreases by the inhalation of foul air, catching cold or living in damp or dark places. It is a very common disease among children in the study region.

BRONCHITIS

It may be acute or chronic. The attack of bronchitis is common in cold weather and starts after catching chill or cold, or inhalation of irritant fumes.

TONSILS

Inside the throat, on its both sides, are two lumps of flesh. In between them is suspended a very soft piece of flesh. The tonsils causes in study area are unhealthy and irregular diet, unhygienic conditions of the house, breathing through mouth, defects in the mouth, teeth and nose. These are some of the factors which cause the inflammation of tonsils.
DISTRIBUTION

The disorders of this group are the second most frequent in Sihora, Patan and Shahpur. In this study the total cases reported are highest in Sihora 22.6, Patan 22.2 and Shahpur 19.7 per cent. Majholi and Bargi rank respectively third and fourth with 14.9 and 4.6 per cent of the total cases reported. In other centres of the region the percentage of reported cases of this group of disorders vary from 4.6 to 0.1 (Table 7.3).

GROUP VI
SKIN DISEASES

If the skin remains unclean and dirty, a number of infections (skin disease) take root on the body. The infection of skin is caused by bacteria, fungi parasites, environmental factors and personal hygiene as well as health practices. These are very much favourable for the higher prevalence of skin diseases. Some of the skin diseases like Itch, Eczema and Ring-worm are very common in the study region. Most of the areas of study region, especially both sides of the Narmada river, are affected by skin diseases due to continuous use of polluted water for drinking and other domestic purposes and unclean habits.

SCABIES OR ITCH

This is an infectious disease which is caused by a particular type of germ. The germ penetrates into the epidermis.
It generally affects legs, wrist and the space between two fingers. The lesions may get infected and pustules may be formed if proper cleanliness is not observed. One should avoid the company of a man suffering from this disease in order to save himself.

ECZEMA

In Eczema the red rashes appear in the beginning as a result of which the skin turns rough, thick and watery. Later on, hard crusts are formed on the rashes. Children of about ten years commonly suffer from it. Most of the areas in villages consist of children suffering from many skin diseases.

RING-WORM

Particular germs in different parts of the body cause ring-worm on the part concerned. These germs attack the skin at the root of the hair. Firstly, a red patch appears on the affected part where irritation is felt at times. Ring-worm is reported mostly in the children in the study area.

DISTRIBUTION

Among others, skin diseases are most frequently reported throughout the region. In Mawai, Niwas, Bajag, Shahpura, Amarpur, Nainpur and Mehandwani these diseases occupy first rank in these centres. (Plate 19).

The maximum number of skin diseases has been reported in Mawai, Niwas and Bajag viz. 34.5, 33.4 and 31.8 per cent
respectively of total reported diseases (Table 7.1 and 7.3).

FIELD DATA: For example, skin diseases rank first in Mawai centre and form 34.5 per cent of the total reported cases. The author visited Mawai and Keolari village for diet survey, and noticed the following factors which are favourable for the incidence of various skin diseases.

1. Use of polluted water for various purposes.
2. Illiteracy
3. Lack of facility for domestic waste water.
4. Unhygienic living conditions.

According to private doctors' also various skin diseases are more frequent in Bajag, Sihora and Panaagar centre.

GROUP VII
TUBERCULOSIS

Lack of diagnostic and treatment facilities, poverty, overcrowding, ignorance, lowered resistance of the body polluted air, deficient diet and bad social customs are responsible for the occurrence of tuberculosis.

In the first rank this disease is not reported anywhere, but in the second rank it is reported very frequently in Bichhia, Mandla and Dhimarkhera centre. The two centres of third rank and four centres of fourth rank are all from Mandla district. It shows the tuberculosis diseases are most frequent in Mandla district in comparison to Jabalpur. The
author has been that most of the areas of Mandla district are quite favourable for the incidence of tuberculosis.

GROUP VIII
VIRAL DISEASES

Disorders of this group are caused generally by mosquitoes. Most of them occur in forests and wooded places being out of touch with the human beings. They carry very serious diseases such as Malaria, Filaria and Dengue.

MALARIA

This is characterised by the fever with rigors. The infection is transmitted by female anopheline mosquitoes from one person to the other.

In many parts of the study region 'Malaria' is reported very frequently. In some areas of Mandla district having dense forest area, here cases of Malaria are reported very frequently. Other viral diseases are mostly reported in many parts of Jabalpur district also.

DISTRIBUTION

Among various diseases, viral diseases are reported in first rank in two centres viz. Barwara and Katni with 71.9 and 25.2 per cent of the patients of total reported diseases. Vijayaraghavgarh and Bahoriband centres are reported in second rank among all the diseases reported.
GROUP IX

VENERAL DISEASES

Very few disorders of this group are reported in the region. It is reported in four centres viz. Amarpur, Karanjia, Mawai and Narainganj of Mandla district, being in sixth rank. In rank seven also, four centres are reported to have venereal diseases. This disorder is usually reported in Mandla district. Venereal diseases are contacted almost by sexual intercourse. The infection transferred by other avenues is negligible. Syphilis is the main venereal disease which is reported in the area. It is communicable disease of sexual organ. Poverty and social environment are the main factors responsible for these diseases.

GROUP X

DEFICIENCY DISEASES

The term deficiency disease cannnots a nutritional deficiency. The food consumed by us serves us, from birth to death, as a fuel for our body machine. It is all required for body-building - the growth, the repair or renewal of the body including reproduction, and to preserve a proper medium in which biochemical processes of the body can take place.\(^1\)

Inadequate nourishment results in a variety of abnormal conditions called deficiency diseases. The diseases coming under this group are Goitre, Anaemia and nightblindness,

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Goitre

The swelling in the middle of neck is known as goitre. It is caused by the lack of iodine in diet. In some areas of Mandla, Dindori and Ghughri centre, goitre disease is common as observed during disease survey personally.

Anaemia

This may result due to deficiency of iron. Anaemia is usually common in children and pregnant women in the study region. It was observed during field work that children suffer from anaemic diseases. The diet of the region is also found deficient in iron intake it is one of the main responsible cause for the occurrence of anaemia. Faulty selection of food, ignorance, poverty may be the other responsible factors.

Night-Blindness

Ketomalacia is believed to be the common causes of blindness and is mainly due to the lack of foods containing vitamin A in the diet. Yet another causes of vitamin A deficiency diseases in the region is the poor nutritional status of the mother with respect to vitamin A, during pregnancy and lactation. In the region the night-blindness is frequently reported.
DISEASES DUE TO PROTEIN-CALORIE MALNUTRITION (P.C.M.)

Protein-calorie-malnutrition (PCM) is regarded as a spectrum of diseases arising from an inadequate diet especially among children. On the basis of experimental studies and on a few epidemiological observations, it is generally claimed that deficiency of protein with adequate or more than adequate calories leads to kwashiorkor, whereas deficiency of calories leads to marasmus.¹ These two are the main consequences to protein-calorie malnutrition.

Kwashiorkor and marasmus are reported throughout the region in private hospitals and were also observed during diet survey. These are the diseases reported in the region is due to protein-calorie malnutrition.

DISTRIBUTION

The disorders of this group are reported, first rank in Dindori centre of Mandla district. Among all other diseases it is reported second rank in Mohgaon and Panagar centre. In third rank, four centres have been reported viz. Ghughri, Samnapur, Bajag and Niwas.

FIELD DATA: Deficiency diseases rank first in Dindori centre and form 32.4 per cent of the total reported cases. The author while visiting Dindori proper for diet survey observed in the field the condition of their dietary system which is very poor.

and faulty. The private doctor also reported anaemia and goitre, frequently.

GROUP XI
DISORDERS OF EYE

The eyes are the most important organs of the human body. Sometimes we feel headache, fatigue, lack of interest, mental disturbances etc. when defects appear in our vision. Trachoma, night blindness etc. are the main eye diseases reported in the study area.

Disorders of eyes occupied first rank in PHC Mohgaon, third rank in PHC Bahoriband, fourth rank in two PHCs Barware and Vijayaraghavgarh and fifth rank in three PHCs Karanjia, Dindori and Rathi of the study region.

Lack of Vitamin A in the diet causes various diseases of the eye. The diet of the region found quite deficient in Vitamin A (Table 6.12).

GROUP XII
DISORDERS OF EAR, NOSE AND THROAT (ENT)

The disorders of ear, nose and throat (ENT) are reported less frequently. Ear disorder is generally reported in children. The disorder reported in Katni occupies second rank. In Patan and Bijadandi centres these diseases occupy third rank while four centres i.e. Mehandwani, Nainpur, Panagar and Sihora these diseases occupy fourth rank.

According to private doctors, Patan, Sihora and Panagar
are the main areas where this disease is reported frequently. This has also been observed during disease survey. Ignorance and carelessness are mainly responsible factor.

GROUP XIII

DISORDER OF TEETH AND GUMS

The diseases occupy positions in third, fourth, sixth, seventh and various other ranks in different centres of the area. Sihora, where the cases reported are 8.4 per cent of the total reported cases, holds third rank. The causes of these diseases are mainly due to personal unclean habits. Regular cleaning is absolutely necessary. Calcium and vitamin C is very essential for teeth and gums.

GROUP XIV

DISEASES OF URINARY SYSTEM

All activities of the human body depend on energy produced by the metabolic processes. Urinary system is concerned with the formation and elimination of urine. Urinary system diseases are mostly related to kidney. This disease occupies third rank in Shahpur and fourth rank in Patan centres. In the study region this disease is frequently reported in Shahpur i.e. 19.7 per cent of the total reported cases of the centres (Table 7.1 and 7.3).
GROUP XV
CANCER

To sum up, Cancer is a serious disease, reported in sixth rank in Sihora centre with 3.4 per cent of the total reported cases. Two centres hold eleventh rank and three centres occupy thirteenth rank (Table 7.1).