CHAPTER VIII

CONCLUSION AND SUGGESTIONS
Nutrition, is the Science that deals with the foods which a living organism requires, how it utilises them and how it deals with the waste products due to its activities.

All living organisms grow and reproduce themselves. In these activities they take in food materials from the outside world, treat them chemically, mould them and convert them into their own substance.

Food is basic part of existence. It is a basic necessity for survival and any development process has to consider the adequacy of food as an important aspect. Food, Nutrition and Health are intimately connected aspects of our life. The relationship of Food, Health and Nutrition is also well known. Therefore, if health is considered as an important part of development and progress and if nutrition is considered as a measure of health it is necessary for planners to understand the situation regarding Food, Nutrition and Health among the people.

The problems of malnutrition is greater concern in the developing countries, because of its mass prevalence, its targe human implication and its adverse impact on development process. Based on direct and indirect methods of assessment, the prevalence of PCM has been identified as most important and wide spread nutrition problem in India.

The study area ( Chhindwara District ) in Jabalpur division, is situated on the Satpura plateau in south central part of the state and lies between latitudes 21° 28' and 22° 49' North and longitudes 78° 10' and 79° 24' East.
The study area is divided into three physiographic region
(i) The southern region (ii) The Central region and (iii) The
Northern region. The Principal hills of the study area include
(i) The ranges forming the southern edge of the erstwhile Satpura
plateau (ii) The hills rising from central plateau and (iii) The
hills adjoining the Narmada valley. The high point lies at
height of 1164.33 m above M.S.L. The general slope of the study
area is southward. The chief rivers of the study area are the
Kanhan and Pench and their tributaries the Jam and Kulpbera.
The average, maximum and minimum temperatures are 31.31°C and
18.5°C respectively. The average rainfall of the study area is
near about 45 inches. The soils vary from deep black to reddish
yellow. The area of the forest covers 4339 Km² of the total
gеогraphical area of the study area. The micro environment has a
direct impact on the physical and mental well-being of living
persons.

The geographical area of the study area is 11,815 Km².
According to 1991 census the population of the study area is
15,63,332 with 80,2548 males and 7,60784 females. The population
increased by 26.78 percent during the decade 1981-91. According
tо 1981 census the literacy standard of study area is 28.20 per
cent.

Generally the people preserve pickles of Mangoes, Lemons,
Chillies etc. The people of this area are very optimistic.
Throughout the year the people do not get tea, sarbat, liquor,
wheat, rice, jowar, maize, pulses vegetables of different varieties.
The non-tribal people of the study area consume Roti, Rice, Pulses and vegetables from forest vegetation or some leafy vegetables. The tribal people of the study area generally eat Paj and Daliya in routine. They eat, Pork, Meat, Fish.

In study area, except calcium, iron, phosphorus and thiamine, the intake level of all other nutrients found approximately less than standard requirement.

During the course of survey of study area, most diseases caused were due to less intake of different nutrients like protein calorie, vitamins A, B, C, calcium, iron and other diseases percentage found to be 36.81, 26.13, 10.22, 10.22, 14.30, 1.81 and 14.77 respectively. The status of malnutrition among the children of the study area, is found that Normal Grade Malnutrition have highest percentage (47.27 per cent) and grade III malnutrition have lowest (1.36 per cent).

CONCLUSION

The maximum part of the study area is hilly, plateau type and forested. Soil is less productive and there are no irrigation facilities, and as such these factors are not suited to agricultural purposes. Micro-environment has a direct impact on the physical and mental well-being of living people.

During survey the researchers has found lack of many necessities of Rural people in study area. These are medical facilities, education, transportation, market, irrigation,
sanitation and drinking water facilities. Wells and Hand Pumps are the main source of drinking water, and the people have to depend upon weekly markets or huts for their daily necessary requirements.

In study area, the people are not aware of the intake of right type of Food and Nutrition and this type of knowledge come very late. The researcher found that in this case, some traditional and dietary habits do not permit to use the available food stuffs. The people only take their food just to satisfy their hunger. Seasonal variations and availability of food stuffs have affected the food habits. Their cooking method is very bad. The main reason of this is that lack of knowledge to right choice food and their preparation. The choice of the people are changing gradually. Most of the people (Tribal) depend on their forest products such as on fruits (like Amla, Mahua) vegetables, oil seeds etc.

Due to various socio-economic factors many changes have taken place in the dietary habits of the people—(I) A change in traditional diet according to its nutritive value. (II) Vegetarian, non-vegetarian diets have taken place according to the choice of the people. (III) Tea or coffee are used because of the effect of civilization and modernization.

The dietary pattern of the study area is concerned, the concepts, religious, economic status, availability of food stuffs are the determining factors. The dietary pattern of the study area varies from season to season on the availability of food
stuffs, fruits, vegetables as they are not uniformly available in different seasons. The diet of the study area is found below the standard requirement. In this area the main intake is of coarse grains which are local products while intake of leafy vegetables, spices, milk etc. is less due to lack of their production locally. After survey, it can be clearly seen that except cereals and millets, all other food stuffs intake is less than the standard requirement.

On comparison between tribal & non-tribal communities the intake of cereals, millets, leafy vegetables, roots & tubers, flesh food & liquor is in tribals while the intake of pulses, other vegetables, milk, sugar-jaggery is more in non-tribals.

In study area, thiamine and phosphorus, calcium, intake were found in excess to standard requirement. Its main reason is that coarse grains consumption is the most and pulses, vegetables and fruits intake is less than adequate quantity and low purchasing power. In the study area the intake of protein, calcium, phosphorus, vitamin A is satisfactory. The intake of vitamin C is very near to the standard requirement.

During survey of the villages of the study area it is found that in tribal villages the average intake of nutrients (except fats) is in excess in comparison to non-tribal villages. The main reason is that the tribal people are getting oil seeds, seasonal fruits, vegetables, meat (Pork etc.) and fishes from the river. Thus they get balanced diet than the non-tribals.
Five years before Shri Kamalnath, Member of Parliament Organised 'RIN MELA' (Lend Money Fair) in the Chhindwara district (Study Area) & every per tribal family was given a loan of Rs. 25,000/- each and this loan was written-off after two years; thus the standard of every tribal family improved. Due to coal mines & some other industrial establishment have given employment opportunities to the tribals and they earn throughout the year. This has enabled the tribals to improve their food habits and Nutrients intake pattern & their status is found satisfactory in comparison to non-tribals.

During the course of survey of the study area, most diseases caused were due to less intake of different nutrients, like protein, calorie, vitamin A,B,C., calcium, iron and other nutrients diseases percentages found to be 36.81, 26.13, 10.22, 10.22, 13.40, 1.81 and 14.77 respectively.

In children of study area it is found that normal grade malnutrition have highest percentage (47.27 per cent) and grade IIIrd malnutrition have lowest percentage (1.36 per cent). On the other hand the comparative study of malnutrition among girls and boys revealed that average percentages of normal grade and IIIrd grade malnutrition in more in boys than girls; whereas the percentage of grade ISt & IIInd malnutrition among girls is more than boys.

In the study area, grade IIIrd malnutrition was not found in boys of tribal villages and in girls of non-tribal villages.
Though the percentage of intake of nutrients in the study area is seen satisfactory even than the percentage of deficieny diseases is found more and the main reasons are as follows:

1. The cooking method is defective. During cooking that of the nutrients are destroyed.
2. Due to polluted environmental condition.
3. Less of resistive power is less of the people due to polluted environment.

Thus many children are affected more due to malnutrition in comparison to other districts.

Proper planning of Food & Nutrients supply in the study area, Education, methods of proper cooking, health centres, transportation facilities are absolutely necessary to improve the standard of the people i.e. overall population of tribals and non-tribals.

NUTRITIONAL PLANNING

The rural population of India is confronted by malnutrition problems. Two kinds of approaches / strategies have been suggested for nutrition planning. One based on the identified immediate cause (e.g., faulty food habits, poverty, large size family, high infant mortality etc.) and the other based more on conceptual and analytical framework.

Agricultural production increases nutrition level of the study area. Increase in total food production can be easily brought about by suitable changes in cropping pattern, increasing
crop yield and extending crop areas. Changes in cropping pattern can be brought about by preferring pulses, oil seeds and some fodder crops as second crops. Crop yield can be augmented by preferring high yielding and drought resistant varieties. Crop area can be expanded provided irrigation facilities is supplemented to the farmers.

Under the Govt. of India's Applied Nutrition Programmes, forty schemes were implemented during IV Five Year Plan and were further intensified during V Five Year Plan. The schemes included in the Nutrition sector are broadly grouped under the following headings:

1. Supplementary feeding programmes,
2. Production, processing and supply schemes,
3. Programmes relating to nutrition education, and
4. Health-based nutrition schemes.

For the prevention of P C M considerable improvement of food supply of entire family is required. In addition, improvement of sanitation and programmes of immunization are suggested. Another cause for malnutrition is failure of lactation or poor lactation, which is more of a psychological cause and local conditions of breasts. Diseases like marasmus and gastroenteritis in babies are the result of difficult breast feeding and are common in mothers experiencing frequent emotional upsets and other psychological problems.

In preventing malnutrition weaning is as important as proper breast feeding. It should start at right time to provide
adequate calories and protein for normal growth of the child and to enforce timely food habits. A mother's milk is adequate in protein and calorie up to first five to six months for a baby. But for older babies additional artificial milk, semisolid and solid food becomes essential to be introduced in the form of boiled cereals and pulses.

In addition, malnutrition can be prevented by adequate calories and proteins in the diet (balanced diet). It is essential therefore, to avail the cheaper and more economical food items possessing high energy and protein values, e.g., combinations of cereals, pulses and leafy vegetables. Although, proteins from animal sources are superior due to their high net protein utilization values, one, it is unwise to advise parents to opt for egg and other expensive animal based food items. Neither should they be advised to opt for protein powders, protein biscuits or 'tonics', because they only provide limited amounts of proteins considering the requirements of a child. Similarly in adults proper advice regarding diet, food habits, beliefs and attitudes are absolutely essential.

There are deep-rooted beliefs and attitudes towards various foods intake all over India in all castes and in all regions. This makes it essential to know about the local food habits and attitudes. Introducing new items into the diet brought from outside of their region may often lead to a number of problems. The Indian diet generally consists of cereals, pulses and vegetables which provide fairly adequate amount of energy and proteins.
Hence sticking to the traditional family diet with proper and timely intakes can go a long way in preventing malnutrition; at the same time it can be extremely economical without fearing for expensive food items in order to have a balanced diet.

Nutrition education is also indispensable as far as prevention of malnutrition is concerned. In India, more than 60 per cent of mothers from poor economic conditions and being daily wage earners, it has become more necessary to impart nutrition education to the persons who manage the child in mother's absence. It shall help to minimize the problem if nutrition day care nurseries are established in the region. Therefore, the problem of nutrition, whether prevention or management, has to be tackled at the community level rather in the hospitals.

Health care for young children and mothers in the rural areas could greatly be improved if each primary Health Centre is staffed with a nutrition expert who will look into nutrition problems of his block with curative works also. It is not advisable that mothers and children to reach the centres but this service should be available at village level. Nutrition research should integrate nutritional criteria with local needs, availabilities, costs and preferences. This can be done by decentralizing the research activities coordinating with Nutritional departments of the Universities and Medical Colleges. It will be worthwhile to introduce nutritional science in both primary and adult education. A regular mass media campaign on T.V., radio and holding of village and block level discussions, meeting etc. The most
effective nutritional use of currently consumed food and of food items locally available need to be high lighted at every step of such community based programmes.

Lastly it is essential to impart knowledge of correct way of cooking to the village women, nutritive elements and its usefulness. For the proper implementation and understanding of nutritional problems with respect to food habits, education is the primary need as most of the people of the villages are illiterate.

SUGGESTIONS AND RECOMMENDATIONS

In study area, the problems among the people, are related to Food, Nutrition and Health. The Government is trying its best to solve the problems. The researcher has given some suggestions to solve the problems of the study area.

To save the pollution of environment in the study area, plantation should be encouraged after studying the climatic and soils conditions. The Government should provide plants free of cost to the people. The people should be given some incentive to look after their and watering, the intants plants.

There should be proper drainage and transportation facilities in the villages. Clean and unpolluted drinking water should be provided for the people. The dung and other wastes should be collected & thrown away from residential areas.

Due to their unscientific and improper habits, various diseases are found in the villages. The people should be taught to be conscious and careful about cleanliness and sanitation.
The agriculture is the main occupation of the people, therefore, each family should be given culturable land free of cost by the government. The expenditure on good quality seeds, fertilizers, irrigation and spraying of insecticides should be undertaken by the government. The main problems of the people is related to food. Therefore, they should be encouraged to produce high nutritive value crops, such as soyabean, different pulses and green vegetables.

The animal husbandry of good breeds should be encouraged in the study area, because the area is full of forests and abundant of wild grasses. There should be a veterinary doctor covering reasonable villages. Income of people from sale of milk and milk products should be encouraged.

Each village should have an approach road & the proper bridges. Primary schools and adult education centres should be established.

To improve the economic conditions of the people, they should be provided appropriate job opportunities and for this cottage industries should be established.

The people are used to old dietary habits and their cooking method is defective. Therefore, their diet is unbalanced. Their dietary habits should be changed and they should be taught of proper cooking methods to improve the deficiency of nutrients.

In addition, some other suggestions to solve the problems of food nutrition and health are following:
1. Elimination and mitigations of identified immediate causes. The most identified causes being faulty food habits, poverty, large size of the family, high infant mortality, infectious and defective foods intake.

2. Implementation of programmes oriented in nutrition education, family planning, maternal and child welfare.

3. Nutritional level of a region can be raised by increasing agricultural production by adopting suitable changes in cropping pattern, increasing crop yield and by extending the area under crops.

4. The food supply should be improved for the family as a whole and not on individual basis.

5. Breast feeding (lactation) and weaning for newborn infants help a great deal in preventing malnutrition.

6. Consumption of cheaper sources of proteins and energy should be emphasised and encouraged more i.e., cereals, pulses and leafy vegetables than the expensive animal proteins.

7. Advices regarding "balanced diet" for the prevention of malnutrition should be socially acceptable to the family and this can be prepared from the locally available food items.
8. Health and nutrition education should be included in the schools as well as in adult curriculum.

9. Prevention and management of the problems of malnutrition should be solved at the community level rather in the hospitals.

10. Decentralization of nutrition research and its proper coordination with the Universities and medical colleges should be enforced.

11. General education of the population and nutrition education in particular are essential for the overall national development.

12. Nutrition education must be harmonized with the national and local cultures.

13. The relationship of intake of foods in relation to energy output, resistance to disease, healing and recovery should be made part of teaching efforts.

14. In order to minimize nutrients deficiency of the area, the farmers should be acquainted with modern methods and practices of agriculture farming irrigation facilities, use of fertilizers to improve the cropping pattern to obtain the average yield of different food stuffs.

15. However, till such time as we achieve these goals, it will be necessary to undertake short-term measures for the large scale feeding programmes for pre-school children of the poor communities.