INTRODUCTION
Chapter I
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Some background information on human food and its effect on human biology is discussed below so as to help in understanding the relevant problems in a better way.

Food and Human Growth

The food consumed should promote growth or build the body and repair the wear and tear; finally it should protect the body against ill health, maintain and regulate the body processes (Mullick, 1990).

It is said that a child’s growth rate reflects better than any other single index, his state of health and nutrition; and often indeed his psychological situation also (Eveleth and Tanner, 1976). Similarly it has also been stated that the average values of children’s heights and weights reflects accurately the state of a Nation’s Public Health and the average nutritional status of each citizen, when appropriate allowance is made for differences, if any, in genetic potential.

The pre-school children (1-5) form the bulk of child population and the most important component too, because it is this age which is the most inadequately protected emotionally, and prone to develop malnutrition and various vitamin deficiencies. Besides, children between 5 years and 12 years also form an important segment of the population, comprising about 25% of the entire population in India. Malnutrition and illness often make them absent from school or dropout themselves and frequently lead even to failures.
Growth is influenced by various biological determinants. Growth rate and a person's eventual size are determined by two chief factors, (a) the inborn capacity to grow, and (b) various environment conditions, important among which is nutrition (Martin and Coolidge, 1978). Recent works suggest that nutrition alone plays a major role, which is greater than the genetic background (Jelliffe, 1966). Studies on growth and development in children in a community provide important information regarding the nutritional status of the community (Vijayraghavan et al., 1971). In fact, status of growth of children is considered as the index of the health and well being of a community.

It seems to appear that there is no guarantee that all the populations have the same growth potential or physical degeneration. Important changes in the demographic structure of different populations of the world are occurring. The processes of growth and ageing are responsive to nutritional factors. Increases in life expectancy, most pronounced in the industrialised nations are being experienced in most parts of the world (Stini, 1980).

For the assessment of growth and its nutritional status, anthropometry has been employed as a powerful tool for its assessment, particularly in field conditions, where it is difficult to conduct clinical and laboratory tests. Stature and weight are the two basic measurements to assess nutritional status (WHO 1986). It is suggested that substantial additional surveys and studies need to be carried out in different parts of the country and in different seasons to arrive at estimates of energy expenditure in various occupations (ICMR 1994).

Food and Food Habits

Food is the basic necessity for existence. Man's basic drive is, therefore, for good food to satisfy his hunger. It provides essential nutrients adequately for the body’s growth, maintenance, repair and reproduction. Foods are composed of dozens or even hundreds of different kinds of substances – the nutrients. Six general classes or kinds of nutrients found in the foods are carbohydrates, fats, proteins, vitamins, minerals and water (Manay and Shadaksharaswamy, 1987).
It has been stated that nutrition is probably the most important health component as unless the people are fed with adequately, their physical, social and mental well being or in sort, the entire panorama of health are likely to be affected (United Nations, 1968). Good nutrition throughout life is of paramount importance in maintaining good health which is broadly viewed as a state of complete physical, social, mental and spiritual well being and not merely the absence of disease and affirmity (Singh, 1988). The ecological factors are considered to be the most important determinant in identifying the nutritional profile of the people.

Man needs nearly 50 nutrients for a healthy and active life and these are derived through the diet he consumes daily (Park and Park, 1995). The requirement of the nutrients depends upon his age and physiological status. While adults need nutrients for maintaining body weight and proper body function, the infants and young children who are growing rapidly require nutrients more for rapid growing.

Faulty diet leads to ill health and disease. What a person eats has a lot to do with how he or she feels. Good physical strength can be made possible by good eating. This also promote emotional stability and personality well being. People have argued that the human race in its long experience has fixed reasonably wholesome dietary customs unless the individual peculiarities are pronounced. These will usually prevent him from wandering too far from nutritive safety. Custom, habit and appetite have served as the chief guides in the selection of food in the past. But today research has proved that these are not very sound basis for food consumption and healthy living. No single food can be designated as essential for life or health. Both quality and quantity should be considered. The food consumed should provide energy for work-voluntary and involuntary.

Food habits are deeply rooted in the past for all people and intimately interwoven in custom, religious beliefs and educational attainments of a given society.
Influencing Factors

Sources of food and food habits, since long have ultimately been found influenced by different factors which may broadly be classified into geographical and the cultural factor of the population. A brief discussion is given below.

(a) Geographic: In the ancient time, man ate whatever he could get to satisfy his hunger. The food available depended upon the geographical location and whatever would grow there. Soil, climate, and water were major factors: the temperature, amount of sunshine, wind and rain, kind of plants which were native to the area: the animal life indigenous to the area and whether they were the kind that he would trap or kill.

Topography, altitude, mountains, arid deserts, not only determine the food available, but were barriers to movement that might introduce new foods through travel, exploration or migration which presented opportunity for learning of new foods.

The nutritional status of people varies from one place to another. It depends largely on the economic status of the people. In the developed countries, where the people are financially well off, the problem of under nutrition has almost completely disappeared. However, in the developing and underdeveloped countries where the majority of the populations are below the poverty line, malnourishment still remains a pressing problem. It has been reported that the people of developed countries consume food in the range of 3000-3500 kilocalories (kcal) per day, whereas in developing countries especially in India, the consumption limits to 1800-2000 kcal only (Manay and Sadaksharaswamy, 1987).

Next to the economic condition, the food and the social habits of the people is another attributing factor to the nutritional status. People of different places have different food habits depending upon the geographical situation of the place, the climatic condition, cultural habits and religious restrictions. Drinking habits of the people differ depending on hot or cold climate.
(b) Cultural factors: Anthropologists regard nutrition behaviour as a part of a set of customs that are learned and constantly changing (Kronl and Boxen, 1975). Even after many changes in the food habits, traditional beliefs of various kinds are persistent. Many such beliefs are centered around in infancy, puberty, pregnancy and lactation and are passed down by village women to their daughters. In the South Pacific Islands, it is believed that certain shellfish eaten during pregnancy will cause the child to be born with scales on its head; young should not eat porpoise flesh because it rot their teeth. Ethiopian pregnant women should not eat roasted meat as it is believed to cause abortion. Eggs are thought to cause baldness or sterility or to produce thievery (Schaefer, 1961).

Foods are classified as ‘hot’ or ‘cold’ by many different cultures in many parts of the world based on innate qualities believed to be inherent in the food. He observed in the Peruvian Andes that hot/cold beliefs were mainly related to the health beliefs; strongly disliked foods were thought to be bad for health and classifies as cold (Adams, 1960). Turnip greens produced and eaten in nearby areas could alleviate at least seasonally the deficiency of vitamin -A found in the diet of these people, but the position of this food holds in their system of beliefs mitigates against its acceptance (Mazess and Baker, 1964).

Pica is an example of deep-seated unyielding practice. It is the habit of eating dirty clay, chalk, limestone etc. especially by pregnant women. Keith (1968) finds a strong relationship between dirt eating during childhood and starch eating during pregnancy.

Milk, an essential food in western societies is abhorrent to other cultures. The Zulus do not permit milk for women since the reproduction functions of women are believed to be harmful to the welfare of the cattle.

An individual or a group derives status from the use of certain foods. In the Gilbert Island there is a kind of pigweed, a green leafy plant which is considered to be poor man’s food and thus many people do not eat it and failed to use an important source of vitamin C. In one well to do Gilbertese community, the poor people drink
coconut sap which when fresh, is an excellent source of vitamin C; and the wealthy buy sugar and drink a mixture of sugar and water (Parkinson, 1961). From the time of the Egyptians and Romans white flour has been a status food and only the poor use the coarsely grounded whole grain. In the rice eating areas, white rice has a status, whereas the brown rice, which is rich in thiamine, is meant for those who cannot afford to purchase the polished grain. Paradoxically, the status assigned to a food in many cases meant that those of low economic levels or low status were receiving food of higher nutritive value. The best food is always served first to the most important member of the household, father, grandfather or uncle, while the children and women being served the last (Parkinson, 1961). In times of food scarcity the women and children do not get enough food.

Emotional and psychological reactions are strongly influenced by food intake. Starvation has profound effects on behavioural patterns in man. The observations made by Franklin et al. (1945) after semi starvation for 6 months included the following: physical ability to laugh heartily or to sneeze were reduced or absent; increasing weakness and fatigue, movements slow and cautious, narrowing of interest, depression and irritability, loss of sexual desire, apprehensiveness about health; preoccupation with food in conversation; less reading and more daydreams and decision making was difficult.

(c) Religion: Religions have marked influence on the dietary habits of people. Each religion had very specific, strict rules and codes delineating what is acceptable as food (Lowenberg, 1968). Pork is avoided not only by Jews and Muslims, but also by Rastafarians and certain other groups from the Carribean. Many blacks that do not formally belong to these groups also avoid pork. Some Christian groups encourage giving up favourite foods or fasting during the solemn season of Lent, and although it is no longer required, many Catholics continue to avoid meat on Friday. Seventh Day Adventists are encouraged to be vegetarians and over 50 percent of the memberships are so.
The Hindus, by and large are vegetarians. Strict Vaisnavaite Hindus avoid meats, even while other Hindu groups may accept certain form of meats, they, without any exception, abstain from taking beefs. They also avoid certain type of meat foods on certain days. Moreover, they observe fasting on particular days of a week or of a month depending on one’s faith or due to the prescription of the religion.

A religious belief that prohibits certain food may influence a person’s nutritional status. A diet that excludes pork or shellfish will not necessarily be nutritionally deficient, because one can always eat other kind of meat and fish. A diet that prohibits all foods of animal origin is almost sure to be nutritionally inadequate unless some form of supplementation is used (Mottram, 1974).

Religion also restricts the consumption of certain food items that may vary from religion to religion. Lastly, the educational level is another important factor, which influences the nutritional status of the people. Often people are ignorant about the quality of food, mode of cooking and preserving, which affect to a great extent the nutritional value of the food.

\(d\) Sensory factors: It has been pointed out that sensory reactions play a major role in the acceptance of food. All the sensory organs participate in producing mental reaction to food. Sight or appearance of food, aroma or smell, taste, feel or touch and to a lesser extent sound also play a part. Chemoreceptors in the mouth and nose are stimulated by molecules in solution and it is a combination of these sensations that provide what is commonly referred to as flavour of food.

\(e\) Social factors: The sharing of food and drink has great significance to practically all cultures. Throughout history, human survival has hinged on interdependent relationship based on the ability to obtain food and the willingness to share it. The gesture of offering food to others has significance beyond physical survival. Sharing a valuable commodity bestows honour upon the guest and marks the host as a person of generosity and affluence. The close links between food and love and security make it difficult for many of us to stop offering food or to refuse it when
it is offered. Social eating and fooding behaviors are perhaps the most difficult to change.

(f) Media factors: Radio, television, magazine, and billboard advertising cannot be ignored as sources of influence on our eating habits these days. The highly competitive nature of the food industry ensures that we will be constantly bombarded with messages to try, to buy, to eat or drink this food or that. People are now consuming diets containing many nontraditional foods, the nutritional characteristics of which may vary sharply from the diets of their childhood. In some cases, the change may be a positive one. Yogurt, for example, can contribute needed calcium to the diets of blacks or Spanish persons who otherwise might be deficient in these nutrients because of an unwillingness or inability to drink milk either from cultural factors or lactose intolerance in adults. It must be pointed out, however, that the cost of commercial yogurt is far above that of fluid milk. On the other hand, packaged macaroni and cheese mixes may not provide the same amount of calcium as the family recipe, and vitamin C–fortified fruit drinks and powders certainly do not provide the array of nutrients as citrus juices do. Many nutritious foods are woefully under advertised because of their low profit margins or because of the lack of a strong trade organization. For successful marketing, an advertised brand name must be clearly identified with the product at the point of purchase. Obviously, most fruits and vegetables lack such identification. This means that, to the extent food advertising influences food behavior, it is generally in the direction of the packaged, more highly processed, highly refined foods. The effect of this tendency on nutritional status is however, not known.

Nutritional Status

A group’s nutritional status is a result of interplay between the member’s food sources and their culturally determined ways of using them. The source of the group’s food again depends on their nutritional ecology. It has been the usual phenomena that man eats what his forefathers ate and what his environment offers. One’s food pattern is determined by the environment in the physical, psychological and the social setting which relates to the culture of the member. Thus, food habit may again vary from
group to group and from region to region. Modern humans, in their worldwide
distribution, have survived on an enormous array of diets, from one based
predominantly on meat found among people like the Eskimos living in the far north,
to a diet of vegetable and grains, characteristic of numerous human societies (Weiss
and Mann, 1990). Although, most living humans have a diet intermediate between
these two extremes, what is virtually universal is the reliance on agriculture and
domestic animals to supply a vast range of foods consumed by living people.

India is a vast country, continues to be preponderantly a land of villages with
living conditions utterly low. Some 50% of the people in India are said to be
undernourished.

A brief review of literatures and also the aims and objects of the present study
will be followed in the next chapter.