CHAPTER III

REVIEW OF LITERATURE

Nutritional status refers to the state of nurture of an individual or a specific group. The term refers specific nutrient or to a class of nutrients and many apply to either nutritional deficiency or excess. Nutritional status of a community attempts to map out the magnitude and geographical distribution of malnutrition as a public health concern and to identify and analyse ecological causes that are directly or indirectly responsible for such a situation and formulation of guidelines for improving nutrition and health status.

Nutritional status of the population has a vital role in overall socio-economic development of the country. Diet and nutrition play important roles in the maintenance of health and prevention of disease (US Department of Health and Human Services, 1998; Food and Nutrition Board, on Diet and Health, 1989).

Dietary supplements represent an important source of essential nutrients since they often contain 100%, or more of the daily value, of one or more nutrients (Ervin, et. al., 2004; Radimer, et. al., 2004). Individuals can be broadly categorized into having optimal nutritional status, or being undernourished, over nourished, and malnourished. It is important to realize that many other life style and environmental factors, in addition to nutrition, influence health and wellbeing, but nutrition is a major, modifiable and powerful factor in promoting health, preventing and treating disease and improving quality of life (Hester, et. al., 2002).

Periodic famines have affected a wide variety of subsistence societies (Cox, 1980; Torry, 1984) and continue to do so. Many such societies experience seasonal short fall in food supply (Annegers, 1973; Chambers et. al., 1981; De Vletter, 1983; Galvin 1984; Hausman and Wilmsen, 1984; Huss-Ashmore, 1984; Waldmann, 1973). ‘This hungry season’ (lean period) often occurs during the pre-harvest period when agricultural labour requirements are high.

Evidence exist that despite occasional short falls, indigenous food systems left undisturbed can provide relatively well-balanced diets in sufficient quantity to meet
the needs of the human population (Gaulin and Konner, 1977). Some traditional diets have also been shown to have dystrophic effects. The adequacy of traditional diet also depends upon the degree to which humans can adapt to chronic low levels of energy and nutrient intake. Ample evidence supports the contention that humans adapt to both low levels of energy intake by changing their energy requirement (Apfelbawn et. al., 1971; Ashworth, 1968; Crowdy et. al., 1982; Durnin et. al., 1973; Edmundson, 1977, 1979, 1980; Garrow, 1978; James and Shetty, 1982; Sukhatme and Margen, 1982; Taylor and Keys, 1950). Research in New Guinea has also suggested that humans can adapt to very low protein intakes (Ferro-Luzzi et. al., 1975; Norgan et. al., 1974; Oomen, 1970).

The state of nutriture of an individual or a specific group depends on production, availability and intake of foodstuffs. Introduction of cash cropping and the linking of pastoralists to international markets has in many cases profoundly affected local diets (Dewey, 1981; Harvey and Heywood, 1983; Teitebaum, 1975). While some of these changes are positive - increasing crop yields and household incomes - others appear to have had a negative effect on overall nutritional status. Despite huge growth in food production, India continues to be affected by the poor physical growth and nutritional status for a sizeable number of its adults and children. This is revealed by nutritional work done in different states of India by the ICMR during 1953-1963, according to a review (Rao, 1977).

The earliest available record on diet survey in India is that of Akroyd and Krishnan on ‘Diet Surveys in South Indian Villages’ published in Indian Journal of Medical Research in the year 1937 (Vol. 24. P. 667). Since then a large number of investigators reported their findings among various castes, tribes, and communities in the Indian subcontinent. Akroyd and Krishnan's work is of great help in finding out the drawbacks in the studies on dietary pattern.

Extensive surveys on diet of people of different regions of India are summarized in ‘Diet Atlas of India’ by Gopalan and others (1993). In India, ethnic group specific nutritional studies are scanty. Initially, nutritional studies were carried out in North Eastern Region (Sengupta, 1952, 1953 and 1955). Studies on socio-economic status, dietary habits and nutrient intake were undertaken on tribal groups of India (Sengupta, 1960; Sengupta and Biswas, 1956a, 1956b; Rao and Rao, 1956,
1957a, 1957b, 1967; Roy et al., 1957, 1970). The relevant studies pertaining to nutritional status are described in the following:

Pascual (1971) analysed the influence of social and cultural factors on food habits and cause of malnutrition. He discussed the importance of socio-cultural factors like customs, beliefs, food habits and traditions that affect the nutritional status. According to him it is unfortunate that psychological, social and cultural factors, which create barriers against the change in food habits, are not understood properly, while many studies only focussed on the impersonal aspects of nutrition and malnutrition.

Chaturvedi and others (1994) assessed the nutritional status of 941 adolescent girls, aged 10-18 years belonging to scheduled caste communities in rural Rajasthan. It was found that the diets were deficient in calories by 30% to 40%, in proteins by 25% to 37%, in iron by 39% to 55%, and in vitamin A by 10% to 34%. Nearly 78% of the subjects suffered from various grades of anaemia and 40% of the subjects had B-complex deficiency, as per their study.

Sidhu (1995) examined 225 girls of schedule caste community of Moga in Faridkot district in Punjab, ranging in age from 6 to 12 years, to examine growth and to compare his measurements with that of the ICMR study on Punjabi girls. The cross sectional study revealed that greatest increase in weight among the scheduled caste girls occurred between 10 and 11 years of age (2.3 kg), while the same occurred between 9 and 10 years of age among the ICMR study of Punjabi girls (3.3 kg). Height also increased each year between 6 and 12 years old children. The greatest increase in height among the schedule caste girls occurred between 7 and 8 years of age (6.1 cm.), while the same occurred between 6 and 7 years among ICMR study of Punjabi girls (7.74 cm.). The findings suggest that socio-economic factors, ecological factors, cultural factors and lack of proper level of food and nutrients intake, affect the growth of scheduled caste girls.

A. Chandrasekar and D. Xaviour (1998) conducted a study of nutritional status of the Adi Karnataka community who were found to be of lower medium stature with an average body built. The study revealed higher frequency of females than males in the age groups of 0-14 years and 65+ years, whereas in the age groups of 15-44 years...
and 45-64 years, the reverse trend was observed among the Adi Karnataka people. Consumption of fat and calcium were found to be higher.

Yadav (1999) conducted a cross sectional survey among tribal children of Bihar to assess the nutritional status and dietary intake. The result of the study reveals that intake of protein was broadly in line with recommended dietary allowances (RDA). However, the average intake of energy and other nutrients was lower as compared to RDA. Calorie deficiency was 38% whereas protein deficiency was about 19%. In conclusion author stated that nutritional status and dietary intake of tribal children is very poor and urgent remedial measures are required.

Mehta (2000) studied the socio-demographic factors, diet and health profile of 320 elderly men and women of the three income groups of urban Baroda. Nutrient intake data of elderly men of all the income groups revealed lower consumption of carbohydrates, proteins, iron and beta-carotene, whereas fats and vitamin C intakes were higher as compared to the RDA (p <0.05). The study reveals striking differences in diet, health and disease profile with advancing age.

Nancy Harris et.al., (2001) examined the nutritional and health status of Tibetan children living at high altitudes. The study revealed that the Tibetan children had severe stunting due to malnutrition, which occurred in early life. Overall the Tibetan children showed clinical signs of malnutrition as well as high morbidity and mortality. There was a decline in the height of the children. The researchers have suggested that malnutrition and common childhood illnesses can be modified by changes in health education and health care in the Tibetan settlements.

Sidhu (2002) studied the prevalence of anaemia among scheduled caste preschool children of Punjab. Haemoglobin levels were estimated for 3500 children ranging in age from 1+ to 5+ years. Prevalence of anaemia was estimated at 81.66% among the study population. Maximum frequency of anaemia was in age group 2+ and minimum in age group 5+.

Uppal (2002) studied health and nutritional status of scheduled caste preschool children of Amritsar district of Punjab. Clinical examinations were made; height and weight measurements were taken, for a total of 1000 children including 528 boys 472 girls. Clinical symptoms and the prevalence of various deficiencies were estimated.
The study showed prevalence of under nutrition among boys and girls depicting their poor state of health and nutrition.

Vidya (2003) evaluated the nutritional status of the children of Dharwad slums. Certain parameters like anthropometric measurements, clinical examination, haemoglobin estimation, dietary survey, morbidity patterns and socio-economic conditions were used to assess the nutritional status of Dharwad slum children. Malnutrition was found among the children of parents who were casual labourers. Poor environmental factors and inadequate health care facilities also contributed to the nutritional problems.

Uppal and others (2005) carried out a study on 1,000 children of scheduled caste populations of Amritsar and found that 25.55% were suffering from protein and energy deficiency and malnutrition. More than sixty per cent of the children also suffered from vitamin A, vitamin C, and vitamin D deficiency. About 71.60% of scheduled caste children of the sample were detected to be anaemic. Haemoglobin estimation (Hb g/dl) showed that about 92.40% of scheduled caste preschool children were suffering of anaemia.

Kumari (2005) studied nutritional status of scheduled caste children. In this study anthropometric measurements showed that all the children were under weight. They also suffered from protein and energy deficiency and malnutrition, including night blindness, angular steatites, enlargement of liver, anaemia, spongy bleeding gum, and a few cases of bow legs, polio and keratomalacia. The haemoglobin level among the children was below the World Health Organization (WHO) standard. Consumption of protective foods and nutrients were less than the respective recommended dietary allowances (RDA). Socio-economic environment was found to be responsible for poor nutritional status of the sample population.

Medhi (2006) conducted a study to assess the growth and nutritional status of school age children (6-14 years) of tea garden workers of Assam. The Mean height and weight of tea garden children was less when compared to NCHS standard and affluent Indian children at all ages. Assessment of nutritional status revealed a high prevalence of malnutrition among tea garden school age children. The malnutrition was both chronic and recent in nature. Prevalence of stunting and thinness was more
among the children in the age group of 9-14 years of age group than 6-8 years of age group.

Parimalla Valli and Sathiya (2008) undertook a study in two scheduled caste and scheduled tribes’ hostels of Salem district Tamil Nadu to assess the nutritional status. The study revealed that majority among them came from joint families with large family size where the parents were usually labourer. More than 75% of them were underweight; and gross deficit was also noted in terms of required calories; while protein, fat, and calcium, and iron intake, by the adolescents, who comprised the sample, was less than the desired level. The results indicated that there was a significant and positive relation between food, nutrients and body mass index.

Van de Poel and Speybroeck (2009) demonstrated the gap in child malnutrition between the scheduled castes and scheduled tribes and the remaining Indian population, looking at both the disadvantageous distribution of health determinants and possible discriminatory or behavioural differences towards the scheduled castes and scheduled tribes. The gap was found to be primarily caused by the lower economic education levels and inaccessibility to health care services, for the scheduled castes and scheduled tribes. Differences in the effects of health determinants also played an important role. The results did not point to discrimination against scheduled castes and scheduled tribes regarding health care or education. However, in the quest to increase health care use and education among scheduled caste and scheduled tribes, the authors opined that the policy makers will have to take into account all the barriers to these services, including those related to cultural sensitivity and acceptability.

Indupalli (2009) carried out a cross sectional study among 250 adolescent girls aged 13-19 years in an urban community of Gulbarga from April 2004 to March 2005. It was observed that 94% of the girls in the sample had anaemia, 27.6% suffered from chronic energy deficiency, while 46% had other health problems, and 37.2% reported menstrual problems. Anaemia appeared to be a huge public health problem, which could be addressed through distribution and intake of IFA, tablets either in schools, or at the house.
Anuradha Goyle and Ira Yanendra (2009) assessed the nutrients intakes of 146 young girls in the age group of 10-16 years studying in a government school in Jaipur city. The mean intake of energy, protein, total fats, calcium, iron, carotenes, vitamin A, riboflavin, niacin, and ascorbic acid were below the RDA, except for thiamine and folic acid intakes. The mean intake of pulses, green leafy vegetables, fruits and milk & milk products, fats & oils were lower than those prescribed for the balanced diets.

Nihar Ranjan Rout’s study (2009) is based on NFHS data which comprised 4425 ever married women in the age group of 15-49. As expected a profound variation in nutritional status was observed between the rural and urban woman in Orissa. Nearly 33% of urban woman and 48.6% of rural woman were found to be in the low BMI group. The variations in nutritional status between these categories probably were result of rural-urban differences.

Karmakar (2010) studied prevalence of malnutrition among elderly patients in a tertiary care centre in eastern India and found that over nutrition, which includes both overweight (BMI, 25-29.9 kg/m2 of body surface area) and obesity (BMI > or = 30 kg/ m2 of body surface area), was found in only 14.5% of patients. Central obesity as per WHR was strikingly high in females (85%) compared to males.

Mehrotra Monika (2011) assessed the nutritional health status of primary school children of rural and urban areas by assessing their clinical health status and the quantity and quality of food intake by the children. The nutritional deficiency signs and symptoms were observed more in rural children than the urban children. Nutrient intake and consumption frequency of all the 6 food groups was more among the urban children compared to their rural counterparts.

Izharul Hasan (2011) conducted a cross sectional study in the three government Urdu higher primary schools of Azad Nagar and its surrounding area. A total of 500 children were included in the study. A complete physical examination of the children was conducted and deviations from the normal were recorded. The overall prevalence of malnutrition in these school children was found to be 52.00%, the prevalence of malnutrition among boys was 53.85 % (161), and among girls was 49.25 % (99). The prevalence of stunting was more in boys as compared to girls.
In the present study nutritional status was found to be highly correlated to the personal hygiene and socio-economic status.

Renuka (2011) carried out a community based study of 220 children aged 1-5 years among the Jenu Kuruba tribe of Mysore district in the month of July-August 2011. Height and weight of each child was compared with WHO Child Growth Standards-2006 Reference Data. Prevalence of underweight, stunting and wasting was 38.6%, 36.8% and 18.6%, respectively, which was statistically significant with respect to age; but not significant with respect to sex, literacy status of mother, family type, and SLI and immunization status.

Chowdhury (2011) undertook a study to explore whether the skin fold thickness can be used in assessing the nutritional status in 5-12 years aged Santal children of Purulia district of West Bengal and to determine the sensitivity of these parameters for measuring the nutritional status. Height, weight and skin fold thickness of triceps (TRSF), biceps, suprailiac; sub scapula (SBSF) and calf of Santal children were measured. The study suggests that SBSF for boys and TRSF for girls are more sensitive than other skin fold thickness for the assessment of nutritional status in Santal children. Relationship of growth pattern of skin fold thickness is different in undernourished Santal children compared to well-nourished Santal children.

Panigrahi (2011) presented a cross-sectional study involving 240 women of reproductive age. The study of this sample population was carried out in the beneficiary slum area. The prevalence of anaemia was found to be 60.8%, of which 39.6, 20.0 and 1.2% of women had mild, moderate and severe anaemia, respectively. Statistical analyses have shown that epidemiological factors like age, education of respondents, socio-economic status, history of excessive menstrual bleeding, and inadequate intake of green leafy vegetables, and pulses were found to be significantly associated with anaemia.

Datta Banik (2011) studied two distinct ethnic groups, i.e., Oraon and the Sarak, with respect to their own religion, culture, language, and food habits, who live in similar environmental conditions in Ranchi district in Jharkhand state. Anthropometric and body composition measurements, and nutritional status of adult (≥18 years) female Oraons (N = 216) and Sarak (N = 110), were recorded across
different ages and compared. Linear regression analyses revealed that age had a significant impact on all variables and the level of under nutrition and thinness increased with age. Oraon women had lower BMI, higher rates of under nutrition, and lower percent body fat (PBF) and FM compared to the Sarak women.

Prakash (2011) focused on early marriage, women's poor reproductive health and child well-being as important areas of concern. NFHS data (2005-2006) was used to examine the effects of early marriage on the reproductive health status of women and on the well-being of their children. The results show that women married at an early age were exposed to frequent childbearing, unplanned motherhood and abortions, which negatively affected their nutritional status. He opined that more emphasis needs to be placed on meeting the reproductive needs of poor adolescent mothers, and improving the nutritional status of their children.

Jaydip Sen (2011) documented the changes in mid upper arm circumference, biceps skin fold and triceps skin fold to observe whether such measurement can assess the nutritional status of pregnant women. The cross-sectional investigation was conducted among 120 pregnant women belonging to the Bengali Muslim population. The measurement taken was MUAC, BSF, and TSF. There was significant statistical difference in MUAC, BSF and TSF with the length of pregnancy.

Vijayashree Mathad (2011) assessed the nutritional status of under-five years of age as a cross sectional study conducted in Kakati-A sub-centre, under the Primary Health Centre at Vantamuri in Belgaum district. The sample size was 290. The prevalence of underweight, stunting and wasting was observed to be 26.55%, 31.38% and 7.59%, while severe degree of underweight, stunting and wasting was observed in 5.86%, 27.24% and 6.51%, respectively, in terms of World Health Organization (WHO) 2006 classification. According to the Indian Academy of Paediatrics (IAP) classification, the prevalence of Grade I malnutrition was 121 (47.10%), Grade II was 29 (10.00%), and Grade III and IV were 4 (1.40%). She concluded that majority of the children's diet was not adequate for necessary calories and proteins as per Indian Council for Medical Research (ICMR) guidelines. Less than half of children were underweight, nearly one third were stunted, and one fifth of children were categorised under ‘wasting’. No child was found to be overweight or obese.
Shivaramakrishna (2011) assessed the nutritional status of 230 adolescent girls of age 10–19 years in selected villages of the Kolar district. The prevalence of thinness was found to be 73.5% as per Indian standards. Prevalence of anaemia was 34.8% percent and it was more among the post-puberty menstruating girls than compared to pre-puberty girls. It is concluded that there is a high prevalence of under nutrition among adolescent girls in the rural area of the selected villages. Health education and nutrition interventions were recommended on priority basis.

Jai Prabhakar and Gangadhar (2011) evaluated the dietary status of 6 to 10 years children of the Jenu Kuruba and Yerava tribes of Karnataka state. The study revealed that the percentage of adequacy in energy and protein intake among children of both the tribal groups was more or less same but below the respective RDAs. The intake of calcium, iron and beta-carotene varied according to age differences, while the consumption of calcium rich food was higher among Jenu Kuruba than the Yerava children.

Sarkar (2012) assessed the growth and nutritional status of 623 rural and urban Tripuri tribal adolescent boys (aged 1 to 8 years) from West Tripura district. Prevalence of stunting, thinness and overweight were observed among 7.6%, 17.81% and 6.03% for urban, and 27.9%, 38.37% and 0.39%, respectively, for rural boys.

Das (2012) had taken an initiative to improve maternal and child health in urban slums of Mumbai including proportions of underweight, stunting, and wasting in young children. They collected anthropometric data from a sample of children. The data support the idea that much of the growth faltering was explained by faltering in height for age, and suggest a focus on a younger age-group than the children over the age of three, who are prioritized by existing support systems.

Rai (2012) attempted to understand the factors associated with chronic energy deficiency (CED) and overweight/obesity together with change in CED and overweight/obesity among the urban Indian women during 1998-2006. Both National Family Health Survey (NFHS) 1998-1999 and NFHS 2005-2006 data sets were used. The results indicated an almost 3% reduction in CED and a 6% increase in overweight/obesity during 1998-2006. The probability of CED was seen to be reduced among non-literate women and women belonging to the poorest wealth quintile.
Rajaretnam and Jyoti (2012) has brought out that a large proportion of adolescent boys and girls in both rural and urban areas are undernourished but severe under-nutrition is not much evident in the study population. Further, socio-economic differentials in under-nutrition among adolescents are not substantial, though economic factors seemed to have some bearing on it. It is found that vitamins and minerals-rich food items like green leafy vegetables and fruits and protein-rich food items like pulses, milk and milk products and non-vegetarian foods are not frequently consumed by the adolescents and thus they are prone to suffer from protein-energy malnutrition as well as deficiency of various micronutrients including anaemia. It appears that improvements in economic status of households and changes in food habits of adolescents are required for bringing about improvements in the nutritional status of adolescents.

Arlappa (2012) carried out a study to assess trends in nutritional status, nutrient and food intake among children less than five year over two time periods. It was a community-based cross-sectional study, carried out in tribal areas of India. A total of 14,587 children, 0-5 years old were covered for nutritional assessment in terms of underweight, stunting and wasting. A 24 hour diet survey was carried out in a sub-sample of the households surveyed. Wealth index was constructed. The prevalence of underweight and stunting had declined significantly over the periods (49% vs. 57%, 51% vs. 58%, respectively), while the prevalence of wasting remained similar (22% vs. 23%). There was marginal decrease in the intake of foods and nutrients over the periods, and was below the recommended levels. Stepwise regression showed that the risk of underweight and stunting was significantly (p<0.01) higher among children of illiterate mothers and children from wealth index of households from lowest to middle. Therefore implementation of appropriate nutritional intervention strategies, and improvement in household’s food security through public distribution systems, improvement in socio-economic condition and food intake, emphasis on literacy of parents, and priority for personal hygiene, were the measures recommended to step up the nutritional status among the tribal children.

Alim and Khalil (2012) conducted a cross-sectional study in six government primary schools of urban areas of Aligarh city. The mean height and weight of the children was compared with that of ICMR standard. The mean difference between
them was studied by ‘t’ test and it was concluded that the difference is statistically not significant (P> .05). The prevalence of stunting of boys and girls was 75.35% and 74.68%, respectively and wasting was observed as 86.95% for boys and 76.53% for girls. Statistically, age was significantly associated with wasting among girls only (P<.05). The study revealed poor nutritional status of school going children even while receiving mid-day meal every day.

Sheetal et.al., (2013) analysed the age specific caries rates and found that malnutrition affects the oral health and a poor oral health in turn, may lead to malnutrition. This interdependent relationship, establishes good nutritional health as promoting factor in good oral health, and vice versa. Malnutrition may alter the homeostasis, which can lead to disease progression of the oral cavity, and reduce the resistance to the microbial bio-film, as well as the capacity of tissue healing. It may even affect the development of the oral cavity. Protein-energy malnutrition occurs when there is a deficiency of protein and energy.

Megha Mittal (2013) conducted a cross-sectional survey using both qualitative and quantitative data collection methods. The study involved interviews using a questionnaire for measurement of food nutrient intake, anthropometry observations of clinical signs of morbidities and assessment of their general knowledge, and awareness about health, nutrition and sanitation. The mean BMI of the women was found to be 21.12 (±3.7) kg/m² with 25% of them being underweight, and 16% being overweight or obese. The overall quality of food and nutrient intake was poor among all the food groups. Researcher felt that efforts are needed to improve diet quality and education for rural women so that they rise in economic status and are better nourished (International Journal of Scientific and Research Publications, Volume 3, Issue 9, September, 2013).

Song Y. H. et.al., (2014) analysed the correlation of BP with height and weight in Korean adolescents (age, 10-19 years), using data from the Korean National Health and Nutrition Examination Surveys (2009-2011). Systolic BP (SBP) was more closely correlated with weight than with height in the normal weight (Body Mass Index, [BMI] ≤85th percentile), and overweight (BMI, >85th percentile) groups, and in the normal waist circumference (WC, ≤90th percentile), and high WC (>90th percentile) groups in both sexes. Diastolic BP (DBP) had a higher correlation with
height than with weight in the normal weight and normal WC groups, whereas weight was more closely associated with DBP than height in the overweight and high WC groups in both boys and girls.

Subasinghe (2014) conducted a cross-sectional study in which they collected information on socio-demographic factors, physical activity, anthropometry, blood haemoglobin concentration, and daily household food intake. Multivariable backward stepwise logistic regression was used to assess socio-economic and lifestyle factors associated with CED (defined as BMI<18 kg/m²) and anaemia. The prevalence of CED (38%) and anaemia (25%) was high. Farming was associated with CED in women (2.20, 95% CI: 1.39-3.49) and men (1.71, 95% CI: 1.06-2.74). Low income was also significantly associated with CED, while not completing high school was positively associated with anaemia. Median iron intake was high: 35.7 mg/day (IQR 26-46) in women and 43.4 mg/day (IQR 34-55) in men.

It has been observed that the approach to assess the nutritional status varied from one study to another. Based on the combined approach, i.e., using a combination of diet surveys, anthropometric measurements and rapid clinical survey, the Anthropological Survey of India had undertaken project called ‘Nutritional Status of Indian Population’, where an attempt was made to collect suitable data for the assessment of nutritional status of selected castes, tribes and communities of India and to reveal the extent of variation in the body built, diet and nutritional background of various castes, tribes and communities living in different ecological zones of our country. Twenty two population groups from eleven locations have been covered from Southern Region of the country. Four states namely, Andhra Pradesh, Karnataka, Kerala and Tamil Nadu have been covered under the project 'Nutritional Status of Indian Population'. Four groups from Andhra Pradesh, ten from Karnataka, two from Kerala and six from Tamil Nadu have been covered. The diet survey on 490 households show that the people of southern region consume on the average 483 grams of cereals, 37 grams of pulses, 45 grams of roots and tubers, 39 grams of fruits, 102 grams of milk and milk products, 18 grams of fats and oil, 28 grams of sugar and jaggery and 24 grams of fish, meat, egg, insects, etc., per day per consumption unit. Consumption of nutrients are in the tune of 2409 kcal energy, 60 grams of protein, 37 grams of fat, 29 mg. of iron, 110.7 mg. of vitamin A, 1.44 mg. of vitamins B1, 0.9
mg. of vitamin B2, 19 mg. of niacin and 50 mg. of vitamin C. The analysis reveals that the intake of calorie, vitamin A and vitamin B2 are low in comparison to the Indian Council of Medical Research recommendations. (Bhattacharya K.K. and Xavier D.)

Apart from socio-economic status, culture and beliefs, natural environment including climate, soil and natural resources also play an important role in shaping the nutritional status of a family in particular and a community in general. The present study on nutritional status of the Adi Karnataka of Mysore, Karnataka, is a modest attempt to generate necessary data on scheduled caste communities, which appear to be suffering from nutritional problems in above survey of literature. It is believed that data gathered here, and the analysis made, would help us improve the nutritional status with specific observations.