REVIEW OF LITERATURE
Chapter-II

REVIEW OF LITERATURE

Review of literature is very important for any type of research work. A systematic and thorough review of previous research studies related to the problem under study help in analyzing the problem, its historical status, its development and current status. Considering the breadth of the issues under study, a brief review of available literature is presented in this chapter, which provides a basis for the theoretical framework and interpretation of findings. The reviews are presented here as follows.

Rao and Vijayraghavan (1996) stated that body weight is the most widely used and the simplest reproducible anthropometric measurement for the evaluation of nutritional status. It indicates the body mass and is a composite of all body constituents like water, mineral, fat, protein, bone etc.

Mitchell (1997) reported that height is a reflection of post nutritional status whereas other measurement refer more to current or transitory nutritional status.

Popatia and Wend (1997) defined socio-economic status as a position of person in a society by his or her education and income.

Velkoff and Arjun (1998) said that women play a central role in child care and food processing even when their economic roles require extensive time and physical energy. Poor health has repercussions not only for women but also their families.

Chee et al. (1998) reported that habitual food consumption studies are important to find out the relationship of diet to nutritional status, particularly to identify population at risk to inadequate intakes. It is also useful to collect data.
on the usual intake of the adult population for purpose of formulating dietary
guidelines, recommended dietary allowances, national food policies, food
fortification and food assistance programmes.

FAO (1998) reported that the average Indian dietary intake remains
largely deficient in the consumption of green leafy vegetables, milk and milk
products, fish and meat.

Carol S. Coonrod (1998) stated that the persistence of hunger and object
poverty in India and other parts of the world is due in large measures to the
subjugation, marginalization and disempowerment of women. Women suffer
from hunger and poverty in greater numbers and to a great degree than men. At
the same time, it is women who bear the primary responsibility for actions
needed to end hunger, education, nutrition, health and family income. Looking
through the lens of hunger and poverty, there are seven major areas of
discrimination against women in India. Malnutrition, poor health, lack of
education, overworks unskilled, mistreatment and powerlessness.

He also stated that nutritional deprivation has two major consequences for
women. They never reach their full growth potential and anaemia. Both are risk
factors in pregnancy, with anaemia ranging from 40-50 per cent in urban areas to
50-70 per cent in rural areas. This condition complicates childbearing and results
in maternal and infant death and low weight infants.

Bisnoi et al. (1999) suggested that anthropometry is a powerful tool for
the assessment of nutritional status, particularly in field conditions where it is
difficult to conduct clinical and laboratory tests. Weight and structure are the
two basic measurements used for assessing the nutritional status, and body mass
index, which is derived form anthropometric measurement is also an important
indicator to assess the current forms of malnutrition in a community.
Stainley et al. (1999) defined anthropometry as the measurement of physical dimensions of human body. It involves the external measurement of morphological traits of human being.

Shariff Mallick (1999) reported that Indian food basket has changed drastically, the share of cereals in the food basket has gone down both in rural and urban areas. On the other hand the share of other food items has increased. The energy derived has declined whereas the consumption of fat has increased. Consumption of iron, which is an important constituent of food, contributed mostly (two-third) by cereals both in rural and urban areas. Due to changing structure of food basket from cereals to other food items and particularly from coarse cereals (which contain more iron) to finer cereals. To fill the gap we need to take more green leafy vegetables in our diet.

Subramanian (1999) reported that as income increases, there is an increase in the consumption of “protective” foods such as pulses, fruits, milk and dairy products, which while adding to calories, contribute significantly to the increase in other nutrients, whose intake is particularly lacking in the diet of poor. Throughout the developing world high incidence of disease is associated with inadequate intake or absorption of micronutrients while the intake of nutrients such as fat, calcium, riboflavin and vitamins etc. appear to be rising steadily with income, the intake of vitamin A and iron are poorly correlated with income. They also said that India has a nutritional problem both of too much and too little. People of lower strata do not get the recommended amount of energy, protein, fats, iron and calcium. People of higher strata get more than double what is recommended. Good nutrition is not only a matter of balance between intake and output, but also the absolute level of intake. For us the real problem with protein, iron and fat deficiency is low consumption of cereals. So the
consumption of cereals, particularly whole cereals and coarse cereals will help us to meet the problem of malnutrition

**Vazir, S. (1999)** defined malnutrition as an ecological problem that does not occur alone, its consorts are poverty, distributed family structure, ignorance and despair

**Doth and Mortha (1999)** suggested that women should consume daily iron and foliate supplements when they are pregnant and for at least three months after childbirth and should receive other micronutrients as needed. In areas where many women suffer chronic energy deficiency and there is a high incidence of low birth weight, pregnant and lactating women may need high energy food supplements. Educational programmes and public information campaigns can also help to address cultural norms that prevent women from eating enough.

**Doak et al. (2000)** stated that the nutritional intake of individuals varies considerably by demographic and socio-economic conditions within the household and sometimes even for the same individuals within the same household at different points in time.

**Nussbaum (2000)** underlines the importance of women’s participation in paid work for their higher well-being. She argues, for instance, that a woman who has no freedom to work outside their home does not have the same freedom of association as one who does.

**Capoor and Chetna (2000)**, India has made considerable progress in the economic sphere, it is one of the few countries where men significantly outnumber women.

**Ratzan et al. (2000)** stated that malnutrition refers to any disorder of nutrition, whether it is due to dietary deficiency called under nutrition, or to
excess diet call over-nutrition. It results form imbalance between the needs of the body’s and intake of nutrients. Malnutrition worldwide includes a spectrum of nutrient related disorders, deficiencies and conditions such as intrauterine growth retardation, protein-energy malnutrition, iodine deficiency disorder, vitamin A deficiency disorder, iron deficiency anaemia and overweight/obesity and other diet related non-communicable diseases.

Capoor and Chetna (2000) reported that women work twice as much as men equally at home as well as the work place. However, it is been argued that while the women's additional work is helpful to increase the household income, it may not always lead to an improved diet due to change in priorities.

Katherine (2000) found in a study that working homemakers ate healthier than non-working homemakers. Working homemakers consumed more bread/cereals/pasta, carbohydrates, protein, iron and calcium. In addition, working homemakers consumed approximately 200 more calories per day. Conversely non-working homemakers had higher intakes of fruit and vitamin A. She suggested that these differences may be attributed in part to the higher incomes of working homemakers who would have more money to spend on food.

Maskarinec et al. (2000) investigated the relationship between dietary pattern and body mass index in a cross sectional study and found association in direction and magnitude for all ethnic group and showed that choosing the right foods may be important in weight control and food based dietary pattern may be useful in dietary counseling among the women.

Devi and Geerwani (2000) presented in their study that literate women with higher awareness levels were more concern about their family members. They managed the amount that they earned more efficiently so as to make their families secure with food and nutrition.
Smolin and Grosvenor (2000) said that poor quality diet and increased nutrient needs cause malnutrition even in population with adequate food supply.

Park (2000) reported that immune-competence is reduced in individual with iron deficiency

Geneva ACC/SCN (2000) reported that women are more likely to suffer from nutritional deficiencies than men are for reasons including women's reproductive biology, low social status, poverty, and lack of education. Socio-cultural traditions and disparities in household work patterns can also increase women's chances of being malnourished. Globally, 50 per cent of all pregnant women are anaemic and at least 120 million women in less developed countries are underweight. Underweight hinders women's productivity and can lead to increased rates of illness and mortality.

Black, E. Robert (2001) found that the widespread prevalence of anaemia is due to the consumption of diet with different content and bioavailability of micronutrients and stage of life, economic status, place of residence within a country etc.

Sheela, K. and Shashikala, P. (2001) observed that the longest time spend by women was related to food preparation activities. Time spend by mothers on preparation of food for family meals is reported to decrease with their employment outside the home. Thus, it may affect the nutritive value and aesthetic quality of meal.

Ene-obong et al. (2001) done a study to determine the effects of socio-economic and cultural factors on the health and nutritional status of women of child bearing age. The women were engaged in farming, trading and teaching. They found that better educated women had higher incomes than those with little or no education. The teachers had significantly better health status, health and nutrition knowledge, food habits and reported significant positive correlation of
income with all nutritional variables except vitamin C, age at marriage and nutrition knowledge.

Anuradha and Khader (2001) stated that women's income has a positive impact not only on the socio-economic status of the families, but also on the food and nutrient intake of the families.

Khetarpaul, N. and Grover, I (2001) told that the most important social, economic and cultural dimensions which affect women's provision of health nutrition are women's employment and women's decision-making power vis-à-vis the disposal of their income including marketing of food purchased or purchasing food in the market, on the one hand and their ability to cook and serve adequate quantities of food to individual household members. It encompasses their nutritional knowledge and ‘autonomy’ in ‘kitchen’ decision, on the other. They reported that women from landless marginal and small land holdings are more hard pressed. The physical labour involved may be so heavy that it is detrimental to the women's health especially during pregnancy and lactation.


Khaw et al. (2001) reported that malnutrition prevents much of the world's population from reaching their full potential-mentally, physically or financially. It also contributes to higher death rates from heart disease, stroke and cancer.

Rao and Rahman (2001) found that the intake of cereals and millets decreased significantly with the increase of income and level of education. The qualitative foods such as pulses and legumes, roots and tubers, fruits, fish and other seas foods, meat and poultry products, other vegetables, nuts and oilseeds,
fats and edible oils and sugar increased significantly with the increase of income and educational status.

Sheela, K. and Shashikala, P. (2001) told that women's employment has the potential to benefit the household nutrition through increasing income. It is an accepted fact that in household with low average food availability, women and children are especially at risk.

Robeyns (2001) identifies the various ways in which women's paid work may expand the vectors of functioning available to them. It may lead to a) psychological functionings like increased self-esteem, b) social functionings like having a social network, c) financial functionings like being financially independent, and so on. The capability approach, thus, seems to accord due significance to women's paid work for enhancing their well-being.

Ene-obong et al. (2001) said that the nutritional and health status of women is of great concern in the contemporary world, because the multiple roles played by women give rise to serious health and nutritional problem. The situation is even worse in countries where societal norms and sex discrimination have forcefully subjected women to satisfy the health and nutritional needs of their families at their own expense. Women are thus vulnerable to malnutrition for social and biological reasons.

Sachdev et al. (2001) found in a study that anaemia was highly prevalent among women and its deficiency symptoms like pale conjunctiva, paleness of skin and fatigue was evident. The incidence of cold and cough, and joint pain occurred more frequently in working group, whereas occasional incidence of backache, indigestion and hypertension was observed in working group. He observed that health, morbidity and haemopoetic status of mothers of non-working group was better as compared to working group. This could be due to
more stress, strain, tension and over exposure to dust and weather among the subjects of working group

Khetarpaul, N. and Grover, I. (2001) said that the necessity for many women to plot a dual role in the household in-production (food production and income generation) and in-reproduction (activities related to nurturing and attending to basic needs) imposed immense pressure on women.

Rao (2001) stated that the Indian population is passing through a transition phase where subsistence conditions are being replaced by plentiful food but reduced physical work and therefore, an understanding of the changing nutritional scene is critical.

Bavasvapoornima (2001) observed that working women have higher levels of nutrition knowledge than the non-working women though the education status of both the groups were same.

Shobha Rao (2001) reported that VAD, which can cause growth retardation and impaired vision, remains a significant public health issue among populations that do not consume enough vitamin A. Severe VAD causes blindness, less severe VAD impairs the immune system, making people more susceptible to infection and putting them at increased risk of death. Concurrent infection with parasites and illnesses such as diarrhoea, as well as having several pregnancies too close together, can exacerbate VAD.

Shukla et al. (2002) reported that for social and biological reasons, women of reproductive age are amongst the most vulnerable to malnutrition. Many factors have been associated with both forms of malnutrition of women. These include the socio-economic (e.g. occupation, educational background and the standard of living), cultural (e.g. religion and casts), the demographic (e.g. age and marital status) and dietary characteristics.
Allen and Gillespie (2002) reported that illnesses associated with nutrient deficiencies have significantly reduced the productivity of women in less developed countries. It is difficult to determine exactly what proportion of those losses are due to maternal malnutrition, but recent research indicates that 60 per cent of deaths of children under age 5 are associated with malnutrition and children's malnutrition is strongly correlated with mother's poor nutritional status.

Gopalan et al. (2002) said that diets of the poor income groups are deficient in several nutrients namely energy, vitamin A, calcium, riboflavin and iron.

WHO (2002) reported that iron deficiency anaemia is more prevalent in women than in men. Iron deficient women have a higher mortality risk during childbirth and an increased incidence of low-birth-weight babies.

Nussbaum (2002) reported that women who can seek employment outside the home have more resources in protecting their bodily integrity from assaults within it.

Shetty, P.S. (2002) observed that the poorer household allocate more than 70 per cent of the household income on food alone; yet the nutritional needs are largely unmet and many of these poor continue to starve.

Majid, E. (2002) said that failing to meet the body's iodine requirements impairs mental functioning and can cause goiter and hypothyroidism, a condition marked by fatigue and weakness. Although programmes to iodize salt have reduced the prevalence of iodine deficiency disorders dramatically in the past 10 years, there is still wide variation in household occurs to iodized salt.

ACC/SCN and IFPRI (2002) reported that mothers who do not consume enough iodine are more likely to miscarry or have a stillborn child. The physical
growth and mental development of the children who do survive is often severely impaired, and children may suffer irreversible mental retardation.

Chadha and Olouch (2003) reported that vitamin A deficiency and iron deficiency effect women during their reproductive years and children, they hinder both the development of the individual human potential and national, social and economic development.

Memon et al. (2003) found that non-working women (housewives) do not take care about their diet from nutrition point of view. They do not know that a good diet is necessary for both mental and physical health, while many of the working women know very well about good diet. During survey they observed that many of the housewives were taking only a cup of tea in the morning instead of breakfast, the reply was that they did not have enough time or they did not like to have the breakfast at all. On the other hand, working females were taking regular breakfast and were taking proper diet than non-working women. Working women being educated, aware of the fact that the balanced diet is necessary both for mental as well as physical health.

Engstron et al. (2003) said that height and weight are two of the most commonly used anthropometric measurement in clinical practice and research.

Kennedy et al. (2003) reported that nutrient deficiencies usually occur when the habitual diet lacks diversity or is overly dependent on a single staple food, as is the case with monotonous cereal or tuber-based diet. They found that micronutrient deficiencies are most prevalent in areas where the diet lacks varieties, as is the case for many individuals in developing countries. The heaviest toll from these deficiencies is borne disproportionately by women and children. They found that iron, vitamin A and iodine deficiencies are the three micronutrient deficiencies of greatest public health significance in developing world.
Elizabeth and Leslie (2004) said that iron deficiency and anaemia are the most prevalent nutritional deficiencies in the world. The body uses iron to produce haemoglobin, a protein that transports oxygen from the lungs to other tissues in the body via the bloodstream, and anaemia is defined as having a hemoglobin level below a specific level (less than 12 grams of haemoglobin per deciliter of blood (g/dl) in non-pregnant women, less than 10 g/dl in pregnant women). Most women who develop anaemia in less developed countries are not consuming enough iron-rich foods or are eating foods that inhibit the absorption of iron. However, malaria can also cause anaemia and is responsible for much of the endemic anaemia in some areas. Other causes of anaemia include hookworm and schistosomiasis, HIV/AIDS, other micronutrient deficiencies and genetic disorder.

Okafor et al. (2004), done a survey of nutrient intake and workload of pregnant women and found that intake of calcium was the most limiting nutrient and protein, riboflavin, niacin and iron ranked next to calcium.

Crepinsek and Nancy (2004) pointed out that the higher income of families with working mothers should lead to increased food expenditures and a higher quality diet in those dimensions that might be constrained by lack of income. Food security can also be expected to improve.

Jyothilakshmi and Prakash (2004) stated that the educational level, position, health and nutritional status of the women is central to the quality of life and is a key determinant of family health.

Islam et al. (2004) said that nutrition is one of the most important factors influencing the quality of human life and nutritional status is an important health indicator to assess a country’s health status and morbidity pattern. In developing countries, women mature bearing obvious evidence of deprivation in childhood, namely stunting. Nutritional disorders are very frequent in women and involve a
high risk of morbidity and mortality. So studies on nutritional status are very important in the women of childbearing age because of low to moderate prevalence of possible deficiencies. They reported significant effect of socio-economic status on body weight, height, biceps, triceps, skin fold, body mass index and in dietary intake.

**Angela E.V. King (2004)** reported that communicable diseases such as tuberculosis, malaria and to a growing extent, HIV and AIDS are diseases of poverty. Poor women are especially vulnerable because of their low nutritional status, restricted access to education and gainful employment and heavy work loads.

**Sanjukta Bera (2004)** defined nutritional status as the state of the health of an individual and is determined by the intake of nutrients and their utilization. Food consumption is one of the major factors determining nutrition status of any community, which is also influenced by environmental changes. The need for assessment of the nutritional status also identify individual or the community at risk (due to malnutrition) ion a certain region and to provide nutrition aid.

**Jyothilakshmi and Prakash (2004)** found in a study that stress, violence, weakness, general aches and pains reduce mother’s abilities to carry out energy demanding tasks leading to poor nutritional status. In contrast mother’s “happy mood” was associated with a better nutritional status.

**Time of India (2005)** reported that women tend to ignore the most important aspect of being a working professional and full-time mom, their own daily diet and nutrition which lead to chronic stress and possibly, burnout.

**Gangadharpappa et al. (2005)** reported 25 to 46 per cent existence of illness among the women. The illnesses were backache, headache, pain in legs and hands and pain in abdomen. This may be due to considerable workload for
women who spend 8-9 hours at work. continue their work at home also and consume less food

Khochar and Khetarpal (2006) said that health and nutritional status of an individual depends on the food they eat. The diet must be chosen judiciously to provide all the nutrients needed in adequate amounts and proportion. A normal balanced diet must include daily foods from the various food groups in sufficient amounts to meet the needs of an individual. Food stuffs selected from each group should take into account the income, socio-cultural factors, availability and nutritional requirements. Selection of foods from different food groups also results in variety in the diet, which not only ensures nutritional adequacy but also increases food acceptability. They also reported that higher levels of education appear to be associated with a healthier dietary pattern in relation to chronic diseases. Women with higher education level had lower mean body mass index

NIH (2006) explained the signs of iron deficiency anaemia as

- feeling tired and weak,
- decreased work and school performance
- slow cognitive and social development during childhood
- difficulty in maintaining body temperature.
- decreased immune function, which increases susceptibility to infection.
- glossitis (as inflamed tongue)

Garcial et al. (2007) reported that anthropometric values are closely related to nutrition, genetic makeup, environmental characteristics, social and cultural conditions, lifestyle, functional status and health
Singh and Agrawal (2007) said that India has been going through a period of fast urbanization, industrialization and westernization for several decades.

Khetarpal and Kochar (2007) conducted a study by selecting 75 women, between the age group of 25-40 years, who were moderate workers. The mean daily intakes of nutrients was calculated and compared with their RDA and found that only 10 per cent of the studied women were consuming a balanced diet. Majority of them were suffering from anaemia and complained of backache, headache and pain in the body.

Sowmya and Puttaraj (2007) done a study to assess the daily intake of micronutrients by the women in the age group of 20-60 years and reported that except for calcium, thiamine, riboflavin and ascorbic acid, all the other nutrients were low compared to recommended dietary intake.

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