Chapter - I

INTRODUCTION
CHAPTER 1

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"Childhood" a unique period in life - a time, when, like a flower, the child is unfolding and growing. The care and nurture given to the child during this period of unfolding is of greatest importance.

Rousseau

Children - the supreme asset of the nation and the huge human resource need to be developed and nurtured properly for the country's progress. They can develop into productive assets if conducive and congenial atmosphere is assured to them. Early childhood period is crucial in the growth and development of an individual. The foundation of their proper physical, mental, social and psychological developments are laid in early childhood. Freud's (1936) work highlighted the importance of the first five years of life in the personality development of a child. Studies in several areas of development reveal that early patterns persist relatively unchanged as time goes on (Kaplan and Pokorny, 1972).

Bijou (1975) concluded that "Most of the child psychologists have said that preschool stage from about 2 to 5 years is the most important of all the stages of development and a fundamental analysis of that stage strongly points to the same conclusion. It is unquestionably the period during which the foundations are laid for the complex behaviour structures that are build in a child's life time".

Benjamin (1962) views that the health of the children, the little angel's of God, forms the real foundation upon which all the happiness and power in the near future depends. Good health is necessary for a sound body and mind. A hungry child can
never be expected to think and act well because nutrition is able to affect the mental growth and development is past the stages of hypothesis. The most alarming factor is that though the physical damage could be remedied later with the supplementation of diet, the damage done to the brain during the preschool years is most irreversible (Ross, 1954; Rao, 1970 and Barnes et al., 1970).

As per 1991 census, India has around 150 million children constituting 17.50% of India's population who are below the age of 6 years. A large number of them live in economic and social environment which impede the child's physical and mental development. These conditions include poverty, poor environmental sanitation, diseases, infections, inadequate access to primary health care, inappropriate child rearing and feeding practices (Department of Women and Child Development- Annual Report - 1998-99).

Of the nearly 12 million children who die each year in developing countries mainly due to preventable causes, the deaths of over 6 million or 55 percent are either directly or indirectly attributed to malnutrition (UNICEF Report, 1998).

Malnutrition is not a simple matter of whether a child can satisfy his or her appetite. A child who eats enough to satisfy immediate hunger can still be malnourished and malnutrition is largely an invisible emergency. Three quarters of children who die of malnutrition betray no outward signs of the problem.

Child malnutrition is not confined to the developing world. In some industrialized countries, widening income disparities coupled with reduction in social protection are having worrying effects on the nutritional well being of children.
Extensive surveys carried out in the country over the last several years reveal that the young child is very vulnerable to dietary inadequacies. Diets of children are deficient in calcium, riboflavin and vitamin C (Devi et al., 1991; Dahiya and Kapoor, 1992; Yadav and Singh, 1999). Prolonged subsistence on diets inadequate in nutritional quality leads to many ill effects. The adverse effects are pronounced during the early rapidly growing phase of life contributing not only to high mortality and morbidity but also adversely affecting the physical, mental and social growth of the child.

Malnutrition can take a variety of forms that contribute to each other, such as protein-energy malnutrition and deficiencies of micronutrients such as iodine, iron and vitamins, called micronutrients because they are needed in such tiny amounts. At its most basic level, malnutrition is a consequence of disease and inadequate dietary intakes.

Lack of knowledge of the needed foods and the special dietary needs of the young children such as the high requirements for proteins during early phase of rapid growth result in malnutrition. In India, prevalence of malnutrition can be attributed to several causes such as poverty, large population, poor production and unequal distribution of income and food (Chaudhary and Rao, 1983; Aujla et al., 1983; Jayalakshmi and Neelkantan, 1995; Arya and Devi, 1997). In addition to these causes, ignorance, traditional beliefs, customs, social and religious taboos further aggravate the problem of malnutrition and consequent occurrence of deficiency diseases in India (Sehgal, 1989; Kaur et al., 1990; Punia et al., 1997). Even people belonging to affluent sections of society indulge in wrong food choices because of their ignorance.

Malnutrition affect the anthropometric measurements of preschool children (Sharma and Kalia, 1990; Shrivastava and Kumar, 1995; Aminul Haque et al., 1997).
Malnutrition in childhood exerts detrimental influence on learning ability and behaviour and probably leads to irreversible mental and emotional damage. It interferes with a child's motivation, power of concentration and learning capacity so that it results in a child having lower intellectual capacity than the genetic potential. Several studies have documented that severe general malnutrition in infancy or early childhood, is characterized by a combined deficiency of energy, protein and many other reductions in cognitive abilities (Cravioto and Cravioto, 1996; Kretchmer et al., 1996). Low protein intake during postnatal period results in markedly reduced mental and psycho motor development (Morley and Lucus, 1993). Iodine deficiency causes cretinism and severe mental retardation (Stanbury, 1994). Several studies have clearly documented that iron depletion resulting in iron deficiency anaemia, result in poor attention span, poor performance in intelligence tests and some degree of perceptual disturbance (Lozoff and Brittenham, 1986, Beard et al., 1993; Sheard, 1994; Kretchmer et al., 1996).

Malnutrition often weakens the resistance of a preschool child to other infections (Schelp, 1990; Lanting et al., 1996 and Edward et al., 1996). Non nutritional diseases such as Gastroentrite, small pox, measles, tuberculosis and whooping cough more easily develop in a malnourished child. Millions of its survivors are left crippled, vulnerable to illness and intellectually disabled.

The hazards of malnutrition have been realized in our country and attempts are being made to improve the nutritional status of the vulnerable segments of the population especially pre-school children.

"The battle against preventable child mortality must continue but attention is now turning to ways of enhancing the physical and mental development of the majority of children who in fact survive infancy (WHO, 1998).
90% of the brain growth is reached by the age of four years, so nutrition of the pre-school child is of paramount importance since the foundation for life time health, strength and intellectual vitality is laid during that period. Good nutrition in childhood and throughout the life span is of utmost importance in fostering physical, mental, emotional and social growth of the population.

'Nutrition' may be defined as the science of foods and their relation to life and health. Good nutrition is the basic component of health and contributes to a more secure life, relatively free of disease and retarded mental and physical development. Thus nutrition is considered as one of the most important factor in child health care today.

Because many serious diseases begin their course in childhood, preventive measures should be undertaken at this stage of life (Andrew, 1997). In India, a number of supplementary feeding programmes have been started. Some of the ongoing supplementary feeding programmes are Mid Day Meal Programme, Special Nutrition Programme, Composite Nutrition Programme and Supplementary Feeding of Pre-school Children. Supplements of protein and calorie rich foods in the diets of children goes a long way in improving the nutritional status of pre school children (Thakar, 1990; Jayalakshmi, 1992; Abel et al., 1998). Supplementary feeding programmes improve the mental abilities of children as well (Puri et al., 1983; Choudhary et al., 1984).

Because nutrition is truly a global issue and central concern regarding the health and well being of children through out the world, UNICEF has made it the main focus of its 'State of the world's children report of 1998.

Eating habits and physical activity are particularly important and they are profoundly influenced not only by individual's understanding and attitudes towards health
issues but also by food habits and meal planning. Each person who plans meals for a family selects food for his own consumption and tends to follow a pattern from day to day. The mother who is responsible for family meals has without doubt the most important role in looking after the needs and requirements of the family. The amount of information the meal planner has about nutrition and her attitude towards it will be reflected in the adequacy of the meals. Since the mother or the family food planner is in such a strategic position, the amount of control she manifests in the home will be noticed in the food habits of the children. More education a woman has, more likely that family meals will be adequate and children of these women will be healthier (Abbi et al., 1988; Arya and Devi. 1991; Gupta et al., 1991).

Women with limited education are more prone to accept ideas of quack, to succumb easily to fads and fallacies and to be open to superstitions about food. They are less conscientious about adequate nutrition for their families (Arya and Devi, 1991; Gupta et al., 1991). Educated mothers who are well versed with issues regarding health and nutrition, well informed about balanced diet can suitably meet nutritional demands of their children.

A mother who has the knowledge of nutrition is well versed with nutritional demands during pregnancy or during lactation, supplementary foods, immunization, growth monitoring, formation of healthy food habits, personal cleanliness like brushing teeth, washing hands, daily bathing etc. as dirt is responsible for spreading infectious diseases. She can inculcate the importance of good hygiene in children. Educational level and influence of home maker's knowledge not only influence the food choices and meal patterns but also methods of cooking so that corrective steps for conserving nutritive value of foods may be taken. The above facts indicate that many nutritional and health
problems of children can be decreased if proper training and education is given to the mothers of these children. The ignorance and lack of adequate knowledge and information of mothers can be attributed as one of several causes for prevalence of malnutrition among children (Kumar et al., 1989; Gupta et al., 1991).

"Children whose parents are isolated, depressed, uninformed or misinformed about health and nutrition or unskilled in child care are obviously at much greater risk." (WHO, 1998). Further WHO Expert Committee On Nutrition stated that education in nutrition is a major strategic method for the prevention of malnutrition.

Nutrition Education is a new and important concept which has a definite role to play in education. It is an effective tool to remove ignorance, one of the major causes of malnutrition. It also includes evolving new low cost recipes, which are not only nutritious but also tastier.

Nutrition education is the process by which beliefs, attitudes, environmental influences, knowledge about food and health are channelized into actual practices which are sound and consistent with health and sanitary facilities and socio-cultural background. It aims at not only to impart knowledge for knowledge sake but to reinforce or change the behaviour and consequently the dietary pattern of society at large. The over all objective of nutrition education is to foster and establish nutritionally sound practices and hygienic habits.

It is very relevant to discuss the question of who, where, when and how of nutrition education. Nutrition education can be given to different groups of people by different methods (Devadas et al., 1966; Shah et al., 1977; Puri and Malhotra, 1982; Puri et al., 1984; Ruel et al., 1992; Sur et al., 1997). But owing to the fact that mothers play crucial
and pivotal role in managing nutrition of children, it is better that nutrition education is imparted to them because it can incur us long term benefits.

The mother can be educated about underlying causes that lead to inadequate dietary intake and infectious diseases, inadequate access to food in household, insufficient health services and unhealthy environment and that children must receive essential health care at appropriate time for proper development. This is the price of doing little or nothing to ensure good nutrition.

The government of India has also given great importance to nutrition education especially to the under privileged sections of the society. Child being the major concern is also one of the priority areas in the National Policy of Education (1986). There are various national and international agencies engaged in imparting nutrition education. These are World Health Organization (WHO), United Nation Children Emergency Fund (UNICEF), Ministry of Health and Family Welfare, Ministry of Human Resource Development and Ministry of Food and Civil Supplies.

Many Non Government Organizations (NGO) are also engaged in this work. One of the major objectives of National Scheme of Integrated Child Development Services (ICDS) launched in 1975 is to provide Health and Nutrition Education to mothers. Here package of services is delivered to mothers by Anganwadi workers. Many studies indicate that workers still lack skill in giving Health and Nutrition Education to mothers (Sunder Lal, 1978; Sharma, 1985), Some studies indicate that there is lack of adequate material with the Anganwadi Workers to conduct formal session of Health and Nutrition Education (Sheshadri, 1986).
EMERGENCE OF THE PROBLEM

The above quoted studies thus show that the future of the nation can be very bright if its younger generation is well nourished and healthy. But, unfortunately 56% of pre-school children in India are malnourished as their diets are still deficient in protein, calories, vitamins, and minerals. This is the reason for their low nutritional status. Nutritional knowledge of the mothers is very poor in low socio-economic groups. Their general educational level is also low. They have certain false food beliefs. Due to these beliefs and ignorance, they don’t give balanced diet to their children. Moreover, poverty is again detrimental in giving good diet to their children. Many supplementary feeding programmes are being organised in India where food supplement is given to children once a day. Studies have indicated that this food supplement enhances their physical and mental development. But if the child gets all the meals at home which are balanced and nutritional, it will definitely influence their development. At home, mother is responsible for planning meals for the child and taking care of his health. If we impart Health and Nutrition Education to mothers, the results will definitely be encouraging in terms of overall development of their children.

In India, attempt has been made to educate different groups (pre-school children, primary school children, secondary school children, adolescents, balsavikas) of people about nutrition. Nutrition and Health Education given to children will not benefit us much as it results in their knowledge gains but the practices that their mothers have adopted since long, don’t change. So, it is better to give Health and Nutrition Education directly to mothers so that along with knowledge, we can change their practices as well. Moreover, with the knowledge on health, hygiene, sanitation, and infectious diseases, she can safeguard the child from many dangerous diseases. It will reduce Infant Mortality Rate in India.
Although under ICDS scheme Angarwadi workers impart Health and Nutrition Education to mothers but they are not properly trained and they don't have proper material to conduct formal sessions of HNE. Thus educating mothers by Nutrition Experts is the need of the hour if we want the well being of children who are our future nation builders.

To the best of the knowledge of the investigator, no such study has been done in India or abroad to see the impact of Health and Nutrition Education of mothers on subsequent growth and development of their pre school children. So, the investigator was inspired to take up this study.

**STATEMENT OF THE PROBLEM**

The Problem under study reads as follows :-

'IMPACT OF IMPARTING HEALTH AND NUTRITION EDUCATION TO MOTHERS ON GROWTH AND DEVELOPMENT OF THEIR PRE-SCHOOL CHILDREN'.

**OBJECTIVES**

1. To measure the anthropometric (Height, Weight, Head circumference, Arm Circumference and Chest Circumference) gains of pre-schoolers of EG as compared to CG at different levels of Socio-Economic Status and Age.

2. To know the interactions between Health and Nutrition Education (HNE) of mothers, Socio-Economic Status (SES) and Age of pre-schoolers for anthropometric gains.

3. To measure DQ\(_{DQ_1, DQ_2, and DQ_{comb}}\)gains of pre-schoolers of EG as compared to CG at different levels of Socio-Economic Status and Age.

4. To know the interactions between Health and Nutrition Education (HNE) of
mothers, Socio-Economic Status (SES) and Age of pre-schoolers for DQ(DQ<sub>1</sub>, DQ<sub>2</sub> and DQ<sub>comb</sub>) gains.

5. To measure skill acquisition (Cognitive and Motor) gains of pre-schoolers of EG<sub>s</sub> as compared to CG<sub>s</sub> at different levels of Socio-Economic Status and Age.

6. To know the interactions between Health and Nutrition Education (HNE) of mothers, Socio-Economic Status (SES) and Age of pre-schoolers for skill acquisition (Cognitive and Motor) gains.

7. To measure Knowledge and Practice gains of mothers of EG<sub>s</sub> as compared to CG<sub>s</sub> at different levels of Socio-Economic Status and Age.

8. To know the interactions between Health and Nutrition Education (HNE) of mothers, Socio-Economic Status (SES) and Age of pre-schoolers for Knowledge and Practice gains of mothers.

**HYPOTHESES**

1. There will be significant gains in anthropometric measures (Height, Weight, Head Circumference, Arm Circumference and Chest Circumference) of pre-schoolers of EG<sub>s</sub> as compared to CG<sub>s</sub> at different levels of Socio-Economic Status and Age.

2. There will be significant interactions between Health and Nutrition Education (HNE) of mothers, Socio-Economic Status (SES) and Age of pre-schoolers for anthropometric gains.
3. There will be significant gains in $DQ_1, DQ_2$ and $DQ_{comb}$ of pre-schoolers of EG as compared to CG at different levels of Socio-Economic Status and Age.

4. There will be significant interactions between Health and Nutrition Education (HNE) of mothers, Socio-Economic Status (SES) and Age of pre-schoolers for $DQ_1, DQ_2$ and $DQ_{comb}$ gains.

5. There will be significant gains in skill acquisition (Cognitive and Motor) of pre-schoolers of EG as compared to CG at different levels of Socio-Economic Status and Age.

6. There will be significant interactions between Health and Nutrition Education (HNE) of mothers, Socio-Economic Status (SES) and Age of pre-schoolers for skill acquisition (Cognitive and Motor) gains.

7. There will be significant gains in Knowledge and Practices of mothers of EG as compared to CG at different levels of Socio-Economic Status and Age of pre-schoolers.

8. There will be significant interactions between Health and Nutrition Education (HNE) of mothers, Socio-Economic Status (SES) and Age of pre-schoolers for Knowledge and Practice gains of mothers.

**DELIMITATIONS OF THE STUDY**

1. The study was limited to measuring the growth and development of pre-school children with age range of 2 to 5 years belonging to SES_h and SES_l of Ambala City.
2. The study was limited to measuring the growth of pre-schoolers only for eighteen months.

3. The study was limited to measuring of only few parameters of growth.

4. The study was limited to imparting Health and Nutrition education to mothers only for one week and repeating it twice after six months interval.