Chapter 1

Introduction
Children are most valuable possession. They are the future administrator of the world. India has not only the second highest population in the world; also it has the second highest child population. About two fifth of its population are children up to 14 and 17 percent children are under six year of age. Children constitute a significant proportion of total population of India Forty percent of school age population in India consists, about 25 percent of the total population in the developing countries.

How the child develops into the mature adult is a concern of the school. School going children below 16 year of age is an important segment and comprises 343.7 million populations (UNICEF, 1993). Primary education was given priority in the 7th and 8th plan.

Health care and good nutrition improves people’s standard of living by reducing sickness and child mortality and increasing life expectancy. Good nutrition of children is an indispensable component of healthy life. It is also a determinant of healthy growth of mind and body. A diet inadequate in quality and quantity is a relevant factor affecting their growth and development.
Children are the future citizen of the nation contribution of the vital human potential. They have imparted strength of the national economy and development. Nutritional status of children is a great importance. Uttar Pradesh is the largest state of India in term of population (166,052,859) and fourth largest in term of geographical area (294,000 sq / km (Manorama Year Book, 2002). An attempt to measure the health and nutritional status of school was initiated in 1949 in U.P. and it showed a positive correlation between the nutritional statuses of children with their economic standing.

The school going age is a dynamic period of physical growth and development when the child undergoes mental, emotional and social changes. During the school year, the rate of growth further slows down. This, however, not mean that no significant growth continues at a steady pace. Further the school years are characterized by an important of functioning of most tissue and organ systems. It is important to emphasize that considerable growth and development of both muscle and bone takes place during the period. The School years precede adolescence and are in fact, spent in preparation for it.

Child growth and development can be seen as a series of steps, each one of which requires adequate amount of all nutrients. The child must have food for growth, maintenance and repair of body tissue. Each nutrient has its own specific functions but no nutrient act
independently of other nutrients. Growth requirement combined with physical activity play a role in determining a child's nutritional needs. Genetic background, gender, body size and shape are the factors. The nutrients needed by children are same needed by adults, but the amounts vary. Carbohydrates and fats provide energy for growth and physical activity. School going children is period of rapid growth. During these times, appetites expand. Children may seem to be constantly eating. When growth slows, appetites diminish and children eat less food at meal times. They also require fewer snacks. Protein builds, maintains and repairs body tissue. It is especially important for growth. In the United States, most children do not suffer from lack of dietary protein. It is important, however, to encourage children to eat two to three servings of meat, fish, poultry or other protein-rich food each day. Milk and other dairy products also are good protein sources for children. A variety of vitamins and minerals also support growth and development during the childhood years.

Calcium, from milk and dairy product, some dark green leafy vegetables, is usually sufficient in the diets of young children. As children approach adolescence, dietary calcium intakes don't always keep strong bones and teeth. Bone density suffers when calcium needs are not met during childhood. Osteoporosis, a brittle bone disease that affects older adults, begins in childhood, if diets have been taken adequate calcium rich.

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Anemia (Iron-deficiency) can be a problem for some children. Iron is an oxygen combined components of blood. Children need iron because of rapidly expanding blood volume during growth. For girls, the beginning of menstruation in late childhood adds extra demands for iron due to the regular loss of iron in menstrual blood. Meats, fish, poultry and enriched breads and cereals are the best sources of dietary iron. Most children eat diets that are adequate in vitamins A and Vitamin C. When fruit and vegetable intakes are low, children run the risk of having low intakes of both vitamins B Complex Vitamins (thiamin, niacin, riboflavin and other B complex vitamins) come from a variety of foods, including grain products, meat and meat substitutes and dairy products. Generally, children do not have trouble getting adequate intake of the B-Complex vitamins. When appetites slow down and children don’t seem to eat very well, concerned parents often jump at option of using a vitamin-mineral supplement. Generally, children don’t need such supplements, but if one is being used a, a multiple vitamin and mineral supplement are selected.

Parents should provide a variety of foods and adequately meal and snack times. In most cases, nutrient needs will be adequately met. If parents feel there is a reason to be concerned about a child's poor nutrient intake they consult a physician or trained nutrition professional, such as a registered dietitian.
Children tend to eat what is available. School-aged children from ages 6 to 11 rely on household food supplies for their snack choices. Parents and other caretaker’s help children make nutritious snack choices by keeping foods on hand from the first five food groups shown in the “Food Guide Pyramid.”

Children of the 1990s appear to be more overweight and less fit when compared to children of the 1960s. Many factors affect this trend in America’s youth. The primary reason for increasing fatness in today’s children is lack of physical activity. Today’s school-child spends an average of 26 hours each week watching television. Television is time taken away from physical activity seems to be one of the important reason.

Physical education in school declines as children precede through the grade levels. Nearly 100 per cent of fifth grades have a physical education class. The percent of students engages in physical education classes drops to 50 percent during eleventh and twelfth grades. Most school-aged children do not have physical activity to build cardio respiratory fitness. Diet of school-aged children can affect obesity, as well. Studies indicate that children have too much fat in their diets. Eating diets high in fat being less physically active leads to lifelong patterns that affect health status in older adult years.
On the other hand, parents and society may demand too much of children when it comes to controlling weight. Children young as the fourth grade show increased anxiety about their body weight during behavior appear in children as young as nine.

Parents should use caution when dealing with an overweight child. 'The first route of thumb is: Don't place children on a weight-reducing diet. Instead, focus on dietary variety. Diet planning should take place within the guideline and the "Food Guide Pyramid". Children's should not be isolated from family meals by preparing separate food. Family menus should be appropriate for all family members, including an overweight child.

Parents are the leaders in setting positive example in eating and exercising. Overweight child must be encouraged to participate in all activities, which we follow. Outdoor activities such as playing tag, swimming, walking, bicycling, flying a kite, building a snow fort and others boost energy requirements for a child and help balance energy intake with energy output. Family outing must be planned, so that it may boost physical activity. Hiking, picnicking, trips to park playground, bicycle trips and bowling are some of the prominent activities.

To reduce risk of heart disease, children should form habits related to healthful eating and exercise early in life. Studies show that
many school-aged children eat diets moderate to high in fat. From age two and one encourage children to choose foods that are lower in total fat and saturated fat. The National cholesterol Education programme (NCEP) set guidelines concerning children and adolescent. They include:

- Eat variety of food that nutritionally adequate.
- Eat enough calories to support growth and development, and to reach to maintain desirable body weight.
- Keep total fat intake to 30 percent of calories of less, saturated fat to less than 10 percent of total calories, and dietary cholesterol to less than 300 mg per day.

If there is proper nutrition at beginning of life, a child will not only have a longer life but he will also grow more rapidly, gain weight more efficiently, be more vigorous, resist infection better and shows increased learning ability. A balanced diet provide building material for growth, energy needed for vigorous physical activities for this age group, help to maintain resistance to the infections, and ensure that adequate body stores of nutrients are available for the growth demands of the teens.

A large number of diet and malnutrition survey have been carried out by different workers on the nutritional status of school children in the developing countries. The results have shown that a
majority of school going children consume inadequate diet and are malnourished. Malnutrition is a primary cause of morbidity and mortality. Malnutrition is an extremely complex phenomenon. There is no Single clinical picture but rather a great many from resulting from a variety of etiological factors. In other words a malnutrition person suffer from more than one type of malnutrition at same time, e.g. a child suffering from PEM may have vitamin A deficiency and anemia.

Nutrition and disease are the two most important factors that affect the growth of children. The maintenance of Nutrition deficiency/disease results in growth retardation. General lack of concentration and high susceptibility to infections disease. Nutritionally needy children may be suffering from all rounds under nourishment or from some specific deficiency caused by an insufficient intake of one or more of essential food elements. If any one of these elements is lacking of supplied inadequately in the diet, the organ or tissue needing it in the greatest amount will suffer the most. It is seldom now a day that school children shows signs and symptoms of severe nutrition deficiency when the diet is completely lacking or is seriously deficiently in one or more essential food elements.

In mild form however nutritional deficiencies are not infrequent and some severe cases still occur. School children are mostly in
calorie, protein, vitamin A, ascorbic acid, thiamine, riboflavin, iron and calcium. Signs and symptoms of vitamins A deficiency and anemia due to deficiencies of iron and folic acid are widely prevalent among them. Protein-calorie malnutrition results in moderate among them. Proteins-calorie malnutrition results in moderate to severe stunting in 50 percent of children with deficiencies in cognitive development susceptibility to infections diseases are increased.

A child who is physically weak will be mentally weak and cannot be expected to take full advantage of schooling. Good health is important for the child to be happy, satisfied and well adjusted. Therefore, the earlier nutrition and health education is important to the child to promote positive health practices. So, the diet of school child should therefore receive first attention. The diet should contain all the nutrients in proper proportion adequate for the maintenance of optimum health status.

For tackling the problem of specific deficiencies of iron, iodine and vitamin at Government level, a thorough prophylactic programmes are running. However, these programmes do not help to solve the problem of inadequate energy and protein in the diet. Government use to manage to provide as much of the energy and protein, which is missing in the home diets, and has started supplementary feeding programmes to overcome malnutrition and to improve nutritional status of school children. School lunch is a [9]
measure for proving health and nutrition of children. It is hoped that all children in school will receive nutritious lunch based on regional material.

Government of India started a scheme for providing mid day meals to the school children. The meal provides roughly 400-500 kcal and 20-30 g protein per day, which is expected to meet one third of energy and half of the protein RDI's. The local authorities, through the school health service, make and recognition at the earlier stage of any signs of ill health. The provision of milk and meals, physical education and routine medical and dental Inspections are among the measures taken to promote health. India has achieved tremendous increase in food production, yet the nutritional problems of children continue to be formable. Malnutrition is still one of the critical issues determining nutritional development in terms of health. The main contributed causes of malnutrition are – (i) Inadequate food production, (ii) Poverty and (iii) Lack of nutritional education.

The level of nourishment of any person is referred to as his nutritional status, which is an essential aspect of his total health. The basic aim of the assessment of nutritional status is to map out the magnitude and geographical distribution of malnutrition as a public health problem to discover and analysis the ecological factors that are responsible and to plan and put into effective measures not only for the control and education of malnutrition but also subsequent
maintenance of good nutrition. There are four major methods used to assess nutritional status of individual and population group, which include anthropometrics, clinical measurement, biochemical measurement and diet survey.

Diet survey also constitutes an essential part of any complete study of nutritional status of individuals or group providing essential information on nutrient intake levels, sources of nutrients, food habits and attitudes. Studies carried out in different countries shows that the growth and nutritional status of school children are influenced by the diets consumed by them. Survey will also yield information regarding dietary deficiencies and quality and quantity of food require overcoming them.

Nutrition plays a vital role as inadequate nutrition during childhood may lead to malnutrition, growth retardation, reduced work capacity and poor mental and social development. The problem of malnutrition is of extraordinary significance and high percentage has been observed amongst girls in West Bengal and Punjab. Incidence of anemia in developing countries is high and its prevalence is mostly attributed to iron deficiency and other nutritional deficiencies indicating more prevalence among the low income group. Nutrition Education is a sinequanon for bringing a permanent and favorable solution to the problem of malnutrition. Imparting nutrition education to mothers helps to improve the dietary status of the family as
mother’s concept about balanced diet and how to provide it, can be changed. With the improvement in nutrition knowledge gained at school level, when it is reinforced by favorable conditions in the home.

Nutrition is an input to and foundation for health and development. Interaction of infection and malnutrition is well-documented. Better nutrition means stronger immune systems, less illness and better health. Healthy children learn better. Healthy people are stronger, are more productive and more able to create opportunities to gradually break the cycles of both poverty and hunger in a sustainable way. Better nutrition is a prime entry to ending poverty and a milestone to achieving better quality of life. Freedom from hunger and malnutrition is a basic human right and their alleviation is a fundamental prerequisite for human and national development.

WHO has traditionally focused on the vast magnitude of the many forms of nutritional deficiency, along with their associated mortality and morbidity in infants, young children and mothers. However, the world is also seeing a dramatic increase in other forms of malnutrition characterized by obesity and the long-term implications of unbalanced dietary and lifestyle practices that result in chronic diseases such as cardiovascular disease, cancer and diabetes.

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All forms of malnutrition's broad spectrum are associated with significant morbidity, mortality, and economic costs, particularly in countries where both under and over nutrition co-exist as is the case in developing countries undergoing rapid transition in nutrition and life-style.

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A hypsometric method acceptable for use in pediatric practice have to be simple should not require too much time and, if possible should not require special equipment. Still they have to be sufficient to give a representative picture of body build and developmental state. During the years 1926 preliminary studies were conducted on various material in vienna to select measurements and to try out methods of evaluation that appeared simple enough to be used in pediatric routine checks (1-13) Based on these studies some measurements were selected and used in all routine examinations in my pediatric private practice during the last 8 years These measurements are: Weight; body length or standing height; stem length or sitting height; circumference of head, chest, wrist, forearm, arms, length of the hand and of the middle finger; and breadth of the horn other measurements, included in those earlier studies, were omitted in these more recent observations. Such now eliminated measurements are: length and breadth of the head and of the face; diagonal of the head; thickness of skin folds on chest, abdomen, and back; and thickness of the subcutaneous tissue on the cheeks.

Body length was taken during the first year of life in the recumbent position in older children in the standing positing; stem length was taken during the first year of life with head and trunk in the dorsal recumbent position and with hips and knees flexed to right angles: in older children in the sitting position (36).
OBJECTIVE

1. To study the socio personal and economic profile of the school going children.

2. To record the anthropometric measurement of school children.

3. To compare the nutritional intake of school children.

4. To study the impact of socio-economic variable with nutritional intake of school children.