



**A study on Assessment of Nutritional status and psychological developments of preschool children**

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**Abstract**

Over the past two decades a number of investigators have addressed the question of whether childhood malnutrition causes retardation in mental development. The objective of the present study is to evaluate the Nutritional status and mental development of the preschool children. For purpose study 25 preschool children were selected. Psychological developments of the children were drawn through observation method. Nutrient intakes were collected by using 24 hrs recall method. The study reveals that there were lower consumption in several macro and micro nutrients intake compared to Recommended Dietary Allowances (RDA) of India, which may be reflected on their nutritional status. Psychological developments of the preschoolers were also poor.

**Keywords:** Preschool children, Malnutrition, Mental Development and Nutrient intakes.

**Introduction**

The primary determinants of malnutrition, as conceptualized by several authors relate to unsatisfactory food intake, severe and repeated infections, or a combination of the two (UNICEF,1998, Rowland *et al.*, 1988 and Schroeder and Brown). The interactions of these conditions with the nutritional status and overall health of the child - and by extension - of the populations in which the child is raised have been shown in the UNICEF Conceptual framework of child survival. Briefly, the model characterizes the correlates of malnutrition as factors that impair access to food, maternal and child care, and health care. It is these very factors that impact the growth of children. Consequently, the assessment of children's growth is a suitable indicator for investigating the wellbeing of children, and as well as for examining households' access to food, health

and care (De Onis *et al.*, 2003) Factors that contribute to malnutrition are many and varied.

Malnutrition affects physical growth, morbidity, mortality, cognitive development, reproduction, and physical work capacity, and it consequently impacts on human performance, health and survival. It is an underlying factor in many diseases for both children and adults, and is particularly prevalent in developing countries, where it affects one out of every 3 preschool-age children. The majority of studies on human malnutrition and mental development have dealt exclusively with the effects of severe malnutrition (Birch *et al.*, 1971).

## Materials and Methods

The present study was conducted in a preschool at Guntur District, Andhra Pradesh, India. The data for the present study have been collected from 25 preschool children in the age group of 3-6 years preschool children were selected. Psychological developments in children were observed through human development strategies (Rajammal devadas,1984). Games, storytelling, Rhymes telling and Quize programmes etc ,were conducted.

## Results and Discussion

Information was conducted through their answers and observation method. Diet survey was carried out by weighing method (Rao *et al.*, 1986). Quantitative dietary assessment was done through actual weighing of raw food item. The average dietary intake of food per item was calculated and was compared with the RDA (Recommended Dietary Allowances) of India using the values as per 'Nutritive Value of Indian Food (Gopalan *et al.*, 2002).

**Table1: Psychological assessments of preschool Children**

S.No	Children and their developments	No of Respondents N= 25 (%)
1.	<b>Physiological development</b>	
	Active	6 (24.0)
	Dull	9 (36.0)
	Normal	10 (40.0)
2.	<b>Emotional Development</b>	
	Fear full	8 (32.0)
	Anger	3 (12.0)
	Normal	14 (56.0)
3.	<b>Intellectual developments</b>	
	Lack of concentration	5 (20.0)
	Lack of attention	7 (28.0)
	Span of attention in a given time	5 (20.0)
	Memory power	8 (32.0)
4.	<b>Social developments</b>	
	Cooperation	7 (28.0)
	Friendliness	6 (24.0)
	Mingling with others	10 (40.0)
	Helping others	2 (8.0)

Table1: shows the Psychological assessments of the preschool children, Different developments of preschoolers were discussed such as Physiological development, Emotional Development, Intellectual developments and Social developments. Under Physiological development 24.05% of the Children were active, 40.0% were normal and remaining 36.0% were dull. Emotional Development 32.0% of the children were seems to be fear full, 12.0 per cent were anger by showing temper tantrums and 56.0 % were in normal. As Piaget and In helder (1969) have argued, intellectual development is an interactive process in which the growing child must both act and be acted upon by the world around him in order to mature. One type of interaction that has been demonstrated to be particularly important in subsequent intellectual development is that between mother and child. Intellectual developments 20.0 % of the children

showed lack of concentration, 28.0% were shown lack of attention, 20.0% of the children were shown span of attention in a given time and 32.0% children were shown Memory power (Klein *et ai.*, 1976; Nerlove *et ai.*, 1974), which is translated as "listura" in Spanish and is associated with the concept of alertness, verbal facility, good memory, and a high level of physical activity, were correlated with a representative set of Preschool Battery tests (Vocabulary Recognition, Verbal Inferences, Discrimination Learning, Memory for Digits, and Embedded Figures) and found to be strongly related (*r*'s up to 0.75) to these Preschool Battery test scores. 28.0 % of the children were shown cooperation, 24.0% were shown Friendliness, 40.0 % of the children were Mingling with others and only 8.0% of the children had helping nature, which comes under social developments of the children.

According to Chavez *et al.* (1975) it is possible that deleterious effects of insufficient energy on the child's interactions with his mother or other sources of

environmental stimulation may underlie the increasingly well documented effects of malnutrition on mental development.

**Table 2: Nutrient intakes of preschool children**

S.No	Nutrients	Mean values	RDA
1.	Energy(K.cal)	1034.6 ± 2.4	1220
2.	Protein (g)	16.3 ±3.5	22.0
3.	Fat (g)	19.7±2.1	25.0
4.	Calcium(mg)	374.9±20.7	400
5.	Iron (mg)	9.5±1.5	12.0
6.	Vitamin A (mg)	1124.1 ±2.1	1600
7.	Thiamin (mg)	0.4±1.1	0.60
8.	Riboflavin (mg)	0.20±1.0	0.70
9.	Niacin (mg)	6.5±2.4	8.0
10.	Vitamin C(mg)	21.7± 4.6	40.0

RDA= Recommended Dietary Allowances (Gopalan *et al.*, 2002).

Table 2 shows the mean Nutrient intake of preschoolers, the mean nutrient (macro and micro) intake per consumption unit per day among preschoolers of Central India. The mean calories intakes among preschool children were 1034.6 ± 2.4K.cal. The mean protein intakes among preschoolers were. 16.3 ±3.5. The mean intake of calories and protein were lower when compared to Recommended Dietary Allowances (RDA) of India. Calcium, iron, Vitamin A, Thiamin, Riboflavin, Niacin and Vitamin C were lower than the standards.

Nutrients like protein, essential fatty acids, Vitamins and minerals, nuts and seeds may boost mood and keep actively and these nutrients are thought to keep the mind sharp by hiking blood flow to the brain of the children.

Malnutrition and mental development in children (Hess *et al.*, 1968 and Graves .1976) have recently presented evidence that mother-child interaction patterns for malnourished children differ from those for well-nourished children. Thus, it is possible that deleterious effects of insufficient energy on the child's interactions with his mother or other sources of environmental stimulation may underlie the increasingly well documented effects of malnutrition on mental development.

Iron is a necessary part of brain tissue. Nerve impulses move slower when iron deficiency is present. Iron deficiency during infancy may cause permanent damage to the child's brain; however, too much iron can also cause problems. Iron deficiency during the first two years of a child's life is associated with

behavior changes and delayed psychomotor development. Enough, but not too much, is the key to appropriate iron intake (Walter, 1993). Iodine deficiency during early years is associated with reduced cognition and achievement in children. Cognitive development is a term that covers human perception, thinking, and learning. Nutrition, genes, and environment are three major factors impacting cognitive development. Because there are many factors that impact learning, scientists cannot say, "If you eat this, you will be smarter." However, the role of good nutrition in child development and learning is important (Kretchmer *et al.*,1996). School-age children who ate breakfast did better on performance tests than children with no breakfast. Similar and even more dramatic effects among infants and toddlers are expected if studies on breakfast and performance are completed (Meyers and Cahwla,2000)

### Conclusion

The present study is on Overall Developments in children show their mental capacity and psychological developments. In the present study results were only fewer percentages of the children were active, intellectually good and emotionally strong and helping nature, play is an important key role in overall developments. Environmental factors, Genetic factors and Nutritional factors are influences on child's behaviour. Under nutrition results in decreased Activity levels, decreased social interactions, decreased curiosity and decreased cognitive functioning in children were observed. Optimum nutrition and Balanced diets are very important for the Child's growth and development. Today's Children are tomorrow's citizen.

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