

Assessment of Food & Nutrient Intake among Preschool Children of Kanpur City

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Abstract-

Childhood nutrition has a significant influence on health and development throughout life. The present study was conducted on preschool children of 1 to 6 years of age to assess their nutritional profile. 100 Subjects were selected randomly from Kanpur city, Uttar Pradesh (India) and divided into 2 groups viz. 1-3 years and 4-6years. The information regarding general profile and food intake were recorded. It was observed that cereals and pulses, a staple food was mostly consumed by children. The mean energy (24.25% and 35.93%), protein (16.09% and 23.40%) and iron (11.58% and 37.11%) intake of preschool children were lower than the recommended dietary allowances (RDA) in both groups respectively whereas intake of calcium was high in both groups (82.17% and 129.44%) respectively. Inadequate fat intake (4.84%) was observed in 1-3years children whereas higher intake of fat (18.12%) in 4-6years children. The results indicated that diet of preschool children were inadequate, residing in Kanpur city.

Index Terms- Food intake; Nutrient intake; Preschool children

1. INTRODUCTION

Children are the future of the country. The preschool child, is almost totally dependent on others for its food. The eating habits of parents and other carers are the ones that the child imitates and acquires. Adequate food is the most important requisite for growth, while it is important throughout childhood, it is more crucial during first five years of life when rapid growth is occurring (Rana and Hussain 2001). Nutritional status is a major component of school health services (Izharual *et al* 2011). Over 1/5th of our population comprises of children aged 5-14 years i.e. the group covering primary and secondary education (Raghava 2005). The dietary requirements of pre-school children differ from

those of older children. Pre-school children grow rapidly and are active so their energy requirements are high relative to their body size. They require foods that combine high energy and nutrient density (particularly in relation to protein, vitamin and mineral content), which should be eaten as part of small and frequent meals. As today's children are the citizen of tomorrow's world, their survival, protection and development are the prerequisite for the future development of humanity (WHO 1996). Health of children is of great importance as rapid growth occurs during this period (Shashi 1990). Good nutrition is a basic requirement for good health and a living organism is a product of nutrition (Begum 1997). Hence, the present study was designed to find out

nutritional status and nutrient intake of pre-school children.

2. METHODS AND MATERIALS

Hundred preschool children in the age of 1 to 6 years were selected randomly and divided in groups 1-3 years and 4-6years from Kanpur city of Uttar Pradesh State. A well structured detailed survey schedule was developed in accordance with the methodological procedure keeping in view the objectives of the investigation and data were collected with the help of survey schedule. Initially, friendly situation was build up so as to

efficient rapport with respondents. The information on general profile and nutritional information of respondents were recorded.

Dietary assessment:- Information regarding the intake of food was collected from the respondents using 24 hour dietary recall method. Average nutrient intake of respondents was compared with recommended dietary allowances (RDA) of Indian council of Medical Research(ICMR, 2010). Nutrients namely energy, protein, fat, calcium and iron were calculated using food composition table of ICMR .

Statistical analysis of data:- The classified data were tabulated and analyzed statistically with the help of percentage and nutrient deficient or increment percentage.

$$\text{Percentage} = \frac{n}{N} \times 100$$

Where, n=number of respondents and N= Total number of observations

$$\text{Deficient or Increment Percent} = \frac{(RDA - \text{average intake}) \times 100}{RDA}$$

RESULT AND DISCUSSION

The result obtained from the present investigation are presented as follow:

Table 1: General profile of preschool children

Parameters		N=100	Percentage
Age	1-3years	32	32.00%
	4-6years	68	68.00%
Sex	Boys	60	60.00%
	Girls	40	40.00%
Family type	Nuclear	85	85.00%
	Joint	25	25.00%
Religion	Hindu	76	76.00%
	Muslims	24	24.00%

General profile of preschool children is presented in table 1. Out of 100 subjects survey 32% children belong to 1 to 3 years of age and 68% children belong to 4 to 6 years of age. Table shows that the majority of subjects 60% were boys and remaining 40% were girls. Data from family type of the subjects 85%

belong nuclear family and 15% were belong joint family. As per data collected maximum respondents, 76% were Hindu and remaining 24% were Muslims.

Table 2: Mean food intake of preschool children

Food Group	Daily	%age	2-5 d/week	%age	Occasionally	%age	Never	%age
Cereals	98	98.00%	2	2.00%	-	-	-	-
Pulses	92	92.00%	5	5.00%	3	3.00%	-	-
Milk & milk products	98	98.00%	2	2.00%	-	-	-	-
Green leafy vegetables	68	68.00%	10	10.00%	18	18.00%	4	4.00%
Meat & Poultry	-	-	20	20.00%	42	42.00%	38	38.00%
Sugar & Jaggery	100	100.00%	-	-	-	-	-	-
Fats & oils	100	100.00%	-	-	-	-	-	-

Table 2 details the food frequency at which preschool children consume various food groups constituents, 98% of respondents consume cereals and milk & milk products on daily basis and the balance 2% respondents consumed cereals 2-5d/week. 92% respondents consume pulses at daily basis, 5% consume it 2-5d/week and 3% respondents consume pulses occasionally. Green leafy vegetables are consumed by fairly, large number of preschool children at daily basis are 68%, 10% consume it 2-5d/week, 18% consume green leafy vegetables.

Table3 : Average nutrient intake of preschool children

Nutrients	1-3 years (n=32)			4-6 years(n=68)		
	RDA*	Mean nutrient intake	Deficient/Increment percent	RDA*	Mean nutrient intake	Deficient/Increment percent
Energy(kcal/d)	1240	939.18	24.25	1690	1082.62	35.93
Protein(gm./d)	22	18.46	16.09	30	22.98	23.40
Fat(gm/d)	25	23.79	4.84	25	29.53	18.12
Calcium(mg/d)	400	728.68	82.17	400	917.77	129.44
Iron(mg/d)	12	10.61	11.58	18	11.32	37.11

*ICMR(2010)

Mean nutrients intake of preschool children of Kanpur city is given table 3. The table reveals that maximum 35.93% deficiency of energy was found in 4-6 years of age group, where as 24.25% deficiency was found in 1-3years age respondents. The daily mean intake of protein maximum 23.40% deficiency of protein was found in 4-6 years respondents and 16.09% deficiency was found in 1-3 years of age of group means the average intake of protein by the respondents was lower than RDA. Table shows that the fat

consumption 29.53% increment of fat was found in 4-6 years of age group where as 23.79% deficiency of fat was found in 1-3 years of age group. The table reveals that 82.17% and 129.44% increment of calcium was found in both year group of respondents, respectively. The iron consumption of both age group respondents was deficient which is 11.58% in 1-3 years of age group and 37.11% deficient in 4-6years of respondents. Less intake of iron may be due to less consumption of green leafy vegetables.

Patricia K. Johnston (1992) reported that the comparison of the foods eaten showed that the vegetarians ate fruits, vegetable and starchy foods much more frequently than did similar aged nonvegetarians. The percentage of calories as fat and saturated fat the vegetarian diet was lower than in the vegetarian diet and was similar to current recommendation.

Conclusion:- It can be concluded that diets of preschool children were inadequate in almost all the nutrients. There is an urgent need to impart nutrition education to mothers of pre school children, so that they can provide balanced diet to their children and improve their nutritional status.

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