

Assessment of Nutritional Intake of Urban Pre-school Children

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Abstract:

Early years are important in the child's life. Growth is the most intense and apparent indicator of physical development in early childhood. Children represent the future, and fortifying their physical, socio-emotional, language and cognitive development ought to be a priority for all societies. The emotional, social and physical development of young children has a direct effect on their overall development. Neurological research shows that the early years play a key role in children's brain development. The present study was conducted to assess nutritional status of preschool children (3-6 years). For this study, a total of one hundred urban preschool children in the age group of 3-6 years i.e. 35 pre-schoolers in age group 3-4 years and 65 pre-schoolers in age group 4-6 years were selected randomly from four preschools of Hisar district. Nutritional status of children was assessed using methods of dietary survey and anthropometric measurements (height, weight). The mean daily intake of nutrients like energy, protein, fat, calcium and iron were also significantly lower than RDA (ICMR, 2010). Mean daily nutrient intakes by the urban pre-school boys were significantly higher than girls.

Keywords: Nutritional status, daily nutrient intake, developmental status etc.

Introduction

Adequate amount of nutrients in the form of daily diet is crucial for the maintenance of good health and nutrition. Thus food and nutrient intake are closely related to nutritional status and health of an individual. According to National Family Health Survey (2005-06) reported that poverty is an important factor in the poor nutritional situation and that nutritional deficiencies are widespread even in households that are economically well off. The insufficiency in food intakes particularly due to low intake of protective foods resulted in micronutrient deficiencies. School children are commonly occupied with academic work, games and are under emotional stress coupled with unbalanced diets resulting in poor health and nutrition. Hence, the importance of good nutrition is realized in the maintenance of health of human being especially of children (Malhotra and Passi, 2007; Amuta et al., 2009).

Methodology

The present study was conducted to assess nutritional status of preschool children (3- 6 years). For this study, a total of one hundred urban preschool children in the age group of 3- 6 years i.e. 35 pre-schoolers

in age group 3-4 years and 65 pre-schoolers in age group 4+ -6 years were selected randomly from four preschools of Hisar district. Mean Daily nutrient intake of urban pre-school children was assessed using methods of dietary survey and anthropometric measurements (height, weight). A questionnaire-cum-interview schedule was developed to collect information on personal and socio-economic profile of child and dietary habits. Dietary survey was conducted to gather information on food and nutrient intake, adequacy of food and anthropometric measurements. The information regarding dietary intake was assessed using 24 hour dietary recall method for three consecutive days. Data were analyzed using Z test, ANOVA, Chi square and Correlation.

Results

Mean daily nutrient intake of urban pre-school children

Findings of the present study revealed that energy intake of urban preschool children was significantly ($P \leq 0.05$) lower than RDA i.e. 81.84 per cent and 79.74 percent in the age group 3-4 years and 4+ -6 years respectively. This energy gap was mainly due to lower energy density of their diet with inadequate intake of fats and oils, milk and milk products and roots and tubers. Steyn *et al.*, (2020) and Murakami *et al.* (2018) reported that energy intake of school children were low when compared with RDA. The results are in line of those reported by Neelam *et al.* (2007), Mitra *et al.* (2007) and Bisht and Raghuvanshi (2008) who reported that energy intake of school children were low when compared with RDA.

Table-1: Mean daily nutrient intake of urban pre-school children (3-4 years)

(n=35)

Food Stuffs (gm)	RDA (gm)	daily nutrient intake	Intake %age of RDA	Z value
Energy (Kcal)	1060	867.50±81.57	81.84	16.69*
Protein (g)	16.7	15.37±1.76	92.04	5.34*
Fat (g)	27	24.70±0.94	91.48	17.30*
Calcium (mg)	600	441.53±42.52	73.59	26.35*
Iron (mg)	9	5.77±0.95	53.00	24.30*

Values are mean ± SD

RDA-Recommended Dietary Allowances (ICMR 2010) Z-value shows comparison of nutrients intake with RDA

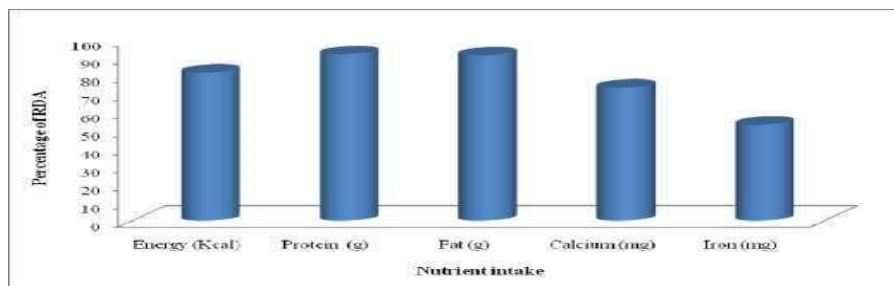


Fig-1: Daily nutrient intake (% of RDA) of urban pre-school children (3-4 years)

The data revealed that protein intake of the urban preschool children was significantly lower than the RDA i.e. 15.37g (92.04%) and 18.91g (94.08%) in the age group 3-4 years and 4⁺-6 years respectively. Verma *et al.* (2009) and Neelam *et al.* (2007) reported that energy intake of school children were low when compared with RDA. The food habit was based on the staple food items without sufficient inclusion of protein sources or good nutritional sources such as animal foods and dairy products. Several workers (Pandya *et al.*, 2015; Mitra *et al.*, 2007; Sati and Dahiya 2012 and Mehta *et al.*, 2013) also reported that the protein intake was relatively lower among school children.

Calcium intake by preschool children was 441.5 mg (73.59 %) and 498.6 mg (83.11%) in the age group 3-4 and 4⁺-6 years respectively which was significantly lower than the RDA. Murakami *et al.* (2018) reported that calcium intake among preschool children was more than RDA. Pandya *et al.*, (2015); Handa *et al.* (2008) and Bisht and Raghuvanshi (2008) reported that calcium intake was less than RDA among school children living in Allahabad and Kumaon Hills, respectively.

Table-2: Mean daily nutrient intake of urban pre-school children (4+-6 years) (n=65)

Food Stuffs (gm)	RDA (gm)	Mean daily nutrient intake	Overall intake %age of RDA	Z value
Energy (Kcal)	1350	1076.45±115.06	79.74	16.8*
Protein (g)	20.1	18.91±1.72	94.08	4.89*
Fat (g)	25	22.60±2.56	90.40	6.63*
Calcium (mg)	600	498.66±26.42	83.11	27.12*
Iron (mg)	13	7.28±1.13	56.00	35.79*

Values are mean ± SD

RDA-Recommended Dietary Allowances (ICMR 2010) Z-value shows comparison of nutrients intake with RDA

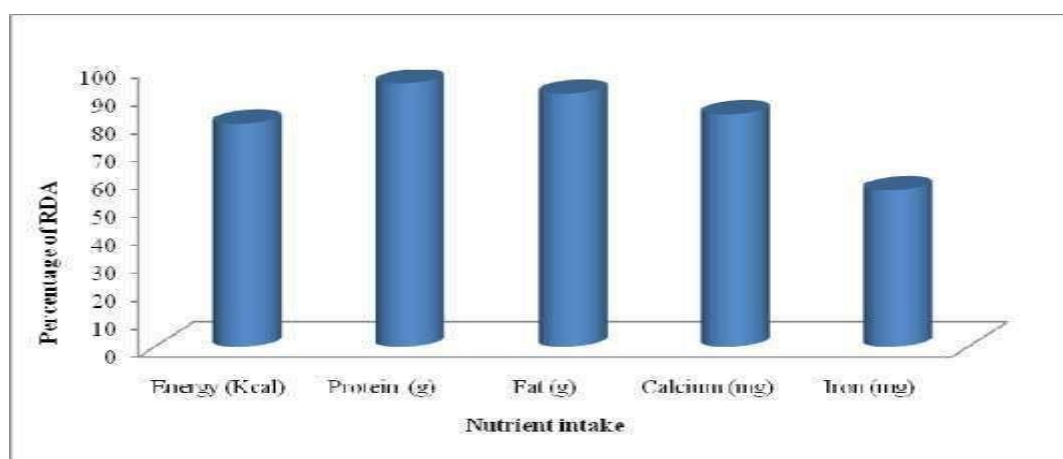


Fig. 2: Daily nutrient intake (% of RDA) of urban pre-school children (4⁺-6 years)

Iron intake in the diet of urban preschool children was significantly lower than its respective recommended level. This is due to lower consumption of green leafy vegetables and fruits by majority of children. Pandya *et al.*, (2015) and Bisht and Raghuvanshi (2008) reported similar pattern of low consumption of green leafy vegetables, which resulted less iron in the diet of children. Sankhala *et al.*

(2004) noted that iron intake of children was 10.1 mg (38.8% of RDA). Findings of earlier studies (Kumari and Jain 2005, Srihari *et al.*, 2007 and Neelam *et al.*, 2007) reported same trend of diet among school going children.

Conclusion

Results conclude that mean daily intake of nutrients like energy, protein, fat, calcium and iron were also significantly lower than RDA (ICMR, 2010).

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