



## MALNUTRITION AMONG SCHOOL GOING CHILDREN (7-9 YEARS) OF ROHTAK DISTRICT , HARYANA

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### ABSTRACT

*Malnutrition pose a serious threat to growth and development along with poor performance ,adverse effects on skilled motor activities, perception, cognition, memory, attention span, in turn the personality of the children. The present study was conducted in Rohtak district, Haryana to assess the nutritional status of 7-9 years school going children. A total of 200 school going children were selected randomly from four different schools in the study area and nutritional status was assessed by Mean daily nutrient intake and their adequacy. It is evident from result that 36% of the total respondents were taking marginal inadequate amount of Vit C. The intake of nutrients was significantly ( $P<0.05$ ) lower than their respective RDA.*

### INTRODUCTION

Malnutrition among School Going Children is a major public health problem. School going children form an important vulnerable segment of nation's population. School age is a time for acquisition of skills that permit independence in eating and development of food likes and dislikes. Nutritional status is the condition of health of an individual as influenced by nutrient intake and utilization in the body. School going children are our asset; we expect them to function as health productive member of our society in the near future<sup>(1)</sup>.

Malnutrition is a complex phenomenon. It remains the world's most serious health problem and single biggest contributor to child mortality. Nearly one-third children in the developing world either underweight or stunted and more than 30 per cent of the developing

world's population suffers from micronutrient deficiencies <sup>(2)</sup>. Deficiencies of key vitamins and minerals continue to be pervasive and they overlap considerably with the problem of general under nutrition <sup>(3)</sup>. Malnutrition not only affects physical appearance and energy levels, but also affects many aspects of the children's mental function, growth and development which have adverse effects on children's ability to learn, poor cognitive development, lower IQ, reproduction and physical work capacity. Undernourishment also impairs immune function leaving them more susceptible to infections; children with infections are more susceptible to malnutrition which increases the risk of infection and infectious diseases<sup>(4)</sup>. In this present study an attempt was made to find the prevalence of malnutrition among school children of 7-9 years age group in Rohtak district of Haryana.

## **MATERIALS AND METHODS**

The present study was conducted on school going children in the age group of 7-9 years. A total of 200 school going children were selected proportionately for the study from the Govt. Primary School of Lakhanmajra and Kahanaur villages of Rohtak district, Haryana.

Nutritional status of all selected children was assessed by Mean daily nutrient intake and their adequacy compared with the Recommended Dietary Allowances. Nutrient intake was calculated from 24 hour dietary recall data for three consecutive days using Food Composition Tables of ICMR. The mean nutrient intake was compared with the RDA given by ICMR<sup>(5)</sup>. Adequacy of nutrient intake was calculated as adequate, marginally adequate, marginally inadequate and inadequate.

## **RESULTS AND DISCUSSIONS**

Food consumption pattern revealed that the daily mean intake of nutrients i.e. energy, protein, fat, calcium, iron,  $\beta$ -carotene, thiamine, riboflavin, niacin, vitamin c, folic acid, vitamin  $\beta_{12}$  was found to be significantly ( $P < 0.05$ ) lower than recommended nutrient intake, however the energy and protein were 75.95% and 76.33%. Similar was the finding of Sati and Dahiya 2012 <sup>(6)</sup> who reported that except protein the intake of nutrients viz. energy, fat,  $\beta$ -carotene, complex vitamins, vitamin c and iron was found to be significantly lower than ( $P < 0.01$ ) lower than recommended dietary allowances, the lowest being iron (28.6%) and vit  $\beta_{12}$  (7%).

Most of the respondents i.e. 31 and 28 per cent consumed inadequate and marginally inadequate amount of thiamine. The majority of respondents i.e. 43% consumed marginally

adequate amount of niacin. The findings of the present study also highlighted that 75 per cent school going children consumed inadequate amount of Vit b<sub>12</sub> in their daily diet. Only 5% was found in adequate category of adequacy. It is evident from the Table 2 that 36% of the total respondents were taking marginal inadequate amount of Vit C.

## SUMMARY AND CONCLUSION

Among school going children malnutrition is a major public health problem. There are many direct and indirect factors which affect the nutritional status of school going children. It was observed that mean nutrients intake *i.e.* energy, protein, fat, calcium, iron, thiamine, riboflavin, niacin, vit c, folic acid and vit. B<sub>12</sub> were lower than RDA. Iron and β-carotene were consumed inadequately in more than 65 percent of the respondents. The intake of energy, protein and vit. C was marginally inadequate by most of the respondents. Hence it may be concluded that the intake of all nutrients were adequately present in the diet of school going children because nutrients like energy, fat, β-carotene, b complex vitamins, vit c, iron and calcium were found to be limiting nutrients in the diets of school going children. Also, there is a great need to focus the attention of policy maker on the nutrition status of school going children as it is one of the main indicators of development.

## References

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**Table 1: Mean daily nutrient intake of school going children**

(n=200)

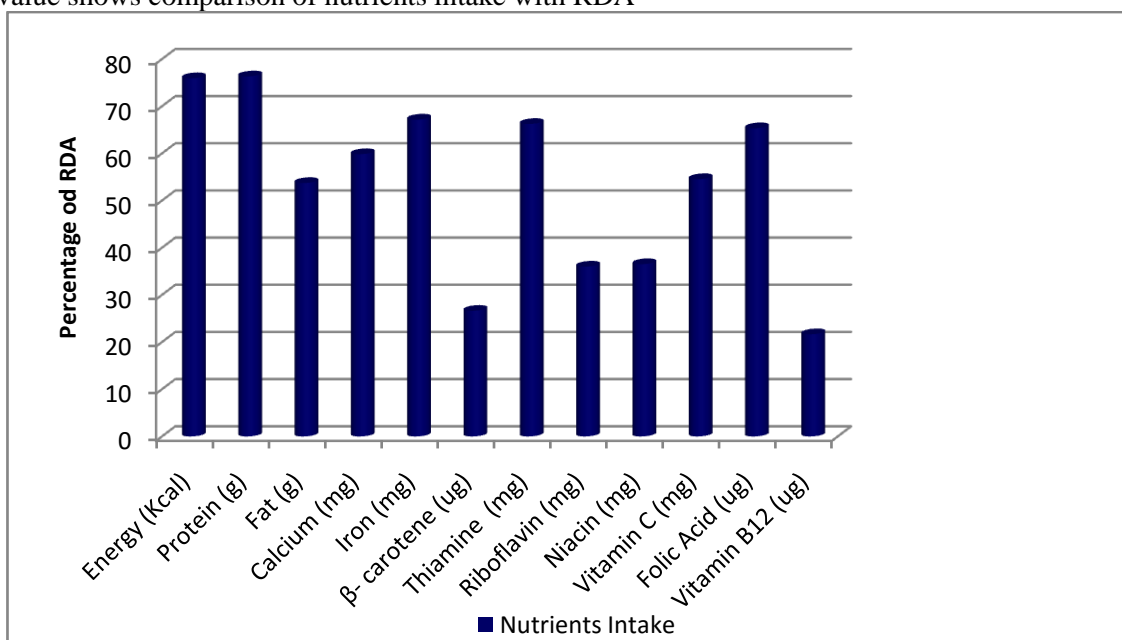
Nutrients	RDA	Mean daily nutrient intake	Z value	Overall intake (% of RDA)
Energy (Kcal)	1690	1283.71±285.50	-14.23*	75.95
Protein (g)	29.5	22.52±7.71	-9.06*	76.33
Fat (g)	30	16.12±7.73	-18.02*	53.73
Calcium (mg)	600	359.12±64.26	-64.40*	59.85
Iron (mg)	16	10.75±2.91	-18.10*	67.18
β- carotene (ug)	4800	1278.40±486.96	-72.32*	26.63
Thiamine (mg)	0.8	0.53±0.17	-15.88*	66.25
Riboflavin (mg)	1.0	0.36±0.15	-42.66*	36.00
Niacin (mg)	13.0	4.75±1.57	-52.54*	36.53
Vitamin C (mg)	40	21.82±5.12	-35.50*	54.55
Folic Acid (ug)	120	78.41±37.04	-11.24*	65.34
Vitamin B <sub>12</sub> (ug)	0.2-1.0	0.13±0.05	-174.00*	21.66

Values are mean ± SD

\* Significant at 5% level

RDA-Recommended Dietary Allowances (ICMR 2010)

Z-value shows comparison of nutrients intake with RDA



**Fig. 1: Mean daily nutrient intake of school going children**

**Table 2: Adequacy of nutrient intake of school going children**

(n=200)

Category of adequacy	Energy	Protein	Fat	Calcium	Iron	β-Carotene	Thiamine	Riboflavin	Niacin	Vitamin C	Folic Acid	Vitamin B <sub>12</sub>
<b>I</b>	-	7	10	30	2	6	20	17	11	19	21	5
<b>II</b>	34	28	49	48	7	19	21	36	43	11	27	9
<b>III</b>	47	59	33	15	24	31	28	23	30	36	24	11
<b>IV</b>	19	6	8	7	67	44	31	24	16	34	28	75

- I 100% and above (Adequate)
- II 75 to 99.9% of RDA (Marginally adequate)
- III 50 to 74.9% of RDA (Marginally inadequate)
- IV Below 50% of RDA (Inadequate)

