

ASSESSMENT OF NUTRITIONAL STATUS OF SELECTED SCHOOL FEMALE CHILDREN AGE BETWEEN 7-9 YEARS OF LOWER- INCOME GROUP OF TWO BLOCK OF LUCKNOW

Anju Verma and Seema Sonkar

Deptt. of Home Science, CSAUA & T, Kanpur

ABSTRACT

Children contribute human potential & strength to the development of the nation. Nutrition plays an important role for the development of the children. Inadequate nutrition in childhood may lead to malnutrition, growth retardation & poor mental & social development. Monitoring the nutritional status of school children is of utmost importance and present study was carried out to assess information regarding dietary consumption of the school children (7-9 year) of the two blocks viz, Sarojnagar Malihabad of Lucknow district. A sample of 200 school children was randomly selected. It was observed that intake of cereals was higher than RDI and intake of other food stuff like pulses, green leafy vegetables, milk & milk products, sugar and jaggery etc. was lower than RDI in respondent of both the blocks. The energy, fat, iron, carotene, riboflavin was less than RDA while intake of other nutrients protein, calcium, thiamine, niacin and ascorbic acid was higher than RDA in school children of both the block.

INTRODUCTION

Children are an important segment of our population children are the wealth of the nation. The nature of physical growth and development of children depends primarily upon the genetic endowments, nutritional status, psychosocial attitude and surrounding physical environmental conditions. Good nutrition is an indispensable component of healthy life. It is a determinant of healthy growth of mind & body. It plays a vital role in the physical, mental and emotional development of a child. School age is a dynamic period of growth & development as children undergo physical, mental, emotional & social changes.

Nutritional status of the children is also known to affect their physical & mental performance. Nutrition in childhood is the basis for survival & good health in adulthood. Inadequate nutrition in childhood may lead to malnutrition, growth retardation; reduce work capacity & poor mental & social development. Malnutrition during early growth leads not only to stunting. The national nutrition policy documents state that despite the implementation of several developmental programs as many as 93.8 percent children suffer from moderate degree of protein Energy Malnutrition (PEM) & 81 percent suffer from Malnutrition.

Adequate amount of nutrients in the form of daily diet is essential for the maintenance of health & good nutrition. Thus food & nutrient intake are closely related to nutritional status & health of an individual. The low intake of protective foods may result in nutritional disorders.

School children are generally 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.

Keeping this in view the present investigation was planned & conducted to determine the nutritional status of selected school children (7-9 years) of two blocks of Lucknow district with the following objectives:

To assess information regarding dietary consumption of selected school children.

To compare the dietary intake of the subjects with the standards.

MATERIAL AND METHODS

To accomplish the objectives of the study a total of 200 school female children of 7-9 years were selected randomly from two blocks of Lucknow district. A well structured interview schedule was prepared for collection of data. Interview schedule was presented on ten school female children. Based on the responses obtained from presenting & difficulties faced modifications were made to make it more functional and than it was used to collect information on the following:-

Nutritional Status: It may be defined as the condition of health as it is influenced by the intake & utilization of nutrients. For assessment of nutritional status affords was made to calculate the nutrient intake of the school children.

NUTRIENT INTAKE

Food intake survey was conducted to assess the nutritional status. Information regarding the intake of food actually consumed by the individual was noted for three consecutive days by using 25 hours recall method. Their households would be visited in order to know the quantities of food consumed in ordinary serving. Standard measures including katories, spoons & glasses of standard sizes were shown to the respondents for estimating the amounts of food. Food intake would be recorded in terms of standard size utensils and detailed information about the ingredients used and the methods of cooking would also be recorded. The amount of cooked for consumed was converted into raw ingredients and nutrient intake was calculated using food composition table and compared with recommended dietary allowance. The percent of recommended dietary allowances (RDA) was calculated using the following the formula:

$$\text{Percent RDA} = \frac{\text{intake of nutrients}}{\text{RDA}} \times 100$$

Nutrient intake of 3 consecutive days will be added and mean values of these will be used for further analysis.

DATA COLLECTION THROUGH FIELD WORK

The data was collected using personal interview method by paying repeated visits to the study area. In the initial stage, friendly discussions were held to build up rapport with the respondents.

STATISTICAL ANALYSIS

The collected and quantified data was coded and statistically analysed using standard methods. The data was statistically analysed using 't' test.

RESULT AND DISCUSSION

The food intake of school children of Sarojnagar & Malihabad block is presented in the Table 1. The mean consumption of food by children, as percent fulfillment of ICMR.

Table 1. Daily food intake by selected female School Children 7-9 years of age

Food Consumed (g/day)	Sarojninagar (M=100)	Malihabad (N=100)	't'
Cereals	263.01 \pm 2.61	261.01 \pm 2.97	0.03
Pulses	56.34 \pm 1.84	64.15 \pm 1.22	1.54
Green Leafy Vegetables	41.50 \pm 6.34	43.80 \pm 6.16	0.23
Roots & Tubers	50.81 \pm 2.97	40.12 \pm 2.24	3.03*
Other Vegetables	47.56 \pm 3.35	30.89 \pm 2.85	4.01*
Milk & Milk Products	115.60 \pm 5.74	123.80 \pm 5.35	1.13
Fats & Oils	10.02 \pm 0.25	10.52 \pm 0.64	2.02*
Sugar & Jiggery	9.61 \pm 0.44	9.75 \pm 0.29	1.22*

Values are mean \pm SE

* Significant at 5% level of significance.

CEREALS –

Daily mean consumption of cereals by Sarojninagar and Malihabad block school female children was 263.01 \pm 2.61g and 261.01 \pm 2.97g respectively. The cereals consumed by the respondents of both blocks were wheat, rice and maize. Frequency of consumption was daily but maize was mostly consumed in winter. It was reported that cereals were of Bombay and daily intake of cereals was 193 gm. However in case of 7-9 years old government school children, daily intake of cereals was found to be 170.5 \pm 14.6g, which was significant than RDI.

PULSES-

Daily mean intake of pulses was 56.34 \pm 1.84g & 64.15 \pm 1.22g of Sarojninagar & Malihabad block school female children respectively.

GREEN LEAFY VEGETABLES: -

Daily mean consumption of green leafy vegetables by Sarojninagar & Malihabad block school female children was 41.50 \pm 6.34 & 43.80 \pm 6.16g respectively which was 59.67 and 60.71 percent of RDI i.e. 75 g

ROOTS AND TUBERS AND OTHER VEGETABLES:

Mean intake of roots and tubers by school children of both blocks was 50.81 \pm 2.97 and 40.12 \pm 2.24g, respectively the value of Sarojninagar block school children was slightly higher than RDI & for Malihabad block the value was comparable with RDI. The consumption was found significant. Potato was mostly consumed in both groups, while onion consumption was daily by all the children of both the blocks followed by consumption of radish and carrot. The daily consumption of other vegetable by Sarojninagar & Malihabad block school female children was 47.56 \pm 3.25g and 30.89 \pm 2.85g respectively. Children of both blocks consumed other vegetables seasonally. Peas & cauliflower were consumed weekly by Sarojninagar & Malihabad block school female children.

MILK & MILK PRODUCTS –

The daily mean consumption of milk & milk products by Sarojninagar and Malihabad block female children was $115.60 \pm 5.74\text{g}$ & $123.80 \pm 5.35\text{g}$, respectively. Children of both the blocks preferred to consume buffalos milk than cow's or goat milk.

FATS AND OILS:

The daily mean intake consumption of fats & oils was found significant for Sarojninagar and Malihabad block school female children. Earlier study reported that rural school girl consumed only 16g of fats & oils.

SUGAR & JIGGERY:

Consumption of sugar & jiggery by Sarojninagar & Malihabad block school female children was 9.61 ± 0.44 and 9.75 ± 0.29 respectively. The consumption was found significant.

Table 2. Mean Nutrient intake by selected School female Children 7-9 years of age

Nutrient	Sarojninagar Block	Malihabad Block	't'
Protein (g)	60.10 ± 1.27	60.30 ± 1.27	0.4668
Fats (g)	25.69 ± 1.02	21.052 ± 0.52	3.9773*
Energy (kcal)	1704.61 ± 33.81	1825.70 ± 26.07	3.2844*
Calcium (mg)	506 ± 21.75	505 ± 14.90	0.0112
Iron (mg)	21.32 ± 1.30	22.34 ± 1.07	0.2732
Carotene (mg)	1967.03 ± 361.95	1930.69 ± 688.67	0.0718
Thiamine (mg)	1.67 ± 0.186	1.69 ± 0.044	0.0907
Riboflavin (mg)	1.02 ± 0.030	1.03 ± 0.29	0.0473
Niacin (mg)	13.22 ± 0.036	13.62 ± 0.31	0.8974
Ascorbic acid (mg)	94.42 ± 10.74	81.52 ± 10.99	0.7991

Values are mean \pm SE

* Significant at 5% level of significance.

NUTRIENT INTAKE –

Data on nutrient by government school female children of Sarojninagar & Malihabad block is summarized in table-2 mean consumption of nutrients by children as percent fulfillment of ICMR.

The mean daily intake of protein, fat and energy were $60.10 \pm 1.27\text{g}$, $25.69 \pm 1.02\text{g}$ and 1704.61 ± 33.81 kcal by Sarojninagar block and $60.30 \pm 1.27\text{g}$, $21.08 \pm 0.52\text{g}$ and 1825.70 ± 26.07 kcal by Malihabad block. The consumption of fat and energy was found significant in both the blocks. The daily intake of iron by school female children of both the blocks was $21.32 \pm 1.32\text{mg}$ and $22.34 \pm 1.07\text{mg}$, which was 167 and 169 percent of the RDA, respectively. The riboflavin and main content was found $1.02 \pm 0.030\text{mg}$ & 1.03 ± 0.29 mg and $13.22 \pm 0.36\text{mg}$ 13.62 ± 0.31 mg, respectively by Sarojninagar & Malihabad block school female children. The mean ascorbic acid intake by Sarojninagar block female children was observed maximum 94.42 ± 10.74 mg when

compared with Malihabad block school female children. The daily intake of calcium by school female children of both the block was 506 ± 21.75 mg and 505 ± 14.90 mg respectively.

REFERENCES

1. Balgir, R.S.; Murnu, B. and Dash, B.P. (1999): Health & Nutritional status Ashram School Children in two districts of Orissa, Ind. J.Nutr. Diet 35: 329-327.
2. Gopalan, C.; Rama, Sastri, B.V. and Balasubramaniam, S.C. (1989) Nutritive value of Indian Foods. Revised and updated by Narasinga, Rao, B.S.
3. Awasthi, N. and Kumar, A.R. (1999): Nutritional status of Hill Primary School Children. Ind. J.Nutr. Diet. 36:453-459.
4. Negi, M.Chawla, S.and Jain, R. (1999). A study on the nutritional status of selected 13-15 years school girls of Ludhiana city.J.Res.Punjab Agri Uni.36(3-4): 270-279
5. Dubey A.K. (1996). National Nutrition Policy – An overview Nutrition 30 (2) : 22-32
6. Caleindo, M.A. (1979) Nutrition and world Food Crisis. Mal. Million Publishing Company Limited, New York.
7. ICMR (1989) Nutritive value of Indian Foods. Vin Hyderabad.
8. Snedecor, G.W. and Cochran, W.G. (1967). Statistical Methods 6th Edn. Oxford & IBH. Publication, New Delhi
9. ICMR (1984). Nutritive value of Indian Foods. NIN, Hyderabad.
10. Bapat, M.M. and Aspatwar A.P. (1993): Nutritional Status of pre school and school children in slums of Bombay suburbs Ind. J. Nutr. Diet. 30: 127-133
11. Chauhan V. (2001) Assessment of nutritional status of selected school children of Palampur region. M.Sc. Thesis, CSK Himanchal Pradesh Krishi Vishvidhyalaya, Palampur.
12. Hira, C.K.; Sadhana, B; Grewal, H. and kaur, M.(1999) All India coordinated Research Project in Home Science, Food & Nutritive Unit, College of Home – Science, Panjab Agricultural University, Ludhiana, India.