ANTHROPOMETRIC MEASUREMENTS AND NUTRIENT INTAKE OF SCHOOL GOING CHILDREN FROM ASHRAMSHALA

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ABSTRACT

As a part of the government schemes the ashramshalas were established for the students of scheduled tribes which provide food, shelter and education. This study was conducted at the well known Ashram School situated nearby Nagpur. Total 100 children (50 boys and 50 girls) were surveyed to assess their nutritional status. The survey was carried out by questionnaire cum interview method. In this anthropometric measurements and dietary intake was recorded. The result of the study showed that the height and weight of the boys and girls were less than the NCHS standards. The nutrient intake was also observed less than the RDA of that age group. The diet of the children was deficient in energy, calcium and iron. Thus it is concluded that the poor anthropometric measurements are only because of the lower intake of food and nutrients than recommended.

Keywords: Ashramshala, Nutritional Status, Nutrients

INTRODUCTION

Education is the most important instrument for human resource development and has a great significance. One cannot imagine education without schools as it plays a major role in moulding the basic ideas and attitudes of the children, with a view to producing well balanced individuals. Schools provide not only education to the children but also keep them away from the social evils. Education is the key that opens the door of life. It plays a pivotal role in social change and it brings perception (Haseena A. et al, 2014).

Poverty is a critical issue which has its impact on the nutritional level of the children and their educational attainment. The socio economic factors present in the society lead most of the children suffer from under nutrition, more often they drop out from schools at an early age which directly affects the progress of the

nation (Sahu A. et al, 2015). Protein energy malnutrition is most important problem globally which is more severe. Assessment of nutritional status of this segment of population is essential for improving the overall health (Joseph R. et al, 2014).

Scheduled tribes, who have been historically out of the mainstream development initiates partly due to the still continuing socio- economic barriers and partly due to the inadequacy of the government programmes in reaching these disadvantaged groups, still find themselves in difficult to compete with other sections of the society (Haseena A. et al, 2014). Government has opened schools to accommodate these students. These schools are called ashramshalas. They take care of their education, food and shelter. The present study is an attempt to assess the anthropometric measurements and nutrient intake of children who reside in the ashramshala.

METHODOLOGY

The present study focused on the school children living in ashramshala which is situated in the nearby area of Nagpur city, Maharashtra. Total 100 subjects (50 boys and 50 girls) of the age 8, 9 and 10 years were selected for the study. The age, height (cm), weight (kg) and 03 days dietary intake was recorded by questionnaire cum interview schedule. Age was recorded from the school records, weight was determined using bathroom scales and height was measured using measuring tape fixed to a wall. The collected data was tabulated and data was analyzed statistically.

RESULTS AND DISCUSSION

A total of 100 subjects were studied from the ashramshala. From **table 1** it is observed that there are 44 % boys and 26 % girls from 08+ years age category. 32 % boys and 36 % girls are from 09+ years age category and 24 % boys ad 38 % girls are from 10+ years of age category.

Table 2 shows the height (cm) of the boys and girls for

different age groups. It is observed that the mean height (cm) of boys and girls for the 8+ years of age was 125.72 ± 15.49 and 122.30 ± 15.46 respectively. The mean height (cm) of boys and girls for the 9 years of age was observed 127.62 ± 15.46 and 130 ± 15.67 respectively whereas the mean height (cm) of boys and girls for 10+ years of age was 133.5 ± 15.64 and 135.73 ± 16.03 respectively. The mean height of all the boys and girls was observed less than the NCHS standards. According to Handa, R. (2008), the mean height in all the age groups (7-10 years) was significantly (p < 0.05) lesser than the boys (124.81 cm and 128.54 cm) in the age groups 8-9 and 9-10 years respectively.

Table 3 indicates the mean weight (kg) of the boys and girls for 08+ years of age was 26.09 ± 7.05 and 24.69 ± 4.77 respectively. The mean weight (kg) of boys and girls for the 09+ years of age was observed 25.37 ± 6.89 and 26.83 ± 7.11 respectively whereas the mean weight (kg) of boys and girls for10+ years of age was 28.16 ±

7.18 and 28. 94 ± 7.40 respectively. The mean weight of all the boys and girls was observed less than the NCHS standards except the boys from 08+ years of age, they showed 3.12v% excess weight as compared with NCHS. According to Handa, R. (2008), in his study, the mean weight in all the age groups was significantly (p < 0.05) lesser than the NCHS standards.

Table 4 gives the data of nutrient intake of boys. The result shows that the nutrient intake of boys in each age group is lacking in all the calculated nutrients (Gopalan C. 2007) except protein vitamin c and folic acid when compared with RDA. **Table 5** gives the data of nutrient intake of girls. The result shows that the nutrient intake of boys in each age group is also lacking in all the calculated nutrients (Gopalan C. 2007) except protein vitamin c and folic acid when compared with RDA. The food which the children ate in the school was not nutritionally adequate. There was no provision of special diet during illness. Milk

and sweets were not given to the children. The study concluded that if the government rules of food distribution will follow in the ashramshala there will be no nutrient deficiency will be observed. Lack of proper distribution of food and other malpractices children were unable to get required and sufficient quantity of food. Provision of vegetables was dependent upon the supply by the contractor. The meals given to the children could be balanced by the inclusion of vegetables that can be grown in kitchen gardens maintained by the ashramshala itself. Therefore positive measures are needed to improve food security.

Table 1: Age wise Distribution of the Subjects

Sr. No.	Age (years)	Boys (N= 50)		Girls (N= 50)	
		Number	(%)	Number	(%)
1.	08+	22	44	13	26
2.	09+	16	32	18	36
3.	10+	12	24	19	38
	Total	50	100	50	100

Table 2: Mean Height (cm) and Standard Deviation of subjects

Sr. No.	Sex & Age (years)	Mean & Standard Deviation	Range	NCHS	% Deficit/ Excess
1.	**Boys (N=50)** 08+ (N=22)	125.72 ± 15.49	118-138	127.0	-1.00
2.	09+ (N=16)	127.62 ± 15.46	117.136	132.2	-3.46
3.	10+ (N=12)	133.5 ± 15.64	122-146	137.5	-2.90
1.	**Girls (N=50)** 08+(N=13)	122.30 ± 15.46	116-128	126.4	-3.24
2.	09+ (N=18)	130 ± 15.67	118-138	132.2	-1.66
3.	10+ (N=19)	135.73 ± 16.03	122-146	138.3	-1.85

Table 3: Mean Weight (kg) and Standard Deviation of subjects

Sr. No.	Sex & Age (years)	Mean & Standard Deviation	Range	NCHS	% Deficit/ Excess
1.	**Boys (N=50)** 08+ (N=22)	26.09 ± 7.05	23-30	25.3	3.12
2.	09+ (N=16)	25.37 ± 6.89	22-30	28.1	-9.71
3.	10+ (N=12)	28.16 ± 7.18	25-30	31.4	-10.3
1.	**Girls (N=50)** 08+(N=13)	24.69 ± 4.77	22-26	24.8	-0.44
2.	09+ (N=18)	26.83 ± 7.11	22-30	28.5	-5.85
3.	10+ (N=19)	28.94 ± 7.40	22-35	32.5	-10.95

Table 4: Mean Nutrient Intake of Boys

Sr. No.	Age (years)	Parameters	Energy (kcal)	CHO (gm)	Protein (gm)	Fat (gm)	Calcium (mg)	Iron (mg)	Vit.c (gm)	Folic Acid (mg)
1.	08+ (N=22)	Mean & S.D.	1090.09 ± 45.61	186.31 ± 18.85	35.02 ± 8.7	18.22 ± 5.80	315.62 ± 24.54	10.67 ± 4.51	175.2 ± 18.28	230.38 ± 20.97
		Range	1020-1200	130-225	29.2-39.7	15.2-30.05	282.02-328.2	9.05-11.50	150.16-179.28	206.57-279.2
		RDA	1690	--	29.5	30	600	16	40	120
		% Deficit/ Excess	-35.49	--	18.71	-72.6	-47.39	-33.31	338	91.98
2.	09+ (N=16)	Mean & S.D.	1195 ± 47.33	219.12 ± 20.26	39.64 ± 8.62	18.25 ± 5.84	326.49 ± 24.74	11.31 ± 4.60	177.39 ± 18.30	234.8 ± 20.98
		Range	1020-1275	148-250	28.02-45.8	15.7-30.07	305.98-334.20	9.96-12.82	170.32-179.97	230.15-239.80
		RDA	1690	--	29.5	30	600	16	40	120
		% Deficit/ Excess	-29.28	--	34.37	-39.16	-45.58	-23.31	343.49	95.4
3.	10+ (N=12)	Mean & S.D.	1302.5 ±48.86	246 ± 21.23	43.48 ± 8.92	18.93 ± 5.89	335.91 ± 24.81	11.76 ± 4.64	178.16 ± 18.35	238.14 ± 20.99
		Range	1175-1420	208-290	38.7-4812	16.7-20.25	322.26-349.23	10.35-12.92	171.80-185.38	230.91-247.70
		RDA	2190	--	39.9	35	800	21	40	140
		% Deficit/ Excess	-40.52	--	8.97	-45.91	-58	-44	345.4	70.1

Table 5: Mean Nutrient Intake of Girls

Sr. No.	Age (years)	Parameters	Energy (kcal)	CHO (gm)	Protein (gm)	Fat (gm)	Calcium (mg)	Iron (mg)	Vit.c (gm)	Folic Acid (mg)
1.	08+ (N=22)	Mean & S.D.	1047.30 ± 43.97	183.30 ± 18.39	34.77 ± 8.01	18.10 ± 5.78	314.88 ± 24.11	10.04 ± 4.30	175.67 ± 18.00	277.42 ± 22.6
		Range	1010-1125	180-187	31.9-38.90	15.05-18.98	312.10-317.20	9.20-10.85	171.10-178.98	270.20-279.60
		RDA	1690	--	29.5	30	600	16	40	120
		% Deficit/ Excess	-38.02	--	17.86	-39.66	-47.52	-37.25	339.17	131.18
2.	09+ (N=16)	Mean & S.D.	1170.55 ± 47.02	202.38 ± 19.55	36.68 ± 8.32	19.45 ± 6.06	324.17 ± 24.74	10.64 ± 4.48	179.34 ± 18.40	278.08 ± 22.9
		Range	1010-1450	180-251	31.9-39.98	15.05-22.08	312.10-350.10	9.20-11.90	171.10-189.50	270.20-281.90
		RDA	1690	--	29.5	30	600	16	40	120
		% Deficit/ Excess	-30.73	--	24.33	-35.16	-45.97	-33.5	348.85	131.73
3.	10+ (N=12)	Mean & S.D.	1297.36 ±49.57	248.47 ± 21.69	36.34 ± 8.92	29.85 ± 5.89	331.46 ± 24.81	11.04 ± 4.64	182.58 ± 18.35	278.79 ± 20.9
		Range	1010-1490	180-360	31.5-49.21	15.05-29.50	312.10 - 350.29	9.20-11.98	171.10-189.10	217.25-284.70
		RDA	2010	--	40.4	35	800	27	40	140
		% Deficit/ Excess	-35.45	--	-10.04	-14.71	-58.56	-59.11	356.45	99.13

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