International Journal of Home Science 2019; 5(3): 26-29

International Journal of Home Science

ISSN: 2395-7476
IJHS 2019; 5(3): 26-29

www.homesciencejournal.com
Received: 19-07-2019
Accepted: 21-08-2019

Deeksha Saraswat
Studies in M.Sc (Food & Nutrition), Department of Home Science, Swami Vivekanand Subharti University, Meerut, Uttar Pradesh, India

Vidushi Yadav
Assistant Professor, Department of Home Science, Swami Vivekanand Subharti University, Meerut, Uttar Pradesh, India

Correspondence
Deeksha Saraswat
Studies in M.Sc (Food & Nutrition), Department of Home Science, Swami Vivekanand Subharti University, Meerut, Uttar Pradesh, India

Assessment nutritional status of mid day meal beneficiaries of government primary schools in rural areas

Deeksha Saraswat and Vidushi Yadav

Abstract
The present study title was "Assessment nutritional status of mid day meal beneficiaries of government primary schools in rural areas". The objectives of the study were assessment of the nutritional status of the children via anthropometric measurements and categorization of the students according to their Body Mass Index. The study was carried out among 50 (including 27 boys and 23 girls) school children taking mid day meal at the time of data collection. The study included children of 5-12 years of age. The locale of the study was Block- Kotwali, District- Bijnor, (U.P.). Observation was the tool used for the data collection. The demographic data of the children collected from the school's verified records. The anthropometric measurements: weight and height were measured under standard conditions. BMI was calculated and categorized according to the WHO BMI ranges for the Asians. The finding shows that the stunting rate was found among 5, 6, 7 year old boys whereas among girls stunting was reported in 6,7,10 and 11 age groups. All children who were included in the had adequate weight for age except only 8 years old boys who had lower weight for their age according to ICMR standards. According to BMI categorization 56% children were found underweight whereas 44% were in normal category. The study results concluded that the children were not so well nourished as the objective of the mid day meal is to improve the nutritional status of the children.

Keywords: Nutritional, mid-day meal beneficiaries, rural areas

Introduction
The school age, 6-12 years, is a important period of growth. During this stage growth is slow and body changes gradually. The nutritional requirement is the same for boys and girls upto 9 years after which girls out do boys and there is a change in some of nutrient requirements for boys and girls.

There are numerous components influencing the nourishing status of school-age children, including type related factors, for example, age, sex, birth request, birth weight, dietary example, and history of any ailment; financial factors, for example, family salary, training, and control of guardians; and ecological factors, for example, spot of living arrangement, accessibility of sufficient sustenance and safe water, and hygiene.

Over the time poor or deficient nourishment implies that children are prone to infections like measles or loose bowels, which can lead to malnourished children. Ailing health antagonistically influences Universalization of alimentary Education.

In India, there are many school feeding programs working at national level. In attempt to address the health and education problems at national level, the government of India started a program in form of nutritional programme to support primary education. This program is known as mid day meal program.

Mid day meal scheme programme was started from 15 August, 1995 in all states of India. This programme comes under the ministry of human resource management. As the name suggests mid day meal, it provides free lunch to school children on working days. Mid day meal is the largest school feeding programme all over the world.

Cooked meals with 300 calories and 12 mg of protein was provided to the children study in primary section (from class 1 to 5). In October 2007, it included upper primary section also with the aim to provide education and free mid day meals.

According the orders of supreme court, 28 November 2001, it was mandatory to provide cooked mid day meal in all government and government assisted primary schools. Very few states served cooked food after the supreme court orders and before the deadline of February 2002. The supreme court extended the deadline till January 2005.

Objectives of the programme are: 1) To increase the enrolment, retention and attendance rate among school going children. 2) to improve the nutritional status of children studying in government primary schools, ECS and ALE centers.

Guidelines for the MDM distribution in schools: The dietary guidelines for mid day meal programme is to provide 450 calories and 12 gm of proteins to primary school children and 700 calories and 20 gm of protein for school going children.

The meals given are composed of cereals, pulses and leafy vegetables. Under this feeding programme, the schools provide free lunch for 200 days in a year. To operate this programme, the central government provides 100 gm wheat/ rice, 15 gm pulse, 1 gm oil and 20 paisa for vegetables per day.

Nutritional assessment includes various methods and provide an idea about nutritional deficiency or efficiency, growth and development, presence of diseases or not, dietary patterns and preferences, taboos and myths followed in a particular community. Nutritional assessment is the process of growth monitoring, evaluation of the nutritional status by various methods. The data for a nutritional evaluation falls into four categories: anthropometric, biochemical, clinical, and dietary.

At the frequent intervals several studies reported about the nutritional status of the school going children in different regions.

Alim F *et al*., International Journal of Community Health (September, 2012) [4] stated that In comparison to ICMR standard height, the height of respondents boys was shorter. The difference between standard height and the height of respondents girls was found 1.71 cm to 8.74 cm. The stunting rate was higher in girls than boys and the wasting rate was higher in boys than girls. The girls tend to gain more weight in pre-puberty and puberty stage. According to the overall report nutritional status of children was poor.

National Institute of Nutrition, Hyderabad (1991) [5], stated that the nutritional status of the school children providing mid day meal were relatively better than the children studying in non-mid day meal schools. Impact of the mid day meal scheme on scholastic performance, attendance and dropout rates showed a favorable status in mid day meal schools. There were also reported some problems related storage, cooking, lack of transport, poor quality of food.

The present study entitled.... carried out among government primary school children. The study included 50 children and their nutritional status was assessed through anthropometric measurements and calculating BMI.

The present study is entitled "Assessment nutritional status of mid day meal beneficiaries of government primary schools in rural areas" with the following objectives:

1. assessment of the nutritional status of the children via anthropometric measurements and comparison between the ICMR standards and respondents data
2. categorization of the students according to their Body Mass Index.

Methodology

This portion describes the methodology adopted to gain the objectives of the study.

Research method: cross-sectional

The study was carried out from January, 2019 to March, 2019 in government primary schools.

Selection of the locale

The study was conducted in government primary schools of rural area of District Bijnor, Block - Kotwali, Tehsil- Nagina

Population

The target population in the study was the children of government primary schools where mid day was served.

The accessible population in the study was the students of primary government schools studying in class 1-5 and taking mid day meal at the time of study conducting.

Sample size

The sample size for the present study was 50 students of 5-12 years age.

Sampling method

The samples were collected using simple random sampling methods.

The study includes the children, who were

- Studying in government primary schools in 1-5 classes
- Taking mid day meals in the schools
- Aged between 5-12 years
- Available at the time of data collection

The children who were absent at the time of data collection and belongs to upper primary section excluded from the study.

Tool used for the data collection

Observation

- A semi structured questionnaire was used for taking demographic data of children

Process of data collection

Assessment of the nutritional status of the mid day meal beneficiaries was done through anthropometric measurements. Weight and height were measured as anthropometric measures for the assessment of nutritional status.

1. Bathroom weighing scale was used to measure the weight of children after removing the shoes.
2. A stretchable inch tape was used to measure the length of the students.
3. Body Mass Index of the children was calculated by using formula,

BMI = weight (kg)/ height(mt^2)

Procedure for the data analysis

The collected data of children was analyzed through comparison with standards. The mean of height and weight was calculated and compared with the mean of ICMR standard height and weight for the children. The categorization according to BMI was done according to WHO BMI ranges for the Asians. Charts (line and pie chart) and tables were used to present the data with their interpretation.

Result and Discussion

Table 1: Distribution of mean height, weight and BMI of the participants (boys)

SI no.	Age (years)	No.	Mean height	Mean weight	Mean BMI
1.	5	3	96.6± 2.88	16.6 ±1.25	17.3±2.21
2	6	5	108 ± 6.93	18.7±1.65	17.2±3.23
3	7	4	108.1±5.54	22.7 ±4.57	20.3±2.07
4	8	2	113.7±8.83	26.7 ±3.18	20.7±0.89
5	9	6	129.5±11.0	29.3±2.06	17.6±2.0
6	10	2	127.5±4.14	30.5±7.77	18.72±0.65
7	11	3	136.6+±2.88	32.3±3.51	17.3±2.10
8	12	2	137.5±3.53	34±5.65	17.7±2.62

Table 2: Distribution of mean height, weight and BMI of the participants (girls)

SI no.	Age (years)	No.	Mean height	Mean weight	Mean BMI
1.	5	1	110±0	16±0	13.2±0
2	6	5	103.5±6.75	17.4±6.75	16.5±3.20
3	7	1	102.5±0	19±0	18.26±0
4	8	5	118.5±8.58	24.9±3.18	17.95±3.07
5	9	2	126.2±1.76	29.5±0.70	18.5±0.86
6	10	4	123.7±5.95	28±0	19.9±1.91
7	11	3	135.8±3.81	35.6±3.21	19.3±0.97
8	12	2	130±3.53	33.5±2.12	20.2±2.0

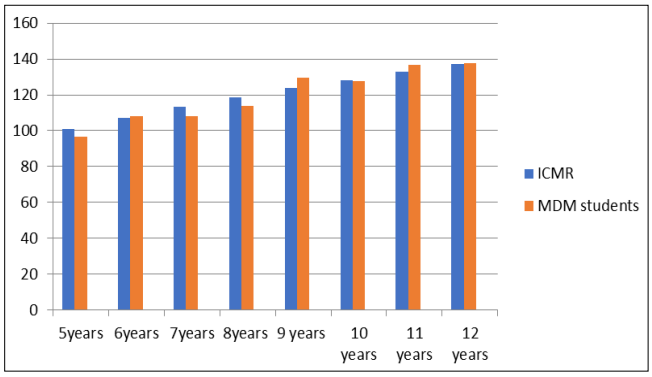

Fig 1: Comparison between mean value of ICMR standard height and sample data of boys

According to the data shown in fig.1 the mean value of the 5 year old boy is higher than the sample data of rural primary schools. According to ICMR the mean height of 5 year old boy is 1o1.1, while it is 96.66 of sample children. In case of 6 year old boy it is found somewhat higher than the standard height mean given by ICMR. 7 year old boy found somewhat stunted due to their lower height according to age. The standard mean height for 7 year old boy is 113.4, which is higher than the sample height mean i.e. 108.12. The mean value of standard height is 118.6 which is higher than the sample data height. The height of 9 year old children (boy) was found normal. The mean value of sample (129.5) is higher than the mean value of standards (123.8. The mean value of 10 years old boy height (127.5) was found a little lower than the normal standard mean value (128.2). In case of 11 year old's mean value of height a higher rate was reported. That was 136.6 whereas the mean value of standard height is 132.7. The mean value of the height of 12 year old boy was 137.5 which is equal to the standard height mean value i.e. 137.4. The prevalence of the stunting was found among 5, 7 and 8 years old boys.

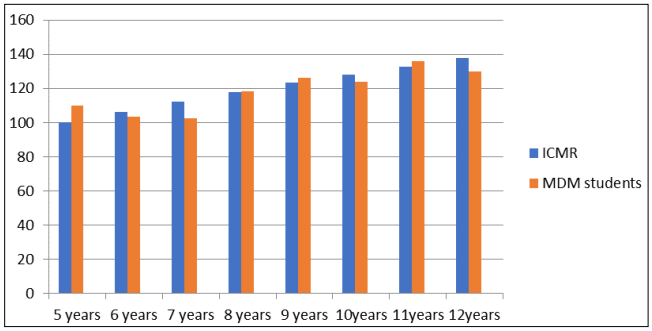

Fig 2: Comparison between mean value of ICMR standard height and sample data of girls

The fig: 2, shows the comparison between respondent girls height mean and ICMR standard height mean value for girls. The mean value of height of 5 years old girl according to ICMR is 100.3 where as the mean value of height of sample is greater than the standard i.e. 110. The mean value of height of 6 year old girls found 103.5 which is lower than the standard height mean (i.e. 106.2). The standard mean value of 7 year old girls (112.4) is higher than the sample height mean value which is 102.5. In case of the standard height mean value (118.5) and the sample height mean value is equal (118.5). The mean value of 9 year old Respondents girls is higher than the standard height mean value i.e. 126.2 and 123.4 respectively. The height mean of 10 year old girls was found 123.75 which is lower than the standard height mean. The sample mean value of height is 135.8 and it is higher than 132.7, which is standard height mean value. In case of 12 year old girls it (mean value of respondents girls height) is found lower than the mean value of standard i.e. 130 and 137.6 respectively. The prevalence of stunting was found among the 6 and 7 years old age girls.

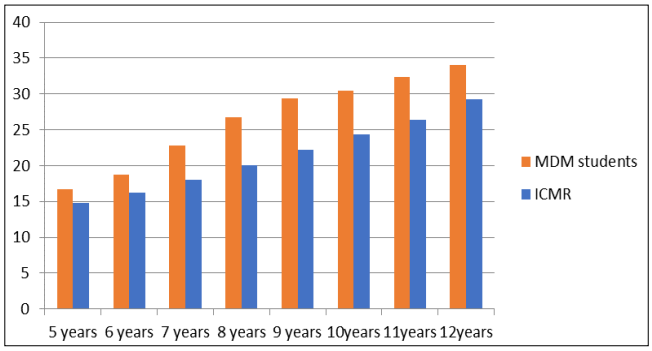

Fig 3: Comparison between mean value of ICMR standard weight and sample data of boys

The fig: 3 shows the comparison between the mean value of weight ICMR standard weight and mean value of weights of respondents boys. The mean value standard weight for 5 year old boy is 14.8 and the mean value of weight of respondent boys is 16.6 which is higher than the standards. The mean value of weight of 6 year old boy is also higher than the standards (16.3). The mean value of weight of respondent 7 years old boys is higher than the ICMR weight standards. The mean value of 8 year old standard height is 20.1 and it is lower than the mean value of Respondents weight i.e. 26.7. The mean value (29.3) of 9 year old Respondents height is higher than the ICMR standards (22.3). The mean value of standard height for 10 year old boy is 24.3, whereas the mean

value of weight of respondents is 30.5, so it is greater than the standards. The mean weight of 11 year old male respondents is 32.3 greater than the standards (26.4). The mean value of standard height for 12 year old boy is 29.2 but the respondents weight mean is much higher i.e. 34.

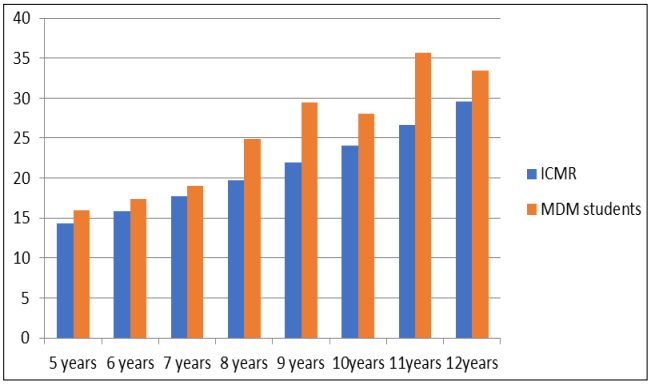

Fig 4: Comparison between mean value of ICMR standard weight and sample data of girls

The fig: 4 describes the difference between the ICMR standard weight mean value and mean value of respondents weight. The mean value of weight of 5 year old respondents is 16 which is higher than the standard value. The mean value of standard weight of 6 year old girl is 15.8, whereas the mean value of Respondents weight is 17.4. The mean value of 7 year old Respondents weight is higher than the standards i.e. 19 and 17.7. The mean value of standard weight of 8 year old girl is 19.7 and 24.9 of respondents, so the Respondents weight mean is greater than standards. The mean value of 9 year old respondent Girls weight is 29.5 and it is higher than 21.9 which is the mean value of standard weight. The mean value of standard weight of 10 year old girls is 24.1 and the mean of Respondents weight (28) is higher than the standards. The mean value of 11 year old Respondents weight (35.6) is also greater than standards (26.6).The mean value of 12 year old respondents is 33.5 whereas the standard weight mean is 29.6. According this data it is found that the weight of the respondent girls was more than the standard weight according to age group.

Table 3: Classification of children according to their BMI

Classification	BMI	NO. of children	Gender		Percentage
			Boys	Girls	
Underweight	<18.51	28	14	14	56%
Normal	18.50 – 24.99	22	12	10	44%
Overweight	>25.00 ->40.00	-	-	-	-
Total		50			

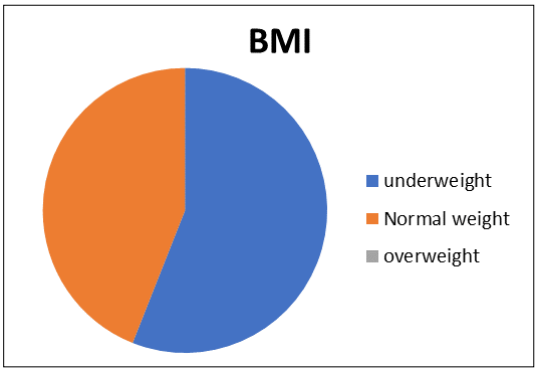

Fig 5: Distribution of children according to their BMI

Table.3 shows the categorization of children according to BMI. The data shows that 56% (28/50) of total children were underweight according to BMI, in which 56.52% (13/23) of total girls respondents were underweight and 55.55% (15/27)of total boys respondents were underweight. No one from the respondents was overweight. According to BMI, 44% of the total children were found normal weight, in which 43.47% (10/23) out of total respondent girls were normal weight, whereas 44.44% (12/27) from the total respondent boys were normal weight. 14 girls from total respondent girls had BMI $\leq$18.50 kg/mt^2 and categorize as underweight. As same as girls, 14 boys from the total respondent boys had BMI $\leq$18.50 kg/mt^2.

Conclusion

The study findings reported that the nutritional status of the selected children was not satisfactory. The stunting rate was found among both boys and girls of different age groups. The boys of 5,7 and 8 age group were stunted whereas the girls of 6,7,10 and 12 age groups were stunted means they had less height according to their age. All children except only 4% of total children, which were boys of 8 year age group had low weight according to their age. Total 56% of the children were underweight while rest of 44% were normal weight. In which 13 girls and 15 boys were underweight. As the findings shows the poor nutritional status of the children, there is need of further monitoring and evaluation of the scheme in schools. School age is the important period for growth and development. During this period children need good nutrition and healthy eating practices.

References

1. Shrilakshmi B. Dietitics, 7th edition, New age publication, New Delhi (India), 2018.
2. Mid-day meal scheme, Wikipedia.org, available at https://en.m.wikipedia.org/wiki/Midday_Meal_Scheme
3. Findings of research studies on mid-day meal, mdm.nic.in, available at http://mdm.nic.in/mdm_website/
4. Alim F *et al.*, September, Nutritional status of children attending mid-day meal scheme in government primary school in Aligarh city (Indian journal of community health), 2012.
5. National Nutrition Monitoring Bureau. Annual Report, National Institute of Nutrition Hyderabad, 1991.