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IMPACT OF MID-DAY MEAL SCHEME ON THE NUTRITIONAL STATUS OF PRIMARY SCHOOL CHILDREN IN KANPUR DISTRICT

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Abstract

Children are the most vulnerable group that suffers from malnutrition and nutritional deficiency. Under nutrition during any period of childhood, even for relatively short term episodes, can have negative effects on the cognitive development thus leads to poor school performance among children. The research question is- does the mid-day meal scheme have an impact on the nutritional status of school children (6-12 years) in Kanpur District? This was a cross-sectional study conducted at three government primary schools Mid Day Meal (MDM) in urban areas and three primary schools in rural areas in Kanpur district. Simple random sampling was used for selection of children. Study variables taken were height, weight and general physical examination. Results of the study indicated that the nutritional status of MDM children. The reason for poor result for schools providing Mid Day Meals could be irregular attendance of children in school, less amount of Mid Day Meal, poor quality of food items in Mid Day Meals, combined teaching of different standard, lack of class room etc. All these parameters need to be further studied and evaluated for these impacts on academic achievement.

Key words : Nutrition, Mid-Day Meal (MDM), Kanpur.

Introduction

The midday meal scheme is the largest school lunch programme in the nation. It has been reported that mid-day meal has catered to the nutritional needs of school children in both rural and urban areas (Mehta *et al*., 2013). Children contribute to the vital human potential and impart strength to the national economy and development. Nutrition is the most important basic need, being a major determinant of health, labour productivity and mental development. Better the nutritional status of the children, higher will be the nation's growth (Yadav and Kumar, 2012). Health and nutritional status of 6 to 12yrs children are very important because development in any country, 6-12 years age is a period of learning, maturation and physical developments (Kulshrestha and Sharma, 2011). Primary school age is a dynamic period of physical growth and mental development of the child. Research strongly suggests that health problem due to malnutrition among primary school (Cynthia, 2015). The main nutritional problems facing the school children include growth retardation, stunting, underweight, anemia and vitamin A deficiency. Apart for mid day meal programme which is being run by the government of India in government run schools, there are no other efforts for children in age group 5-14 years (Alim *et al*., 2012). Nutrition plays an important role in promotion of health and prevention of disease, food in the chief source of essential materials, which the body needs for its well-being. Good nutrition is a basic component of health. Nutritional support to primary education is considered as a means to achieve the objective of providing free and compulsory universal primary education of satisfactory quality to all the children below the age of 14 years by giving a boost to universalization of primary education through increased enrolment, improved school attendance and retention and promoting nutritional status of primary school children (Afridi and Farzana, 2007).

Malnutrition continues to be a primary cause of ill health and mortality among children in developing countries. It is a major public health problem and accounts for about half of all child deaths worldwide. Since, its establishment mid day meal has been providing meals to thousands of schools in almost every state of India and around 8.41 crore of children are covered under this scheme.

Materials and Methods

To assess the impact of program a set of three schools

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Table 1 : Comparison of mean height for MDM girl's urban and rural area with ICMR standards on the basis of age.

Age (Years)	ICMR Height standard (cm)	Urban area			Rural area		
		N	Girls Mean height (cm)	Difference value	N	Girls Mean height (cm)	Difference value
6	114.6	7	110.8	3.8	9	104.1	10.5
7	120.6	16	116.1	4.5	14	115.6	5.0
8	126.4	6	120.3	6.1	9	118.0	8.4
9	132.2	10	124.6	7.6	8	121.7	10.5
10	138.3	7	128.7	9.6	10	122.4	15.9
11	142.0	5	130.4	11.6	5	128.8	13.2
12	148.0	4	139.6	8.4	5	133.2	14.8
Total		55			60		

Table 2 : Comparison of mean height for MDM boy's urban and rural area with ICMR standards on the basis of age.

Age (Years)	ICMR Height standard (cm)	Urban area			Rural area		
		N	Boys Mean height (cm)	Difference value	N	Boys Mean height (cm)	Difference value
6	116.1	8	107.7	8.4	6	105.6	10.5
7	121.7	8	119.6	2.1	5	118.0	3.7
8	127.0	7	122.5	4.5	7	124.4	2.6
9	132.2	4	126.2	6	6	127.0	5.2
10	137.5	8	131.5	6	5	126.0	11.5
11	140.0	5	137.8	2.2	8	134.0	6
12	147.0	5	141.6	5.4	3	139.6	7.4
Total		45			40		

primary school in urban areas and three primary school in rural areas. The study was carried out among 200 primary school children belonging to the rural and urban areas were selected from Kanpur 200 sample respondents were selected through the purposive random sampling.

In every school, boys and girls were randomly selected from each class for anthropometry, clinical examination and academic achievement. The nutritional status of children was assessed by anthropometry (height and weight) and clinical examination.

Results

The objective was to determine the impact of mid day meal scheme on the nutritional status of primary school children (6-12 years) in Kanpur district.

Table 1 indicated that the distribution of height of girls indicated that the urban areas girls were found shorter than girls of ICMR standards by 3.8 cm to 11.6 across all ages. The maximum difference was found in age group of 11 years. In case of rural areas girls the difference ranges from 5.0 cm to 15.9 cm from 6 to 12 years. The maximum difference was found in age group of 10 years. Data indicated that the rural areas girls were also found shorter than ICMR standard at all ages.

Table 2 indicated that the distribution of height of boys indicated that the urban areas boys were found shorter than boys of ICMR standards by 2.1 cm to 8.4 across all ages. The maximum difference was found in age group of 6 years. In case of rural areas boys the difference ranges from 2.6 cm to 11.5 cm from 6 to 12 years. The maximum difference was found in age group of 10 years. Data indicated that the urban areas boys were also found shorter than ICMR standard at all ages.

Table 3 indicated that the weight of urban and rural girls increased with in age from 6 to 12 years. The weight in the age group 6 to 12 years ranged from 20.1 kg to 30.0 kg in urban girls. In rural areas, the weight in the

Table 3 : Comparison of mean weight for MDM girl's urban and rural area with ICMR standards on the basis of age.

Age (Years)	ICMR Weight standard (kg)	Urban area			Rural area		
		N	Girls Mean weight (kg)	Difference value	N	Girls Mean weight (kg)	Difference value
6	19.5	7	20.1	-0.6	9	17.5	2
7	21.8	16	20.6	1.2	14	18.7	3.1
8	24.8	6	24.0	0.8	9	22.8	2
9	28.5	10	27.3	1.2	8	23.3	5.2
10	32.5	7	28.6	3.9	10	22.2	10.3
11	33.7	5	29.6	4.1	5	27.6	6.1
12	38.7	4	30.0	8.7	5	28.1	10.6
Total		55			60		

Table 4 : Comparison of mean weight for MDM boy's urban and rural area with ICMR standards on the basis of age.

Age (Years)	ICMR Weight standard (kg)	Urban area			Rural area		
		N	Boys Mean weight (kg)	Difference value	N	Boys Mean weight (kg)	Difference value
6	20.7	8	20.0	0.7	6	18.0	2.7
7	22.9	8	26.2	-3.3	5	19.4	3.5
8	25.3	7	25.8	0.98	7	22.0	3.3
9	28.1	4	26.7	1.7	6	24.3	3.8
10	31.4	8	30.6	0.8	5	26.9	4.5
11	32.2	5	29.7	2.5	8	27.0	5.2
12	37.0	5	33.4	3.6	3	29.6	7.4
Total		45			40		

age group 6 to 12 years ranged from 17.5 kg to 28.1 kg in rural girls. In both urban and rural girls the weight was found lower than the ICMR standard across all ages.

Table 4 indicated that the weight of urban and rural boys increased with in age from 6 to 12 years. The weight in the age group 6 to 12 years ranged from 20.0 kg to 33.0 kg in urban boys. In rural areas, the weight in the age group 6 to 12 years ranged from 18.0 kg to 29.6 kg in rural boys. In both urban and rural boys the weight was found lower than the ICMR standard across all ages.

Discussion

The observations of the present study suggest that the distribution of height of girls indicated that the urban areas girls were found shorter than girls of ICMR standards by 3.8 cm to 11.6 across all ages. The maximum difference was found in age group of 11 years. In case of rural areas girls, the difference ranges from 5.0 cm to 15.9 cm from 6 to 12 years. The maximum difference was found in age group of 10 years. Data indicated that the rural areas girls were also found shorter than ICMR standard at all age. Distribution of height of boys indicated that the urban areas boys were found shorter than boys of ICMR standards by 2.1 cm to 8.4 across all ages. The maximum difference was found in age group of 6 years. In case of rural areas boys the difference ranges from 2.6 cm to 11.5 cm from 6 to 12 years. The maximum difference was found in age group of 10 years. The weight of urban and rural girls increased with in age from 6 to 12 years. The weight in the age group 6 to 12 years ranged from 20.1 kg to 30.0 kg in urban girls. In rural areas, the weight ranged from 17.5 kg to 28.1 kg in rural girls. The weight of urban and rural boys increased with in age from 6 to 12 years. The weight in the age group 6 to 12 years ranged from 20.0 kg to 33.0 kg in urban boys. In rural areas, the weight ranged from 18.0 kg to 29.6 kg in rural boys. In both urban and rural boys and girls, the weight was found lower than the ICMR standard across

all ages.

Alim *et al*. (2012) reported that the girls of MDM schools were shorter than the ICMR well to do Indian girls at all ages except at age of 6 and 12 years (higher by 1.7cm and 1.6 cm, respectively) the maximum difference was found in age group of 9 years. Results on the height of boys indicated that the MDM boys were found shorter than boys of ICMR standard by 0.1 cm to 8.7 cm across all ages. The maximum difference was found in age group of 12 years.

Conclusion

Statistically the mean height and weight of MDM school girls and boys in the present study are lower than that of ICMR (2010) standards.

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