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Mid-day meal scheme and nutritional status of school children

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Abstract

Mid-day meal scheme is one of the important policies and the main purpose of it is to lower the cost of schooling and also to improve the nutritional level of children. School going children are vulnerable to malnutrition and nutritional deficiencies having a negative effect on the growth and development of children.

Keywords: Adolescent, rural, urban, habits, attitudes, education

Introduction

According to the constitution of India, all the children have the right to get primary education. Although it is not hundred percent successes, it has shown up a constant tremendous developing. Hence Government has put forward an amendment to enroll the maximum number of students from the age group of 6 -12 years for free education. The Mid Day Meal Scheme is a multi-purpose programme of the Government of India that, to address issues of food security, lack of nutrition and access to education. This Scheme was launched in the year 1995 August 15th in nationwide by the Department of Elementary Education and Literacy, Ministry of Human Resources Development, Government of India. In the year 2002, this scheme was extended to cover the children studying in Education Guarantee Scheme (EGS) and Alternative Informal Education (AIE). In September 2002, an attempt was made to revise the mid-day meal scheme providing 300 kilocalories and 8-12 grams of protein respectively to all students of class I-V both government and government-aided schools. With all that fruitful results, Scheme was extended to the upper primary classes (VI to VII) in the year October 2007. It provides free lunch on working days both for Primary and Upper Primary classes. This scheme is the largest school lunch programme in India with an eloquent objective to provide the nutritional support for school children in both rural and urban areas. Primary school age is a dynamic period of physical growth and mental development of the children. Children contribute to the vital human potential and they are the strength to the nation's economy and development. During this period, very importantly the need for nutrition is mandatory as it is a determinant of health, labor productivity and mental development. Their Nutritional status and Health are monitored for the betterment of learning, maturation and also physical developments. Physical growth of children is reflected by their anthropometric measurements especially weight and height. On the other hand, child height and weight is the efficient tool for recognition of their nutritional status.

Study on the nutritional status of underprivileged MDMP beneficiaries. It was found that the 'stunted' and 'wasted' affected more between 6 to 12 years old children where anemia was present girls were classed as "active cases of xerophthalmia (Night blindness with conjunctival lesions)". Parasitic infestation was detected in 44% boys and 35% girls. Out of the total school enrolled children only 12% consumed mid-day meal on site, the rest shared it with siblings. Thus they concluded that the beneficiaries of MDMP have a poorer nutritional status. The implementer was commissioner of Mid-Day Meal Program, Government of Gujarat and the program involved nearly 3 million school children prior to improved Mid-Day Meal Program (MDMP). It was found that the prevailing nutritional health problems of deprived school children included raw hunger, unsafe water, intestinal worms, and malaria. Iron Deficiency Anemia (IDA), vitamin A Deficiency (VAD) and Iodine Deficiency Disorder (IDD).

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The older boys and girls (11 to 15 years) were found to more under nourish than younger children. Impediments to active learning were impaired cognition and physical work capacity, night blindness and impaired vision, absenteeism due to illness, tiredness and irritability. After the improved MDMP that consisted of deworming and vitamin A dosing twice a school year ferrous sulphate (60 mg elemental iron tablets) 2 times per week in the classroom and iodized salts in cooked meals. It was found that the dosed vs. undoes school children was 1.1 kg heavier and 1.1 cm taller; haemoglobin level were >12 g/dl; intestinal parasitic infection prevalence rates dropped from 71 to 39%; prevalence of night blindness and vitamin A deficiency fell from 67 to 34%. Thus, it was concluded that the improved MDMP had a positive impact on nutritional status of school children and if it continued the nutrition health problem in these children may reduce.

The impact of school feeding program on nutritional outcomes is very thin. The school feeding does indeed improve the immediate nutritional intake of children and school participation rates, the effect of these program on learning cognitive skills and on longer term nutritional status, is not clear. The effect on long term nutrition is even more of a mystery. Supports a relationship between regular school feeding consumption and nutritional adequacy with having a significantly healthier nutritional profile than non-recipients.

Methodology

The present study was an intensive research to assess the impact of mid-day meal on nutritional status and academic achievement of school children. It also examined the magnitude of nutritional diseases prevailing among both school children aged 6 to 12 years. In order to get a realistic picture, the technique adopted for obtaining data and information was intensive and time consuming. Multiple options were exercised to collect the required details from the subjects. It includes an oral questionnaire that comprised of an interview-cum physical examination, anthropometric measurements, clinical observation and academic achievement result cards.

Study Area: The study was carried out in Government higher primary school of Jalalpur Block.

Collection of Data: Once subjects were selected, their demographic data were collected using structured Questionnaire. A pre-tested questionnaire was given which include age, gender, height, weight, food preferences were elicited. The height of the subjects was measured using height

measuring scale. Then the weight of the individual was measured using a weighing machine. Recorded height and weight was compared with Standard values. Standard height and weight for boys and girls are represented in the tabular form:

Table 1: Standard Height and Weight for Boys

Age (years)	Boys		Girls	
	Weight (kg)	Height (cm)	Weight (kg)	Height (cm)
6	20	116	19	114
7	23	121	21	120
8	25	127	24	126
9	28	132	28	132
10	31	137	32	138
11	32	140	33	142
12	37	147	38	148

During the collection of diet history, it was mandatory to understand the inclusion of food Stuff contributing the nutrients in mid-day meal; so that to analyze the essential nutrients required for the normal growth and development.

Table 2: Quantity of the Food Items Used in the Midday Meal

Item	Primary	Upper Primary
Rice	100gms	150gms
Pulses	20gms	30 gms
Vegetables	50gms	75gms
Oil	5gms	7.5 gms
Salt	2gms	2.5 gms
Micronutrients	Adequate other micronutrients like Micro-nutrientskon, Folic acid, Vitamin A etc.	

Results and Discussion

The oral questionnaire consisted of the questions related to food frequency, likes and dislikes of foods, amount of water consumed in a day, the taste of mid-day meal, quality and quantity of midday meal, variety and over all acceptance of midday meal. Once complete data is obtained then it was statistically analyzed with the help of percentage, mean and standard deviation, analysis and t-test.

Table 3 presents the mean height of the selected subjects. As per the standard heights are concerned the mean height of the study population was found to be very low, it is due to the fact that as it is growing period and in turn required intake may not be able to meet the requirement. But as they enter into the early adolescent (above 10 years), there was an appreciable increase in the height to the standard value.

Table 3: Mean Height of Selected Subjects

Age in Years	No. of Children	Boys			Girls			
		Height (cm)	Mean Height & S. D \pm	p Value	No. of Children	Height (cm)	Mean Height & S. D \pm	p Value
6	2	116	113 \pm 1.41	0.024	5	114	112.6 \pm 2.19	0.374
7	3	121	114 \pm 2.64	0.423	4	120	112.25 \pm 0.95	NS
8	5	127	116.6 \pm 3.36	0.587	2	126	117 \pm 5.65	0.205
9	3	132	121 \pm 4.35	0.289	4	132	119.25 \pm 4.19	0.133
10	9	137	126 \pm 6.13	0.026	1	138	1120	NS
11	2	140	136 \pm 6.36	NS	2	142	129.5 \pm 0.707	0.126
12	5	147	141.8 \pm 8.78	0.426	11	148	136.2 \pm 6.21	0.007

NS-Non significant; 0.00 highly significant

A perusable of table- 4 shows the mean weight of the selected subjects. Once again the mean weight was found to be comfortably low to the standard. As per the statistical

Analysis, my observation strategy as got the association with statistical analyzes that are boys have attained their growth in early adolescents compared to their low counterparts.

Table 4: Mean Weight of Selected Subjects

Age in years	Boys				Girls			
	No. of children	Weight (kg)	Mean weight S. D±	p value	No. of children	Weight(kg)	Mean weight S. D±	p value
6	2	20	17±1.41	0.5	5	19	16.8±3.193	0.089
7	3	23	17.33± 3.21	0.118	4	21	16.75 ±1.258	0.0215
8	5	25	20.6 ±3.28	0.099	2	24	17.5±2.12	0.5
9	3	28	23.7 ±4.16	0.691	4	28	23.25 ±2.98	0.342
10	9	31	25.2 ±2.77	0.753	1	32	24 0	NS
11	2	32	29 ±1.413	0.05	2	33	25 ±1.41	0.565
12	5	37	31.2±6.14	0.028	11	38	31.3 ±4.73	0.05

The perusal of table 5 gives the details of calorie and Protein gained from midday meal programme for the study

population. It is well distributed as per the growth stage of the subjects.

Table 5: Contribution of Calorie and Protein from Midday Meal

Food Stuffs	Lower Primary		Higher Primary	
	Calorie(kcal)	Protein(g)	Calorie (kcal) 517.5	Protein (g) 10
Rice	345	6.8	517.5	10
Dhal	65	5	81.25	7.5
DF Salt	27	0	54	0
Oil	54	0	54	0
Vegetables	54	2	75.6	3
Total	491	13.8	728.35	20.5

Conclusion

Nutrition Support to Primary Education popularly referred to as mid-Day Meal programme (MDM) is considered as a means of promoting improved enrolment, school attendance, and retention. MDM was providing for each school child roughly one-third of the daily nutrient requirement in the form of a hot cooked meal. It was better for some children from poor households; the school meal may become a substitute rather than a supplement for the home meal. It was important to note that it was not merely the long-term effects of the school meal on the nutritional status but its Short-Term Effects on better attention, memory and learning capacity. A hungry child is a poor learner and lack of concentration. A midday meal was an important instrument for combating classroom hunger and promoting better learning. Many children reach school with an empty stomach in the morning. Children from all castes and communities eating together, was also an instrument to bring better social integration.

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