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## “A Study on Effect of Mid-Day-Meal Programme on The Nutritional Status of Lower Primary School Students of Balangir District”

**Sashirekha Sahoo**

Integrated B.ed- M.ed Final Year Student  
Department of Teacher Education,  
Rajendra University  
Balangir, Odisha, India

**Dipak Kumar Panda**

Assistance professor (physics)  
Department of Teacher Education,  
DPIASE, Berhampur, Ganjam, Odisha,  
India

### ABSTRACT:

*Mid-Day-Meal (MDM) is popular school lunch or school meal programme. This programme is also known as “noon meal programme”.As the name indicates, students attending elementary stage of schools are the chief beneficiary. Supply of one supplementary meal is the main purpose of this programme.The reason of introducing the Mid-Day-Meal (MDM) scheme was started to supplement the nutritional inadequacy of home diets of the students taken at their home. In this research sample, survey method is selected. The researcher selected five lower primary schools in Balangir Block and approximately 60 students from class I to class V were chosen as sample for the present study. After analyzing all the data, conclusion was drawn. Mid-Day-Meal (MDM) 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 students.*

**KEYWORDS:** *Mid Day Meal Programme, Nutritional Status and Primary School Students*

## INTRODUCTION

“Education is the manifestation of perfection already in man”

**--Swami Vivekananda**

Education forms the foundation for the sound human capital of a country which ultimately leads to a prospective nation building. Primary education is the basis for all the higher education on which the super structure of economic development of a country stands. But the precarious condition of the primary school needs to be addressed hence attention has been focused on the educational environment and student enrolment in the primary school which mostly depends on along with other aspects on the different provision like MDM, dress and book supply etc. in the school by the Govt. Mid Day Meal Scheme seeks to provide for each school child roughly a third of the daily nutrient requirement in the form of a hot fresh cooked meal. It is an important instrument for combating classroom hunger and promoting better learning. Mid day meal could thus be a means for not only promoting school enrolment but also better learning in school. The purpose of Sarva Shiksha Abhiyan (SSA) will thus be very well served by mid day meal. Most importantly mid day meal could trigger all round development of the entire school system leading to better infrastructures in schools, better teaching facilities, a school health service and community involvement.

Nutrition may be defined as the science of food and its relationship to health. Nutrition is the science that deals with digestion, absorption and metabolism of food, i.e. the utilization of food in the body. It includes the uptake of food, liberation of energy, elimination of wastes and all the processes of synthesis essential for maintenance, growth and reproduction (Pike and Brown, 1984). Nutrients are organic and inorganic complexes contained in food. These are the constituents in food that must be supplied to the body in suitable amounts. These are proteins, carbohydrates, fats, minerals, vitamins, water and roughage. Nutritional status is the balance between the intake of nutrients by an organism and the expenditure of these in the processes of growth, reproduction and health maintenance. Nutrition status is the condition (state) of health of an individual as influenced by the utilization of nutrients in his body. It can be defined as the level of nourishment in an individual (Sunita and Jain, 2005) height, weight, height-for-age, BMI for-age. The nutritional status of an individual is often the result of many interrelated factors. It is influenced by the adequacy of food intake both in terms of quantity and quality and also by the physical health of the individual. The two major determinants of growth performance of individual and population are

(1) Their inherited genetic potential for growth, and

(2) The availability of those inputs, which are essential for the given genetic potential to find full expression.

Although nutritional status of a nation is closely related to food adequacy, but even more importantly interrelated to its inter and intra household distribution, level of poverty, status of women, access of people to health, education, drinking water, hygiene, sanitation, awareness and other social services. It was observed that the nutritional status of students is influenced by a number of developmental efforts. Primary school students from about 20% of the total population. Free and compulsory education up to the age of 14 years is the constitutional commitment. It is estimated that about 40% of children dropout of primary school. Nutrition 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 students below the age of 14 years by giving a boost to universalisation of primary education through increased enrolment, improved school attendance and retention and promoting nutritional status of primary school simultaneously with students from all castes and communities eating together, it is also a means of bringing about better social integration. The National Program of Mid Day Meal in schools, the largest school feeding program in the world, cover nearly 9.70 crore students studying at the primary stage of education in class I-V in 9.50 lakhs government (including local body) and government aided schools and the centers run under Education Guarantee Scheme (EGS).

### **SUMMARY OF REVIEW OF RELATED LITERATURE**

Soumya (2020) In their study revealed that many school going children are getting benefit from Mid-Day-Meal (MDM) scheme with proper nutritious food. Singh and Aggarwal (2020) In their study found that Mid-Day-Meal (MDM) was not consumed by all the children thereby decreasing the contribution of Mid-Day-Meal further. Alisha and Alka (2018) were finding the study reveals that nutritional status of Mid-Day-Meal. Beneficiaries both boys and girls were lower than the ICMR RDA (2010) because of poor economic condition. The nutrient content of Mid-Day Meal provided by the government schools were found is higher in macro-nutrients like energy, protein, fat, carbohydrates and calcium. Sachan and Singh (2016) were finding the study revealed that the mean height and weight of MDM school girls and boys are lower than that of ICMR (2010) standards. Alim, et.al (2012) In their study reveals that nutritional status of the MDM school children under study was found to be lower than NMDM school children.

## NEED OF THE STUDY

The National Program of Mid Day Meal in schools is the largest school feeding program in the world. The purpose of providing mid day meal in government primary schools is not only to improve nutritional status of children but also attract more poor children to school and sustain their interest in learning so that these children could spend their life comfortably. The present study is therefore an attempt to know whether the mid day meal program is fulfilling its objective of eradicating nutritional deficiency and to enhance the nutritional status and academic achievement of school children by providing them minimum calorie requirements and adequate nutrients. This study will be helpful in improvising the quality and quantity of mid day meal and also will provide some suggestions for the proper organization, implementation and distribution of the meal at each mid day meal centre. This study is reflecting the prevailing situation of mid day meal and its effect in Balangir district. On the basis of these findings changes could be made to make the program more effective keeping in mind the needs of students and teachers in these schools.

## OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

1. To study the effect of Mid-Day-Meal on the nutritional status of lower primary school student.
2. To study the quantity of Mid-Day-Meal (MDM) provided in each student.
3. To study the quality of Mid-Day-Meal (MDM) in terms of energy and protein content.

## RESEARCH QUESTION

1. Whether nutritional status of lower primary school students has increased due to MDM?
2. Whether quantity of foods served under MDM is compliance to prescribed standard of MDM guidelines?
3. Whether the quality of MDM in terms of energy and protein content is good?

## DELIMITATIONS OF THE STUDY

- a. The present study will be delimited to urban lower primary schools of Balangir district.
- b. The study will be restricted to class I to class V only.
- c. The study will be limited to only five primary schools of Balangir block.

## METHODOLOGY

### Research Design

The present research study used descriptive survey method to carried out the research. As per the information obtained from Balangir District, Five government lower primary schools were selected randomly which are situated at Urban area of Balangir District. Each school was formally contacted for seeking necessary permission from school authorities like headmaster. Based on the consent and active cooperation of the school authorities, five schools where Mid-Day-Meal (MDM) has been provided regularly.

### Population and Sample Size

The population of this research is the lower primary school students in Balangir District. From the class I to class V in all the selected schools were included as population of the study. Purposive Sampling will be taken while selecting the schools. 60 students are selected for study .Out of 60 students 30 students boys and 30 students girls.

**Table 3.1 sample size**

Age in years	No. of Students	
	Boys	Girls
6	8	8
7	6	5
8	6	5
9	5	5
10	5	7

### TOOLS USED FOR DATA COLLECTION

This study used a questionnaire method research to generate data from the primary source which is the students who studied in class I to class V. Thus, the study was designed as questionnaire research. The researcher will personally visit to collect data from the selected lower primary school students of Balangir District. The researcher will be use the Nutritional Status Scale (NSS) of primary school students developed by Ms.Irmeen Mirza (2012).

### ANALYSIS & INTERPRETATION

Analysis and interpretation is the essential part of any research work. It is totally dependent on presentation of data and their proper analysis. The present study was carried out in balangir district selecting five different lower primary schools (where Mid-Day-Meal was provided every day) of urban

areas of balangir district. A total sample of 60 from MDM school (30 boys and 30 girls) from these school. The results of the present investigation have been discussed under the following points.

1. The first objective of the study aims at determining the level of nutritional status of lower primary school students. This question is dealing with comparison of the mean scores on their nutritional status of primary school students. Hence the technique of percentage of analysis followed by bar diagram, pie-chart was used.
2. The 2<sup>nd</sup>, 3<sup>rd</sup> objectives are calculating the quality and quantity of Mid-Day-Meal .Hence the technique of percentage analysis followed by bar diagram was used in this case.

**Table-4.1: Adequacy of MDM**

Adequacy of MDM	No. of Students
Always	50
Sometimes	7
Never	3

The above table indicates that the MDM provided to school children is almost sufficient for their full stomach 85% of the surveyed respondents the quite happy with the food to meet their requirement 12% of the respondents opines that adequacy of the food is sometimes. But remarkably 3% complains the inadequacy of the food quantity. This point is to be viewed seriously.

**Table-4.2: No. of Students belonging to different religious group**

Religious	No. of Students
Hindu	25
Muslim	35
Other	0

The above table indicates that the different community inhabits in the survey area and it is clear that the area is marginally Muslim dominated constituting 58% of Muslim children and 42% Hindu children peruse their primary education in the district. This shows that irrespective of religion children of both Hindu and Muslim community shaw their MDM in their school reflecting a good sign of communal harmony in the area.

**Table-4.3: Education of Parents**

Education of Parents	No. of Students
Illiterate	0
Up to Primary	0
Up to middle	20
High school	30
Intermediate	10

The above table shows that 33% of parents have attended up to middle school, 50% have achieved high school standard and rest 17% are of intermediate standard. This is a good symbol of literacy level of this parents of children enrolled in primary school .

### Anthropometric Assessment

Assessment of anthropometric measurements includes Height, Weight and mid-upper arm circumference. Then mean values are compared with ICMR standards.

### Height and Weight

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.

**Table- 4.4: ICMR Standard Height and Weight for Boys and Girls**

Age(years)	Boys		Girls	
	Weight(k.g)	Height(c.m)	Weight (k.g)	Height (c.m)
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

**Table-4.5: Mean height of selected subjects**

Boys				Girls			
Age in years	No. of students	Max. Height (c.m)	Mean Height & S.D	No. of students	Max. Height (c.m)	Mean Height & S.D	
6	8	116	114±1.5	8	114	113±1.34	
7	6	127	125±1.5	5	126	125±0.77	
8	6	121	118±3.1	5	120	117±1.7	
9	5	132	129±4	5	132	131±0.89	
10	5	140	139±1.4	7	138	137±0.83	

Table-4.5 presents the mean height of the selected subjects. As per the standard heights are concerned the mean height of the study population was found 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 above age, there was an appreciable increase in the height to the standard value.

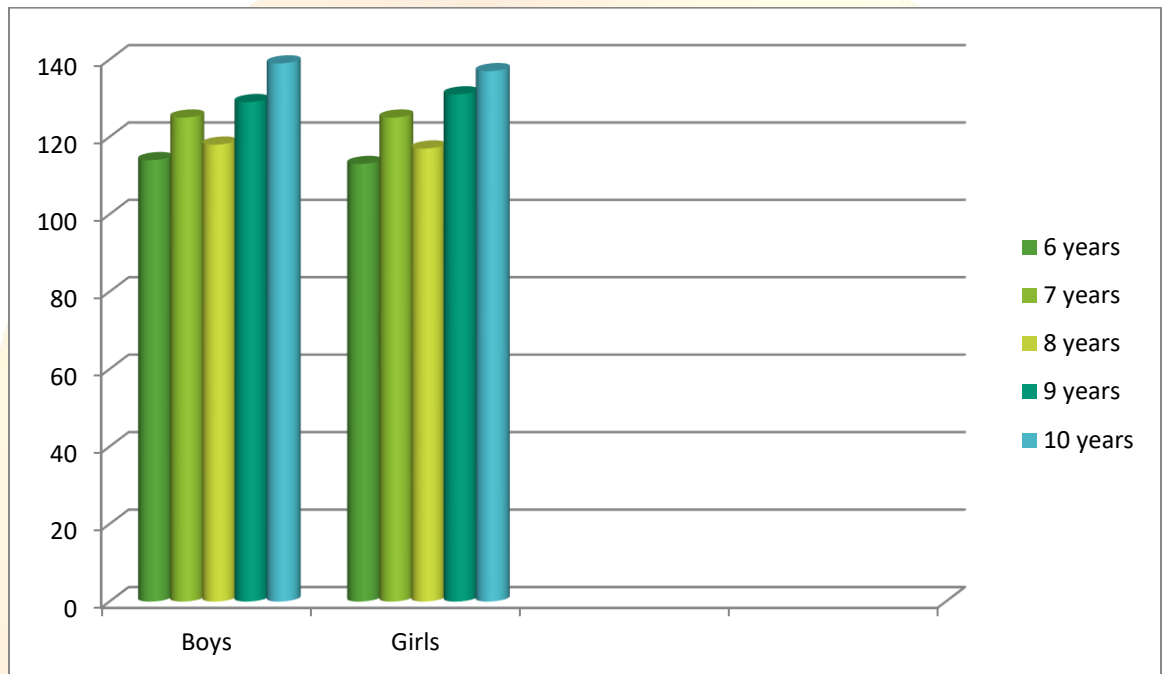


Figure 4.5 graphical representations to mean of height of boys and girls age according to years wise.

Table-4.6: Mean weight of selected subjects

Age in years	Boys			Girls		
	No. of students	Max. weight(k.g)	Mean weight & S.D	No. of students	Max. weight(k.g)	Mean weight & S.D
6	8	20	18±1.3	8	19	19±1.3
7	6	23	22±1.2	5	21	20±1.9
8	6	25	23±1.2	5	24	22±1.4
9	5	28	27±0.77	5	28	27±1.8
10	5	31	30±1.09	7	32	32±0.8

Table-4.6 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, the investigator strategy as got the



association with statistical analyzes that are boys have attained their growth in later childhood compared to their low counterparts. This has been depicted in the following graph.

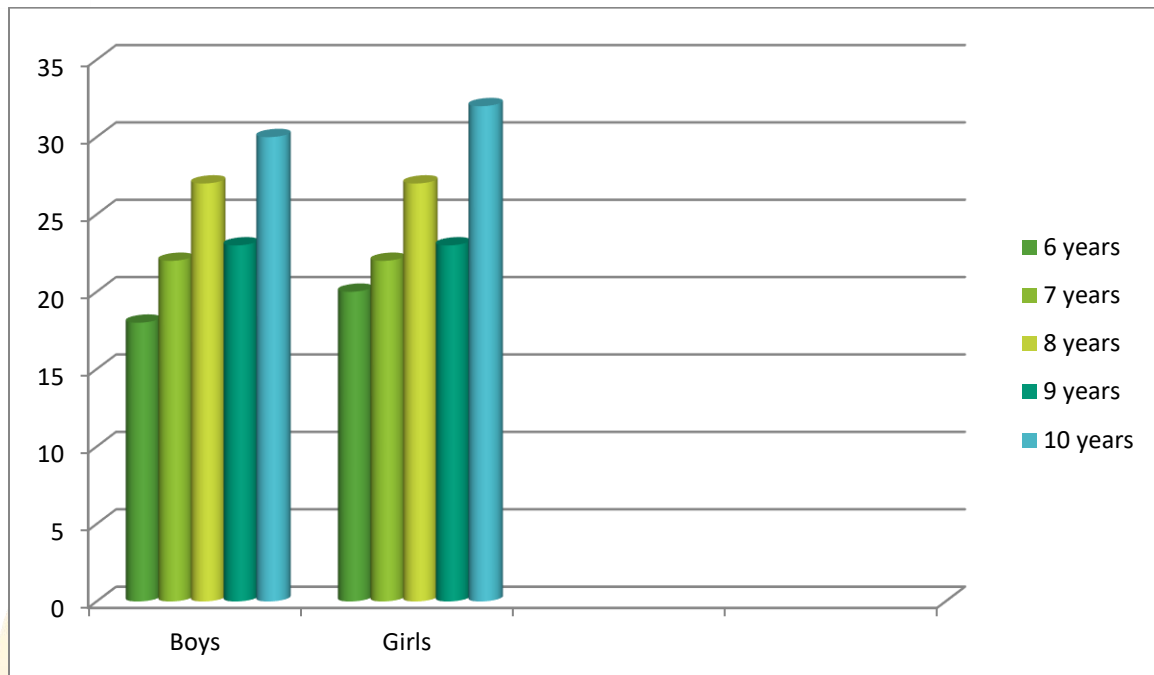


Figure 4.6 graphical representations to mean of weight (k.g) of boys and girls age according to years wise.

### Mid-Upper Arm Circumference

Mid –upper arm circumference of the individual was measured using tape and compared with standard mid-upper arm circumference value according to age.

**Table-4.7: Standard Mid Upper Arm Circumference (MUAC) of the selected subjects with percentage**

MUAC Range	Malnutrition Status	Number of Children (%)
<11.0 c.m	Severe malnutrition	1(2%)
11.0c.m to 12.5 c.m	Moderate malnutrition	1(2%)
12.5 c.m to 13.5 c.m	Acute malnutrition	3(4%)
>13.5 c.m	Well nourished	55(92%)

Table-4.7 Shows that about 92% of the study populations are well nourished. This has been shown in the following pie-chart.

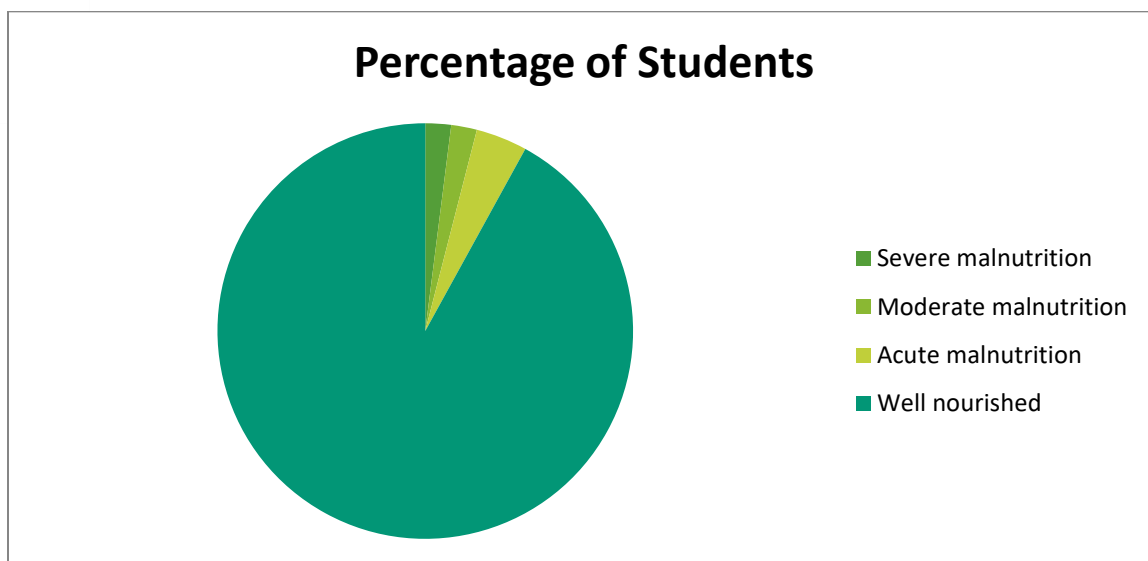


Figure 4.7 graphical representations to percentage of children having malnutrition status.

**Table-4.8: Quantity of Mid- Day- Meal (MDM) provided in each student per day**

Food items	Quantity in gms	Energy(kcal)	Protein(gm)
Rice	100 gms	345 calories	2 gm
Dal	20 gms	35 calories	13 gm
Vegetables	50 gms	54 calories	5 gm
Oil	5 gms	54 calories	0
Salt	2 gms	27 calories	0

Table-4.8 shows that the quantity of Rice, Dal, Vegetables, Oil and Salt etc. is quite adequate as per prescribed guideline and recommendations of the govt. The important thing to be mentioned is that with the upswing market price of different commodities, sometimes it stands as a constrained to follow the normal food quantity as per Govt. guide lines. But in an average, the quantity of various items in MDM is quite adequate. This has been reflected through the following graph.

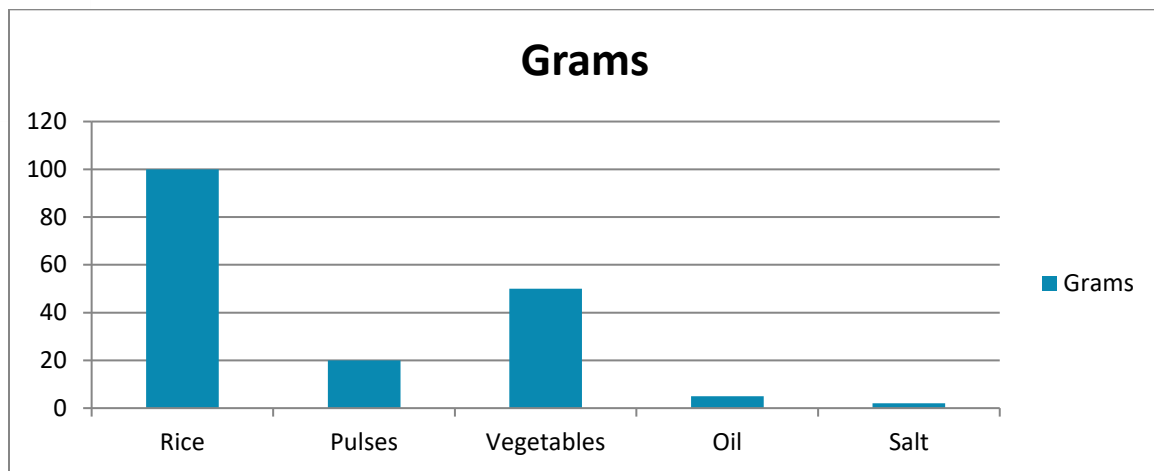


Figure-4.8: graphical representation to Quantity of the food items used in the Mid-Day-Meal.

Table-4.9: Quality of MDM Provided by the Sample Primary Schools

Items	Quality of MDM		
	Good	Average	Poor
Rice	5	0	0
Dal	4	1	0
Vegetable	3	2	0
egg	5	0	0

The above table shows that 100% respondents opined about good quality rice, 80% students viewed about good quality of dal only, 20% are not satisfied with standard of dal quality. Similarly all students are quite happy with egg, But the vegetables quality seems to be not as good as it is demised. Here 60% students are satisfied with vegetables and rests 40% are dissatisfied. So this issue may be addressed sincerely. But the overall quality of Mid –Day-Meal is good.

## FINDINGS OF THE STUDY

From the above analysis and interpretation of the data, the findings can be comprehended as follows:

- The study revealed that effect of mid day meals on nutritional status of school students has significant difference.
- According to the finding of the study 1 student is moderate malnutrition, 03 students are acute malnutrition, and 55 students are well nourished.

- The present study found that the mean height and weight of school students were considerably lower than the ICMR standards but mid-upper circumference value found to be similar to that of standards, irrespective of consuming regularly the mid-day meal provided at their institution. From the diet recall method, it was understood that mean micronutrient intake was unsoundly lower than the standard recommendations.
- Mid-Day-Meal(MDM) programme has a very a good effect on the nutritional status of the subjects but requires a better modulation in providing the variety of the foods with required essential nutrients proportion for the sustainability of health during the growth period of the school students.

## **EDUCATIONAL IMPLICATION**

National Programme of Nutritional Support to Primary Education (Mid Day Meal Scheme) is a noble scheme and operating in all over the country in the government and government aided primary schools. It has several implications to the field of education. Some of the important educational implications are given below.

- As reflected in this study all possible arrangements in terms of human and material resource should be made prior to the launching of the programme otherwise, it can adversely, affect teaching-activities in the schools. In all the sampled government primary schools there was no provision of separate kitchen-cum-store, only temporary arrangement were there for storage of food ingredients in these schools .
- The Ministry of Human Resource Development, Government of India and State Government of Balangir should ensure that adequate infrastructure viz. provisions of separate kitchen cum store having appropriate distance from classrooms, kitchen devices, facility of drinking water and separate toilet facilities for boys and girls are available in all government primary schools. It should put in place a system to ensure that the teaching time of the teachers is not lost in connection with the Mid Day Meal Scheme and there is no adverse impact of the scheme on the primary objective of education.
- It has been stated clearly in the guidelines for Mid Day Meal Scheme that this programme is meant to boost children's participation and learning at the primary school stage and not to interfere with it.

- There was a qualitative shift in the focus of the Scheme in September 2006 from education to nutrition and health. The government of Balangir needs to establish a system to ascertain the improvement in nutritional levels of the children.
- The data on enrolment, attendance and retention flows from the school level to state level in a transparent manner with records of compilation maintained at each level i.e. school level, district level ,state level.

## CONCLUSION

The present study concluded that the nutritional status of lower primary school students was low mainly because of the economic status and other demographic aspects like the occupation of the father, education of parents and hereditary history. But Mid-Day-Meal (MDM) provides sufficient nutrients and about one-third of the total recommended calories and meets the nutritional requirement during the lunch time. The attendance rate of students was extremely high and it is strongly associated with Mid-Day-Meal (MDM). As per my opinion, there is a need for nutritional education to growing students and their mothers. So that they can inculcate the use of commonly and easily available low cost food which invariably spikes the nutrient composition of the prepared meal. The student requires a better modulation in providing the variety of the foods with required essential nutrients proportion for the sustainability of health. Hence their growth and development can be sufficiently met.

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