

An Investigation into the Problems of Hygienic Condition of Mid Day Meal Centers

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Abstract

“Well begun is half done” is a well known maxim. The entire superstructure of educational set up the country rests on Primary Education. In order to help the poor parents to send their children to school, government of India lunched MDM programme in all the primary and elementary schools throughout the country. In spite of various measures undertaken by the State Government as well as Central Government for promoting Universalisation of Primary Education, it has not reached to its optimum point.

KEYWORDS: Hygienic Condition, MID day meal Centers. Odisha, India

INTRODUCTION

“Well begun is half done” is a well known maxim. The entire superstructure of the educational setup of the country rests on primary education. The progress of primary education is an index of the general, social and economic progress of the country as a whole. In fact if the child is well looked after at the primary stage, the stage of the secondary education automatically takes care of it. Thus rightly organized primary education is the one form where an attack should be launched to solve the issues of the country.

Primary education constitutes a very important part of the entire structures of education. It is at this stage that the child starts going to a formal institution and formal education starts. The education which he receives there, provides the foundation of his physical, mental, emotional, intellectual and social development sound primary education gives a fill up to sound secondary and higher education.

Primary education deserves the highest priority not only on grounds of social justice and democracy but also for raising the competence of the average works and for increasing national productivity. Apart from being a constitutional obligation the provision of universal primary education is crucial for spreading mass illiteracy which is basic requirement for economic development, modernization of the social structure and the effective functioning of democratic institution. It also represents an indispensable first step towards the provision of equality of opportunity to all its citizen.

The provision of universal elementary education has always been conceived as an integral part of the national system of education in India. Article 45 of the Indian constitution provides the state shall endeavour to provide free and compulsory education to all children up to the age of 14 years by 1960. Determined efforts have been made since independence towards achievements of this goal. We have undoubtedly made phenomenal progress in this sphere in the post independence

era. But much in lift to be done. Nearly 62 years have already been passed and despite our most serious efforts and endeavors the constitutional, Directives remain a distant dream to be realized.

No school in the world can attract a child with an empty stomach. Over the years, our educational planners and administrators have missed this crucial point while announcing time-bound schemes to eradicate illiteracy. The latest project the Sarva Siksha Abhiyan (education to all) seeks to ensure that every child in the 6 to 14 age group is either in a school, education guarantee centre or a ‘back to school camp’ by 2003. From recent experience, it is obvious that the scheme can survive and succeed. Only if it acknowledges and gives due weight to the inextricable link between pangs of hunger and a desire to learn. The mid day meal scheme has managed to arrest dropout and attract new kids to school. That mid day meal improves the participation of children in schools and that it improves the nutritional standards and health of the children.

REVIEW OF RELATED LITERATURE

Any study in any field requires a basic knowledge. Basic Knowledge serves as the foundation of the study and such knowledge is gathered from books and journal dealing with the problems of the study.

The survey of related literature is an essential aspect of a research report. It involves synthetic and synoptic understanding conducted in the field over a period of time. It helps the investigator to have a clear idea of general trends and objects of the study in all aspects and implication.

As remarked by *Walter* (1963) “The review of the related literature in educational research provides one with means of getting to frontier in a particular field of knowledge.”

Careful review of research books, journal dissertation, thesis and other sources of information on the problem to be investigated is one of the important steps in the planning of the research study. The review of related Literature involves locating, realizing and evaluating reports of research as well as reports of causal observation. And opinion that are related Literature forms the foundation upon which all work can be built. Thus according to Barr and Scates “The competent physician must keep abreast of the last discoveries in the field of medicine.” Obviously the careful students of education. The research worker and the investigator should become familiar with the location and use of sources of educational information.”

John W. Best :

“Practically all human knowledge can be found in books and libraries. Unlike other animals that must start a new with each generation, man builds upon the accumulated and recorded knowledge of past. His constant adding to the vast store of knowledge makes possible progress in all areas of human endeavour.

2.1 NEED AND IMPORTANCE OF REVIEW OF RELATED LITERATURE

Review of related literature is as important as other component of the research process. The task of related literature is highly creative and tedious because the researcher has to synthesis the available knowledge of the field in unique way to provide the rational of the study.

In the words of **Borg & Goll**, the review of related Literature is an important part of scientific approach and is carried out in all areas of scientific research whether in the physical, natural or social sciences. Such reviews are also the basis of most research in the humanities.

The review of Literature is essential due to the following reason.

1. One of the early steps in planning a research work is to review research done previously in the particular area of interest and relevant area qualitative and qualitative analysis of the research usually gives the worker an indication of the direction.
2. It is very essential for every investigator to be upto date in his information about the literature, related to his own problem already done by other. It is considered the most important pre-requisite to actual planning and conducting the study.
3. It avoids the replication of the study of findings to take an advantage from similar or related Literature as regards to methodology, techniques of data collection, procedure adopted and conclusion drawn. He can justify his own endeavour in the field.
4. It provides as source of problem of study an analog may be drawn for identifying and selecting his own problem of research. The researcher formulates his hypothesis on the basis of review of Literature. It also provides the rationale for the study. The results and finding of the study can also be discussed at length.

CARE India (1977) had studied the school feeding programme of Karnataka.

The specific objectives of the study were -

- (i) To determine the differences in enrolment attendance and attendance versus enrollment between participating and non-participating schools in the mid day meal programme.
- (ii) To assess the role of actual efficiency or regulatory of food distribution in the school in relation to attendance.

Major findings of the study were -

1. Difference between the number of children enrolled in MDM and non-MDM schools was statistically significant at 0.05 level.
2. Difference between mean attendance figure from MDM and non-MDM schools was significant.

3. Mean percentage of attendance against average enrollment was significantly higher in the MDM schools.

DEVI (1983) studied the problem of dropouts in primary schools of Manipur with special reference to Imphal city .

The specific objectives of the study were -

1. To ascertain accurately the extent and nature of dropout in the primary course of education in Manipur.
2. To ascertain the incidence of dropout of the primary stage of education of Imphal City of Manipur.
3. To study the variation in the magnitude of the problem under various situations.

Some of the major conclusions were -

There was no uniformity in the rate of dropout for the whole primary course. At the lower primary course girls dropped out more than boys. The difference in rate between boys and girls was 17.74 percent, which was highly significant.

KRISHNA MURTHY (1985) conducted a study entitled “A study of position of enrolment of children in the age group 6-13 years and problems involved in their enrolment.”

The objectives of the study were -

- (i) To find out the enrolment ratio of children in the age group 6-11 and 11-13 years to the child population in the corresponding age group.
- (ii) To identify the problems being faced in the enrolment of children.
- (iii) To acquire information to the measures taken so far the effective enrolment of children.

The findings of the study were -

1. The enrolment of SC children was 4.7 percent and that of ST was 5.1 percent in the age group 6 to 11 years.
2. The regular attendance of children in the schools ranged from 60 to 75 percent.
3. The attendance of children before and after serving the MDM did not show any difference.
4. Measures taken for enrolment of children included visiting the house of non-enrolled children serving mid day meals. Supply of uniforms and text books.

LAL (1986) conducted “Study on Early Children Education- An effect to enhance school environment.”

The objectives of the study was to examine the enrolment pattern and dropout rate of children who underwent early childhood in anganwadi centers.

The main findings of the study were -

1. Nearly 70 percent of the children were enrolled in elementary schools.
2. The enrolment of higher castes were marginally better than that of economically weaker sections. However, 60 percent of the children from weaker sections got enrolled.
3. Cumulative dropout in the four-year period was 70 percent. The dropout being maximum in the first and second years of schooling.
4. Male Children's enrolment was found to be much higher than of female children.
5. Those who had exposure to early children education were adjusted better and picked up faster in the first two years of schooling.

SAXENA AND MITTAL (1995) studied the impact of mid day meals programme on enrolment and retention at the primary stage.”

The study was taken to examine two hypothesis -

- (i) The mid day meal programme increases significantly the school enrolment or participation rate of children.
- (ii) The mid day meal programme reduces significantly the dropout and retention rates of children in the educational cycle.

The major findings of the study were -

1. The district level analysis of all the sets of data arrangement except for cluster I indicated the influence of the MDM programme in total enrolment in the form of higher ERT means for MDM district than those for non-MDM district.
2. The district level study did not provide indication for the difference in RRT means for MDM and non-MDM districts where as the block level study in Haryana definitely indicated a higher RRT means for MDM blocks than that for non-MDM blocks.
3. The district level analysis indicated that RRT means were higher in MDM district than those in non-MDM district.

LOKNATH MISHRA (1996)

The main objectives were -

1. To study the practice of MDM programme in terms of kind of food, timing, financial, working personnel etc.
2. To study the views of parents, teachers, students, administrators towards the implementation of MDM programme.

The major findings were -

1. 90% of HMs agreed that enrolment of students is directly related to MDM programme.
2. 90% HMs agreed that quality of food should be increased.
3. 76% agreed no space problem in school.
4. 82% parents agreed that quality of food materials is not upto the standard.
5. None of the parents known that they should be involved in maintaining and supervision of MDM programme.

SETHI (1998) studied a comparative study of mid-day meals programme in the primary schools of Mayurbhanj district.

The specific objective of the study were -

1. To study the effect of MDM programme on enrolment of the students.
2. To study the effect of MDM programme on relation of the students.
3. To study the problems related to implementation of the MDM programme.

Some of the major findings were -

1. 71% of schools of the sample are having 2 to 3 teachers. On the other hand less than one third of the schools were equipped with 4 to 5 teachers.
2. About 90% of the teachers opined that the food provided in MDM programme was normal or average standard.
3. About 14% of schools having special room meant for MDM programme.
4. The ratio of male and female teachers incharge of MDM programme in the schools were found to be 9:1.

MURALIDHAR BEHERA (2006)

The main objectives were -

- (i) To investigate the problems encountered by the heads of primary schools.

The major findings were -

1. More than 40% of them face problems relating to the use of TLM by their colleagues.
2. More than 60% of the headmaster face problems regarding organization of Co-curricular activities due to various classes.
3. They also face problems relating to Unit test, VEC and PTA/MTA and MDM in the schools.

ISHU MOHANAND (2008)..

The main objectives were -

1. To study the problems of MDM Programme in terms of food, timing and finance as viewed by the teacher.
2. To study the views of the parents towards implementation of MDM Programme in schools.
3. To study the problems of MDM Programme in terms of food and timing as viewed by the students.

The major findings were -

1. 80% of HMs agreed that the food items supplied under MDM Programme is not up to standard.
2. 95% teachers viewed that financial constraint is a major problem of MDM programme.
3. 75% students were dissatisfied with the quality of food supplied.
4. 95% students viewed that food is properly cooked.

The Akshaya Patra mid day meal Programme (2012) : “No child in India will be deprived of education because of hunger”

Food being the most basic of all human needs. If this is taken care of, other endeavors become easier. The programme approaches the issue of children dropping out of school by assuring them a well-cooked, nutritious and good to eat meal every single day so they come to school. In the long run the expectation is that children who attend school will have a fair chance to improve life standards and thus escape the loop of poverty and hunger. The programme caters to MDG.1 through directly addressing the hunger issue. And MDG-2 by incentivizing the Universalisation of education through its meal programme.

The major findings were -

1. The Akshaya Patra Programme demonstrates a success story in the field of public private partnership in India's Mid-day-meal scheme.

2. A well-implemented programme can effectively address the issue of hunger and malnutrition in India.
3. Reinforcing the RTE act by ensuring that children not only come to school, but more importantly stay in school.

NEED OF THE STUDY

Children are the most valuable of all the resources and a nation can develop only when its resources are fully utilized. Very often it is heard that the mid-day-meal provided to children are not proper from hygiene point of view. Sometime this unhygienic way of food preparation and handling leads to food poisoning in Mid-day-meal centers. Hence the investigator wanted to conduct a study on the mid-day-meal centers for the health point of view.

STATEMENT OF THE PROBLEM

The topic is stated as "**AN INVESTIGATION INTO THE PROBLEMS OF HYGIENIC CONDITION OF MID DAY MEAL CENTRES**".

OBJECTIVES OF THE STUDY

The objectives of the present study are as follows –

1. To study healthy food habits among students.
2. To study the physical conditions of mid-day-meal centers.
3. To study the hygienic conditions of mid-day-meal centers.
4. To suggest measures for improvement of the hygienic condition.

DELIMITATION OF THE STUDY

The study is delimited to primary schools of Khariar block of Nuapada district.

DESIGN OF THE STUDY

Method : Survey Method had been adopted for the present study.

Population : The entire Primary Schools of Khariar block constitutes the population of the present study.

Sample : The investigator has selected 50 Primary Schools of Khariar block of sample through simple random sampling technique.

Tools Used : Following tools had were used the investigator for collection of data –

- (i) Questionnaire for the teacher in charge of MDM.
- (ii) Observation schedule for students and cook.

DATA COLLECTION

The investigator had visited all schools personally and collected relevant data.

STATISTICAL TECHNIQUES TO BE USED

Collected data were analyzed through percentage calculation.

ANALYSIS AND INTERPRETATION

After collection of data, the collected data were organized systematically in order to become meaningful. The data were tabulated and interpreted. In analysis and interpretation emphasis had been given both on qualitative as well as quantitative aspects. In the present study opinion collected through questionnaire and observation schedule had been analyzed and tabulated and according interpretation had been done.

**TABLE NO - I
REACTION OF TEACHER REGARDING MENU OF MDM**

SL. NO.	STATEMENT	POSITIVE		NEGATIVE	
		N	%	N	%
1	Whether the school is providing MDM as per the instruction. (Menu)	50	100	00	00
2	Whether raw rice, dal and vegetables are handled with neatness.	42	84	08	16
3	Whether the schools are having kitchen for preparation of MDM	50	100	00	00
4	If there is kitchen, the type (A) PUCCA (B) THACHED (C) TILE (D) OTHERS	32 10 03 05	64 20 06 10		

From the above table it was found that cent percent teacher have given positive responses with regard to implementation of menu supplied by government. Whereas 84% of teachers agreed that all the raw materials of MDM are handled with neatness. From item no.3 of table no. I It was observed that the almost all the teachers have given positive response with regard to the construction of kitchen in their respective schools.

With regard to type of kitchen about 64% teachers have told that they are having pucca kitchen where as 20% have told that they are having thatched house for kitchen and 6% have responded about availability of kitchen with tiled roof.

TABLE NO. II
CONDITION OF KITCHEN

SL. NO.	STATEMENT	POSITIVE		NEGATIVE	
		N	%	N	%
1	Whether the roof of the kitchen has leakage.	17	34	33	66
2	Information regarding storage of MDM items. (A) Office (B) Panchayat (C) Kitchen (D) Classroom	35 06 04 05	70 12 08 10		
3	Whether the Utensils are cleaned properly before use.	30	60	15	30
4	Whether prepared food is kept being covered	14	28	36	72
5	Whether prepared the cook wear clean cloth at the time of cooking	14	28	36	72

From the above table it was revealed that about 66% teachers were of the opinion that the kitchen roof had no leakage where as 34% teachers told that due to leakage in the roof of the kitchen of their school, they faced a lot of problems during rainy season.

With regard to storage food items of MDM at school 70% teachers reported that food items of MDM are being stored in the office of their office room but only 12% reported that they used to keep food items in the panchayat village.

With regard to neatness of the Utensils 60% teachers reported that Utensils are properly cleaned in their schools before preparation of MDM, where as 40% teachers reported that it was not possible on their part to clean all the Utensils regularly.

With regarding the item no-4 of table-II about 72% teachers admitted that prepared food of MDM is not kept with cover before serving to students. Hence sometimes some poisonous insects may fall into it which causes disasters effect on the students.

With regard to the cleanliness of the cook about 62% teachers reported that the cooks do not maintain proper cleanliness regarding their clothes at the time of cooking.

TABLE NO – III
REACTION OF PARTICIPANTS REGARDING SAFE DRINKING WATER

SL NO	STATEMENT	POSITIVE		NEGATIVE	
		N	%	N	%
1.	Where from the water collected for MDM				
	(A) Tubewell	40		80	
2.	(B) Well	10		20	
	How the Utensils of MDM are being cleaned.				
	(A) Ash	29		58	
	(B) Sand and soil	12		24	
3.	(C) Surf or Vim	09		18	
	Whether the used water are properly released from the kitchen				
	(A) Logging near kitchen	33		66	
	(B) Released through drain	17		34	

From Table No. III it was found that 80% teachers of view that the cook collect water from tube well where as 20% teachers reported that water is being collected from well.

Regarding cleanliness of Utensils of MDM 58% teachers by using ash of the oven where as 24% teachers told that it is cleaned by using sand and soils, only 18% teachers admitted that the Utensils were cleaned by the use of vim bar or surf.

Regarding release of used water from the kitchen about 65% of the teachers reported that the water is being logged near the kitchen which causes foul smell and helps to invite flies and insects. Where as only 35% teachers reported that used water is released through drain.

TABLE NO - IV
PHYSICAL ENVIRONMENT OF KITCHEN

SL No	STATEMENT	N	%	N	%
1.	Environment of the place where MDM is being				
	(A) Dump	44			
	(B) Clean	26			
	(C) Managable	30			

2.	The place where students used to sit to take MDM (A) Varandah (B) Classroom (C) Field or Under the tree	43 02 05	86 04 10		
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From the Table No. IV it was found that about 44 teachers reported that the place/environment where food for MDM is being cooked remain dumpy. Where as only 30% reported that their environment is manageable. And only 26% teachers reported cleanliness of environment.

About 86% teachers told that students used to sit in the school verandah to take MDM where as 30% told that MDM their students sit in the classroom for MDM where as 14% teachers told that students used to sit either in the school field or under trees of school campus.

OBSERVATION SCHEDULE :

1.	Whether the roof and wall of the kitchen were clean ?	70%
2.	Whether water logging was found there inside and outside the kitchen ?	70%
3.	Whether the Utensils are properly cleaned by the cook before use ?	60%
4.	Whether the cooked food are properly covered before it is served to the students ?	63%
5.	Whether the verandah (Place where students sit to eat) is clean or leftover food are there on the verandah ?	80%
6.	Whether the cook is using clean cloth at the time of cooking ?	68%
7.	Whether the vegetables, dal, raw rice etc are properly washed before use ?	70%
8.	Whether old stock is used by the cook ? (e.g. egg, dal, spices etc)	45%
9.	Whether spices are kept open ?	58%
10.	Whether students complain for stomach pain or vomiting after taking MDM ?	40%

Section – B

OBSERVATION REPORT

Besides questionnaire an observation schedule was developed by the investigator to collect data regarding the hygienic condition of different mid day meal centers. The following observation was made by the investigator.

During observation it was found that almost 70% kitchens were running in a dirty surroundings. The fuel collected for cooking was dumped in the kitchen. Kitchens were full of unwanted and waste materials.

The roof and wall of inside Kitchen was looking totally black and full of spider nets.

Further it was found during observation that water was logging near the kitchen, which was very much suitable for flies and other poisonous insects. In about 70% schools, cooked food was not properly covered.

The cook and her helper were not using clean cloth at the time of cooking. They have not worn clean clothes so far. Vegetables, raw rice were not properly washed by the cook.

While observing the sitting place of the school the school the researcher found that 86% students ate the mid day meal on the verandah which was full of left over food. It was not properly cleaned.

In about 45% MDM centers old stock had been used in cooking by the cook. Generally egg, dal and spices etc. Hence it was clear the school authority and the teacher in charge of MDM are taking paying due attention to the quality of food provided for MDM.

In some schools spices were kept in polythene which was kept open. Through out the day and sometimes students were complaining for stomach pain or in some cases vomiting had occurred after taking MDM. This sort of problems had taken place once or twice in some centers So it is clear that some sort of food poisoning might have taken place.

FINDINGS OF THE STUDY :

1. Ninety percent of the teachers agreed that cooked food should be covered before serving to the students.
2. Eighty percent teachers agreed that utensils should be washed properly before cooking.
3. More than seventy percent of teachers said that the stored food items must be checked time to time.
4. Eighty percent of teachers agreed that there must be a dining hall for eating MDM.
5. Seventy percent of viewed that there is leakage over the roof of kitchen.
6. Sixty-five percent students complained stomach pain and vomiting tendency.

7. Sixty-three percent students have not washed their hands before taking food.
8. Eighty percent of the mid day meal centers old stock have been cooked for lunch.
9. Sixty percent cooks and the helper wore dirty clothes while preparing food, and serving it.
10. Most of all schools the verandah was not properly washed before cooking.
11. Fifty-seven percent of teachers agreed that Utensils were not properly washed before cooking.
12. Fifty-five percent teachers expressed that water logged water near the kitchen.
13. Fifty percent teachers told kitchen condition is not conducive.
14. Fifty percent agreed that dal, raw rice, and vegetable were not properly washed before cooking.

SUGGESTION TO IMPROVE MDM PROGRAMME :

1. Utensils must be washed properly before and after cooking.
2. Dal, raw rice and vegetables should be washed properly before cooking.
3. Kitchen room should be washed in certain interval of time.
4. Students should wash their hands and thali before taking meals.
5. The cook and the helper must wear clean clothes while preparing MDM.
6. Spices, oil must be packed in plastic container.
7. While purchasing food items, old stocks should not be purchased.
8. Students must sit properly and have their meals in a line.
9. Students should be instructed not to throw food while eating, left over food should be washed thoroughly.
10. Water should not be logged near the Kitchen room.
11. Tape and water (basin) facilities must be provided inside school campus.
12. Fresh vegetable should be used for cooking. Rotten things should be replaced immediately.
13. Varandah should be wasted using dettol.
14. If insects or anything else fall on cooked food, it must be thrown away.

15. Unnecessary unwanted things should not be stored inside kitchen, it must be washed periodically.

FINDINGS OF THE STUDY

1. Ninety percent of the teachers agreed that cooked food should be covered before serving to be students.
2. Eighty percent teachers agreed that utensils should be washed properly before cooking.
3. Eighty percent of the mid-day-meal centres old stock have been cooked for lunch.
4. Fifty-seven percent of teachers reported that water logged near the kitchen.
5. Fifty-seven percent agreed that dal, raw rice and vegetable were not properly washed before cooking.
6. Cooked food is not covered in some school which may cause contamination by insects, waste materials etc.

SUGGESTIONS FOR IMPROVEMENTS OF MDM CENTRES

1. Cooked food must be kept with cover.
2. Utensils must be washed properly before and after cooking.
3. The cook and the helper must wear clean clothes while preparing MDM.
4. While purchasing food items, old stocks should not be purchased.
5. Varandah should be washed daily using dettol.
6. Tape and basin facilities should be provided inside school campus.
7. Children should be instructed daily to wash their hands properly with soap before taking food.
8. School authority should have a watch over the entire process of Mid-day-meal of the school.
9. School should develop kitchen garden to supply fresh vegetable for MDM.
10. Attention should be paid for provision of clean drinking water.
11. Water logging should be cleared thoroughly.
12. All the members of the school should give attention to the neatness and cleanliness of kitchen, cook, food item and the surrounding.

CONCLUSION

As the wastage and stagnation among the students in the age group of 6-14 is very high, special incentives have been recommended by various committees from time to time. Mid-day-meal programme introduced in the year 1995 on 1st July. The objectives of this programme is to increase the enrolment percentage among poor children and to meet their food deficiency. But in actual practice due to various reasons the programme is not in a position to fulfill its objectives. Views had been collected from the headmasters, teacher in-charge of MDM, cook as well as from the children. Very often it is heard that Mid-day-meal provided to children are not proper from hygiene point of view. Sometime the unhygienic way of food preparation and handing leads to food poisoning in mid-day-meal centres.

Thus in order to avoid the unhygienic conditions following suggestions should be taken into consideration.

1. Utensils must be washed properly before and after cooking.
2. Cooked food must be kept with cover.
3. Children should be instructed daily to wash their hands properly with soap before taking food.
4. Attention should be paid for the provision of clean drinking water.
5. Water logging should be cleaned thoroughly.

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