



Government of India

Ministry of Human Resource Development

Department of School Education & Literacy



**मध्याह्न भोजन योजना
Mid Day Meal Scheme**

**Report of 10th Joint Review Mission on
Mid-Day Meal Scheme**

PUNJAB

(22nd to 29th January, 2018)

Acknowledgment

The Joint Review Mission Team for the 10th Review Mission-Punjab 2017-18 would like to thank the Government of Punjab for all the support rendered in organizing the logistics as well as in providing much required programmatic information that facilitated the Mission meet the terms of reference developed by the Government of India.

The members of the Mission acknowledge and value the support and hospitality extended by the Department of Education; the teachers working in the remote villages; the State officials of the Mid-Day Meal Scheme; the kitchen staff working in the MDM kitchens; the Department of Health; SMC members and most importantly, the students of the sample schools.

The review team has made an earnest effort to include in the report the wide range of observations and discussions held at various levels with key officials and other stakeholders' earnestly. It sincerely hopes that the recommendations that have emerged through this multi-pronged exercise by interacting with the officials, experts, implementers and the right holders - children, would help the Government of Punjab in strengthening the implementation of the Mid-Day Meal Scheme in schools and ensure that every school going child avails its right to nutritious food in the State.

JRM TEAM,

Punjab: January, 2018

MID DAY MEAL SCHEME JOINT REVIEW MISSION

PUNJAB

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CHAPTER 1

Composition and Terms of Reference (TOR)

Nutrition is directly linked to human resource development, productivity and ultimately to the nation's growth. Malnutrition on the other hand refers to insufficient, excessive, or imbalanced consumption of nutrients by an organism. In developed countries, the diseases of malnutrition are most often associated with nutritional imbalances or excessive consumption. In developing countries, malnutrition is more likely to be caused by poor access to a range of nutritious foods or inadequate knowledge. It is inextricably linked with illiteracy, especially female illiteracy, lack of safe drinking water, sanitation, ignorance, lack of awareness and ill health. It creates its own cycle within the large cycle of poverty.

Malnutrition adversely affects Universalization of Elementary Education (UEE). Even if a malnourished child does attend school, he/she finds it difficult to concentrate on and participate in the learning activities in school. Unable to cope, the child would very often drop out of school.

Various studies suggests that absence of an adequate breakfast over extended period can affect both behavior and nutritional status; such children exhibit irritability, decreased attentiveness and low concentration span, all of which affect their active learning capacity. Malnutrition is therefore not just an issue for the nutritionist; the planners and economists also need to recognize that the cost of malnutrition is much greater than the investments required to end hunger/malnutrition.

The Mid-Day Meal (MDM) Scheme is a flagship programme of the Government of India, having the distinction of being the largest school feeding programme in the world, reaching out to about 9.78 crore children in 11.43 lakh primary and upper primary Government , Government Aided and Local Body schools, Special Training Centres (STC) and Madarsa and Maqtab supported under Sarva Shiksha Abhiyan (SSA). Mid day meal is also served during the summer vacations in drought-affected areas. Cooked mid-day meal consists of 100 grams of wheat/rice, 20 grams of pulses, 50 grams of vegetables and 5 grams of oil/fat and provides 450 calories of energy and 12 grams of

protein at primary stage. For upper primary stage children, it consists of 150 grams of wheat/rice, 30 grams of pulses, 75 grams of vegetables and 7.5 grams of oil/fat and to provide 700 calories of energy and 20 grams of proteins

A programme of scale and magnitude of Mid Day Meal requires close monitoring and evaluation at all levels. In 2010, the Ministry of Human Resource Development, Govt. of India, decided to review implementation of the programme in all its aspects through the Review Missions, which are also to provide suggestions for improvement.

1.1 Joint Review Mission – Team Members

- i. Dr. Neelam Khetarpaul, Ex. Dean, Prof. & Head (Food & Nutrition), COHS, CCS, HAU, Hisar, Haryana.(Mission Leader).
- ii. Shri G. Vijaya Bhaskar, Director (MDM), MHRD, Govt. of India
- iii. Dr. Sudha Katyal, Principal & Professor (HDFR), Govt. College of Home Science, Chandigarh
- iv. Shri Prashant Goel, Director General, School Education, Govt. of Punjab
- v. Shri K K Sharma, Senior Consultant, Technical Support Group-Mid Day Meal (TSG-MDM).
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Dr.(Ms) Sarita Verma and Dr.(Ms.) Ritu, both Research Assistants from IC College of Home Science, CCS Haryana Agriculture University, Hisar and Ms. Prachi and Ms. Deeksha, both Research Assistants from Government Home Science College, Panjab University, Chandigarh also assisted the Joint Review Mission.

The 10th JRM visited 22 schools in Jalandhar on 22-23 January, 2018 and 21 schools in Roopnagar on 24-25th January, 2018 for monitoring the implementation of Mid Day Meal Scheme as per the defined terms of reference

1.2 The Terms of Reference for the Review Mission were as under:

- i. Review the fund flow from State to Schools/implementing agencies.
- ii. Review the coverage of the Scheme
- iii. Review the availability of Management Structure at State, District, Block level
- iv. Review the delivery mechanism of food grains from State to Schools
- v. Review the smooth implementation of the Scheme with particular reference to Interruptions.
- vi. Review the Creation of Capital Assets
- vii. Construction of Kitchen-cum-stores
- viii. Procurement/Replacement of Kitchen Devices
- ix. Review the involvement of NGO's/Trust/Centralized kitchens in the Scheme
- x. Review the payment of Cost of Food grains to Food Corporation of India
- xi. Review the convening the meetings of District Level Committee under Chairpersonship of senior most Member of Parliament (Lok Sabha).
- xii. Review the Management Information System (MIS)
- xiii. Review the implementation of Automated Monitoring System
- xiv. Convergence with Rastriya Bal Swasthya Karyakram for health check-up, supplementation of micronutrients under WIFS & deworming medicine under National deworming day and health checkups and supply of spectacles to children suffering from refractive errors.
- xv. Review the following**
 - a. Operationalization of Mid-Day Meal Rules, 2015
 - b. Dissemination of Food Safety Guidelines up to District, Block and School
 - c. Enrolment of children and Cook-cum-Helpers under Aadhaar
 - d. Payment of Honorarium to Cook-cum-Helpers

- e. System of Storage food grains and other ingredients
- f. Role of Teachers in Mid-Day Meal Scheme.
- g. Tasting of MDM by Teacher, Parents and Community.
- h. Testing of meals
- i. Involvement of Community
- j. Bank Account of Cook-cum-helpers
- k. Awareness of the Scheme
- l. Contingency Plan

Terms of Reference for Nutritional aspects:

- a. To assess the anthropometric measurements of a sample of children availing MDM
- b. Height ii. Weight iii. Mid arm Circumference
- c. To Calculate the Body Mass Index (BMI) on the basis of measurement of height and weight.
- d. To identify the children who are undernourished and over nourished.
- e. To review the quality and quantity of the served MDM.
- f. To review the satisfaction of the children parents and community on the served meal under MDM in respect of quality and quantity.
- g. To suggest some nutritionally balanced region specific recipes.

1.3 Food and Nutrition norms through the years under MDM:

Initially the MDM Scheme envisaged the provision of free of cost 100g of wheat /rice for children studying in classes' I-V in all Government, local body and Government aided primary schools. The central government provided wheat /rice to the States/UTs; 3 kg

of cereals were to be distributed free of cost to children who had over 80% attendance in the previous month. Most of the states distributed food grains to children but some states who were earlier providing cooked mid day meal or ready to eat food to school children, continued to do so.

In 2001 Hon'ble Supreme Court of India directed that hot cooked mid day meal containing 300kcal energy and 12 g of protein/day for 200 days to all children studying in classes I-V in all government, local body and government aided primary schools should be provided under Mid Day Meal Scheme.

. Table-1 Food Norms

Nutritional content	Norm as per NP-NSPE,2004	Revised norm as per NP- NSPE,2006
Calories	300	450
Protein	8-12 g	120
Micro – nutrients	Not prescribed	Adequate quantities of Micro nutrients like Iron, folic Acid and Vitamin A

1.4 Nutrition Content under MDMS: Presently

The above food norms were revised w.e.f. 1st December, 2009 as indicated below:

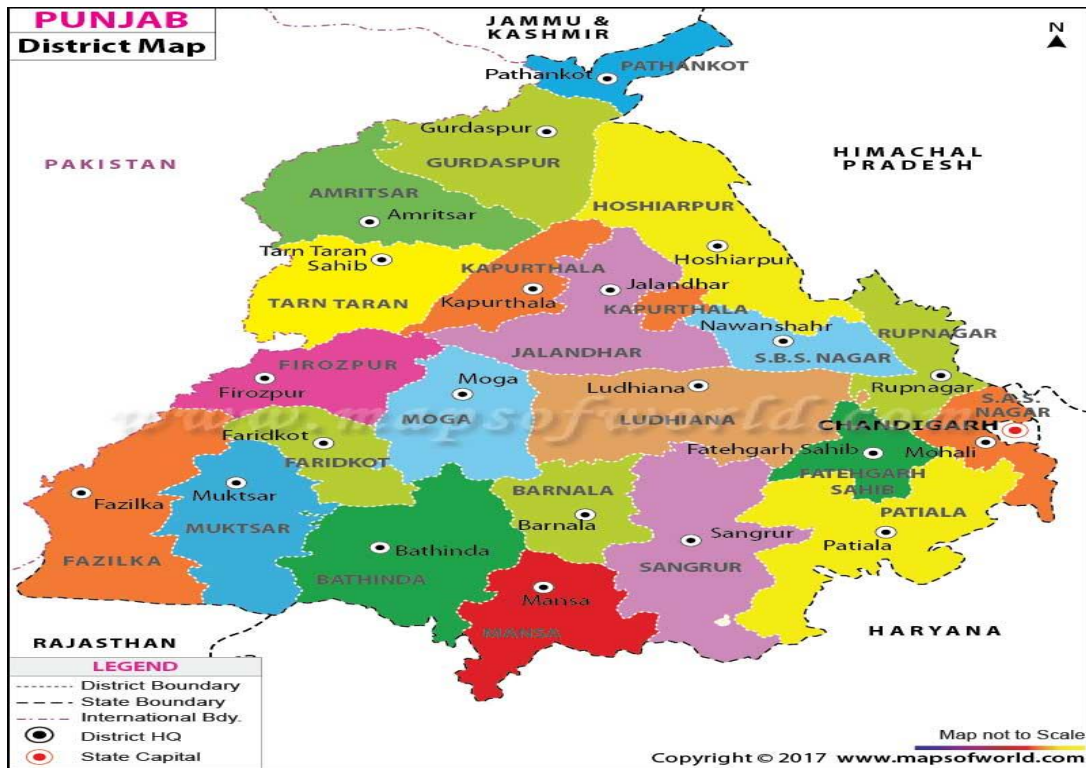
- a) 450 kcal and 12g of protein which is derived from 100 g of food grains (rice/wheat), 20g of pulses , 50g of vegetables and 5g of oil for children studying in primary classes and
- b) 700 kcal and 20g of protein, which is derived from 150g of food grains (rice/wheat), 30g of pulses , 75g of vegetables and 7.5g of oil in upper primary classes.

Table 2: Revised Food Norms

S. No.	Items	Quantity per Child per Day	
		Primary	Upper Primary
1.	Food grains	100 g	150 g
2.	Pulse	20 g	30 g
3.	Vegetables (leafy also)	50 g	75 g
4.	Oil & fat	5.0 g	7.5 g
5.	Salt & Condiments	As per need	As per need

1.5 Punjab: An Introduction

Punjab State is located in northern India and bordered by the Jammu & Kashmir to the north, Himachal Pradesh to the east, Haryana to the south and southeast, Rajasthan to the southwest, and the Pakistan province of Punjab to the west. The State covers an area of 50,362 square kilometers or 1.53 percent of the total geographical area of India. It is the twentieth largest Indian State by area. As per 2011 Census, the State has a population of 277,04,236 and thus becomes the sixteenth largest State by population, comprising 22 districts. Punjabi, is the most widely spoken and official language of the state. The main ethnic group are the Punjabis, with Punjabi Sikhs (57.7 percent) forming the demographic majority followed by Hindus (38.5 percent). The state capital is located in Chandigarh, a Union Territory and also the capital of the neighboring State of Haryana. The five rivers are Sutlej, Ravi, Beas, Chenab and Jhelum.



Population:

As per Census 2011, Punjab has population of 2.77 Cr. against 2.44 Cr. in 2001 census. The male and female population is 1.46 Cr and 1.31 Cr. In 2001, total population was 24,358,999 in which males were 12,985,045 while females were 11,373,954. The total population growth in this decade was 13.89 percent while in previous decade it was 19.76 percent. The population of Punjab forms 2.29 percent of India in 2011. In 2001, the figure was 2.37 percent.

Literacy:

According to census of India 2011, the **literacy rate in Punjab is 75.84%** which is better than the national average of 73.0%. The total number of literates in Punjab is 1,87,07,137. The male literacy rate is 80.44% and female literacy rate is 70.73%. The male literacy rate is slightly less than national average of 80.9%. But the female literacy

rate in Punjab is better than that of India. The female literacy rate in India is 64.6%. NOTE: Some sites show literacy rate in Punjab as 76.7, but the correct figure is 75.84%. The figure 76.7 was according to the provisional data, it was not the actual figure. The final figure according to official data is 75.8.

1.6 District: Jalandhar

Jalandhar district (Jalandhar Zilā) is a district in Doaba region of the state of Punjab in North-West Republic of India. District headquarters is Jalandhar city. Prior to the Partition of India, Jalandhar was also the headquarters of the Jalandhar Division, with constituent districts Jalandhar, Hoshiarpur, Ludhiana, Ferozpur and Kangra. The entire Jalandhar Division was awarded to India when Punjab was partitioned



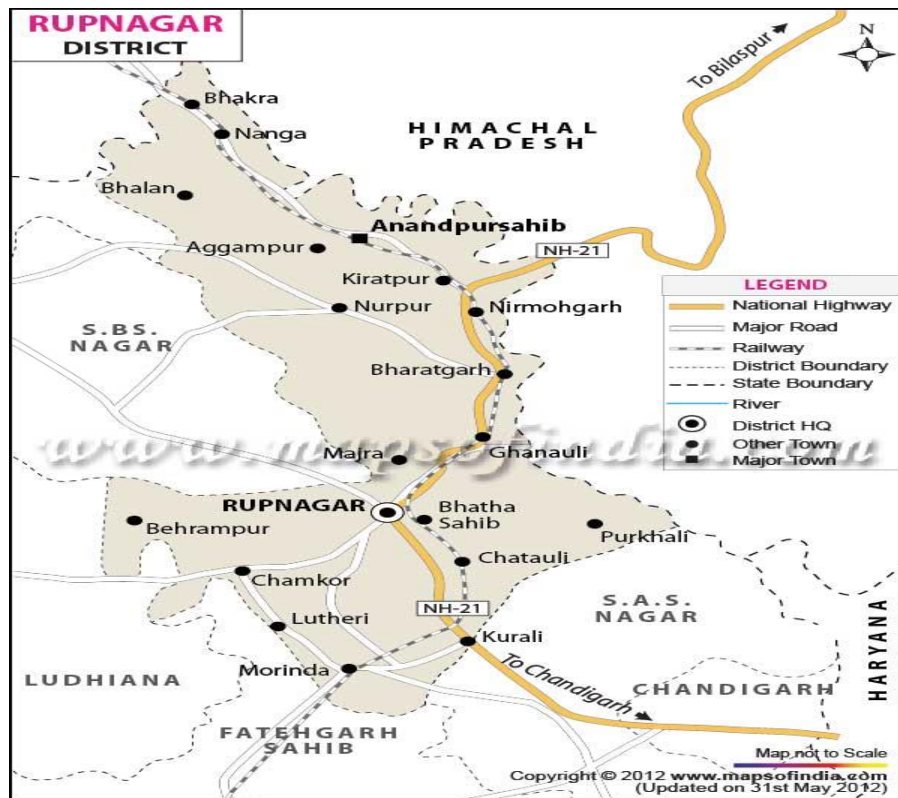
POPULATION:

According to the 2011 census Jalandhar district has a population of 2181,753, roughly equal to the nation of Latvia or the US state of New Mexico. This gives it a ranking of

209th in India (out of a total of 640). The district has a population density of 831 inhabitants per square kilometre (2,150/sq mi). Its population growth rate over the decade 2001-2011 was 11.16%. Jalandhar has a sex ratio of 913 females for every 1000 males, and a literacy rate of 82.4%. The district also houses the largest proportion of Hindus in the state of Punjab.

1.7 District: Rupnagar

Rupnagar District is one of the twenty two districts in the state of Punjab in North-West Republic of India. The town of Rupnagar (formerly known as Rugar or Ropar) is said to have been founded by a Raja called Rakeshar, who ruled during the 11th century and named it after his son Rup Sen. It is also the site of an ancient town of the Indus Valley Civilization. The major cities in Ropar District are Morinda, Nangal, Kurali, Anandpur Sahib. Morinda is also known as Baghawala "The City of Gardens." Morinda is located at Chandigarh-Ludhiana Highway.



POPULATION:

In 2011, Roopnagar had population of 684,627 of which male and female were 357,485 and 327,142 respectively. In 2001 census, Roopnagar had a population of 628,846 of which males were 332,949 and remaining 295,897 were females. There was change of 8.87 percent in the population compared to population as per 2001. In the previous census of India 2001, Roopnagar District recorded increase of 15.86 percent to its population compared to 1991.

CHAPTER 2

Methodology

The districts have been selected on the basis of performance of the Scheme during the last year. As per the Terms of Reference (ToRs) for the Review Mission, one district Roopnagar was selected by the Govt. of India and the other district Jalandhar was selected by the State Govt. The multistage stratified random sampling was used for selection of schools in the selected districts. The Review Mission followed a methodology to capture the intricacies involved in the implementation of the programme.

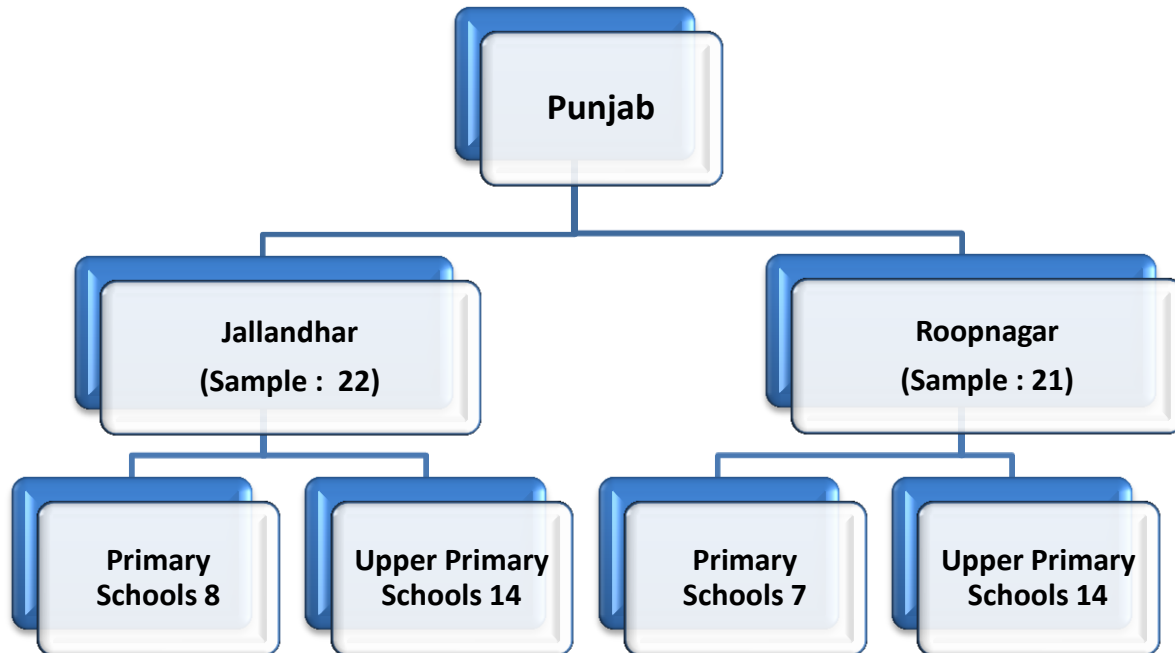
B: NUTRITIONAL ASSESSMENT

A nutritional survey in a total of 43 government run primary and upper primary schools in two selected districts, namely Jalandhar and Roopnagar were undertaken in which a total of school children were surveyed with an objective to collect information related to the following aspects of children availing Mid Day Meal:

- Food pattern
- Anthropometric profile
- Clinical signs of nutritional deficiencies
- Quality and quantity of MDM

Methodology

Selection of sample A sample of children from primary (I- V class) and upper primary schools (VI-VIII class) from the two districts of Punjab were randomly selected. A multi stage stratified random sampling method was used for selection of schools in the selected districts.



Food Pattern: The food pattern of the children was studied by asking them what they have taken in the morning before coming to school, during the school and after the school till they went off to sleep. The 24 hour dietary recall method was employed to know about the diet of the previous day. The information thus obtained was considered to be the general dietary pattern including the food items consumed.T

Anthropometric Profile: The height and weight of selected children was measured using standard methods (Jelliffe, 1966). The Body Mass Index (BMI) was calculated using the following equation given by Garrow (1981):

$$\text{BMI} = \text{Weight} / \text{Height}^2$$

Where, weight is in kilogram and height is in meters.

The height, weight and BMI were analyzed for Z - scores using WHO Global Database on Child Growth and Malnutrition (WHO, 2006).

The children were classified into normal (-2SD to +1SD), undernourished (< -2SD) and overweight (+1SD to +3SD) categories based on their Weight for Age (WAZ) and Height for Age (HAZ). Similarly, based on their BMI Z-scores, the children were classified into following categories :

Normal : -2SD to +1SD

Moderately undernourished	: -2SD to -3SD
Severely undernourished	: < -3SD
Overweight	: +1SD to < +3SD
Obese	: \geq +3SD

Clinical Survey: A Clinical survey was undertaken to study the conspicuous signs of protein deficiency, vitamin A deficiency, B complex deficiency and iron deficiency anemia. Dental health of the students was also studied as a part of the clinical survey. The results of the survey have been presented in a tabular form.

Quality and Quantity of MDM: The quality and quantity of MDM was assessed by visiting schools at the time of serving of MDM. One 'food serving' was measured with the help of a measuring cup. The quantity of food was classified into more than adequate, adequate and inadequate. Quality of MDM served was assessed as poor, average, good and very good.

CHAPTER 3

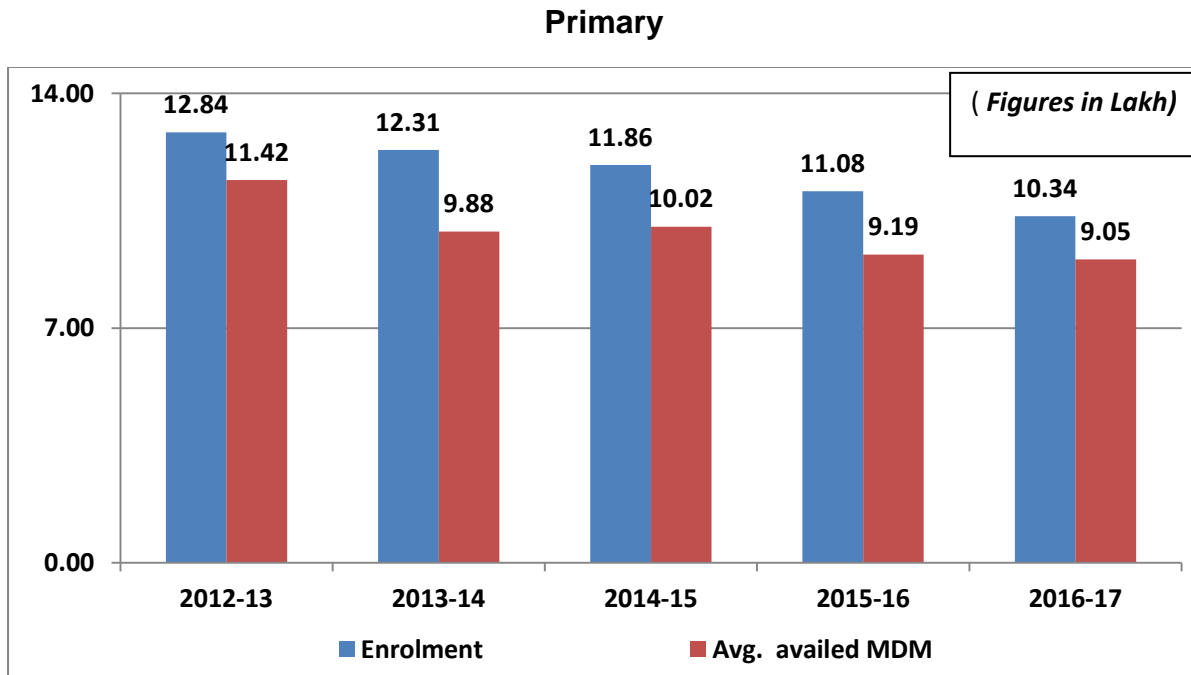
Review of performance: Physical and financial (2012-13 to 2016-17)

3.1 Review the coverage of the Scheme

The coverage under primary stage under Mid Day Meal scheme is consistently decreasing over the years. The decreasing trend in coverage is given as under:.

Year	Enrolment	PAB approval	Avg. availed MDM	% availed vs. Enrol.	% availed vs PAB approval
2012-13	1284134	1179000	1141622	89%	97%
2013-14	1230991	1161887	988076	80%	85%
2014-15	1186480	1070000	1002012	84%	94%
2015-16	1108336	1100000	918904	83%	84%
2016-17	1034221	935300	904959	88%	97%

Graph : Decreasing trends of Enrolment and Average number of children availing MDM:



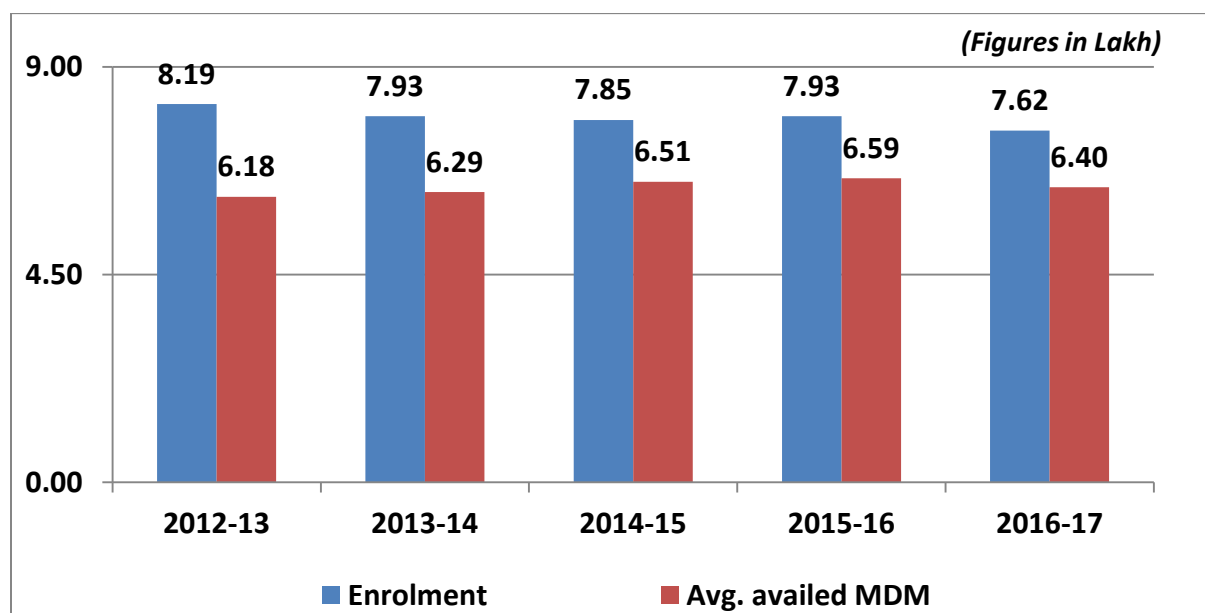
3.2 Coverage of children: Upper Primary

Unlike Primary, the decline in enrolment is not as much in upper primary stage, but at the same time the decline in coverage of children under MDMS is quite sharp, as only 76% of the enrolled children have availed mid day meal on an average basis during 2012-13, whereas the coverage during 2016-17 was 84%.

Year	Enrolment	PAB approval	Avg. availed MDM	% availed vs. Enrol.	% availed vs PAB approval
2012-13	819131	715000	618490	76%	87%
2013-14	793349	708762	628732	79%	89%
2014-15	785033	685350	651080	83%	95%
2015-16	792986	703350	658622	83%	94%
2016-17	761893	663900	639504	84%	96%

Graph : Trends of enrolment and Average number of children availing MDM:

Upper Primary



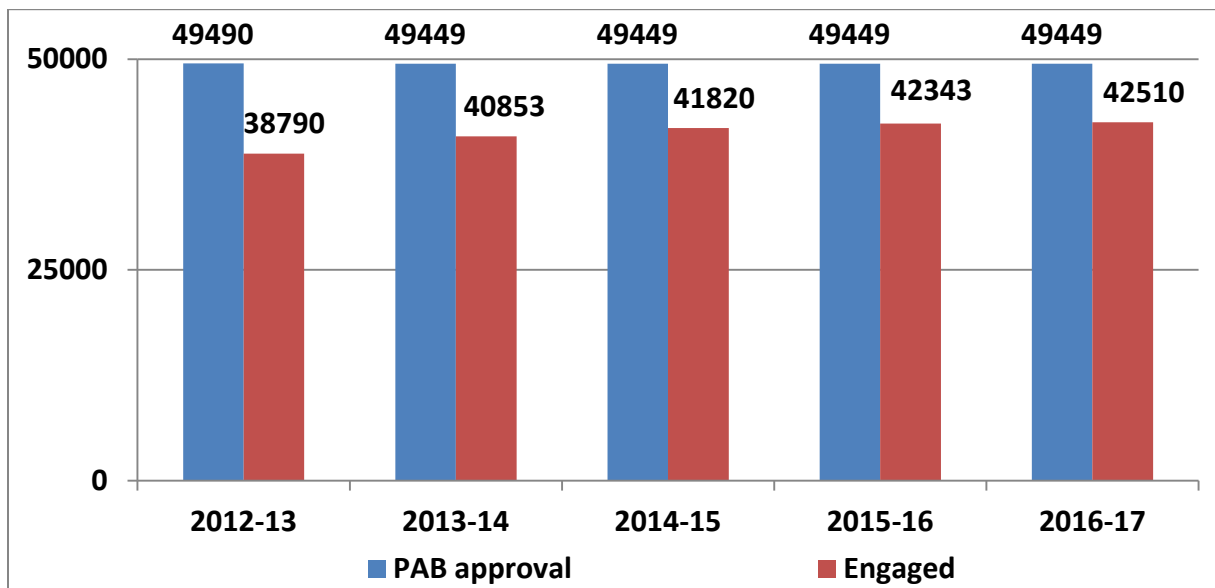
3.3 Cook-cum-helpers

The Programme Approval Board-Mid Day Meal has approved the engagement of 49449 cook-cum-helpers against which the School Management Committees have engaged 43560 Cook-cum-helpers till December, 2017 for cooking and serving of MDM. The Review Mission observed that the all the schools had engaged the CCH as per the prescribed norms on the basis of the enrolment in the schools.

The CCH in Roopnagar informed that they have been paid honorarium up to November, 2017 in their bank account through e-payment. However, the honorarium was paid by cheque in to the bank account of CCH. Thus there is delay of more than one month in the payment of honorarium to CCH.

All the CCH have received training for preparing nutritious recipes.

Year	PAB approval	Engaged	% Engaged
2012-13	49490	38790	78%
2013-14	49449	40853	83%
2014-15	49449	41820	85%
2015-16	49449	42343	86%
2016-17	49449	42510	86%



3.4 Details of Allocation of funds and Expenditure against Central Assistance

(Rs. in Lakh)

Year	Cooking cost*		TA		Hon. to CCH		MME	
	Allocation	Util.	Allocation	Util.	Allocation	Util.	Allocation	Util.
2012-13	16619.36	14627.71	406.74	263.01	3711.75	3785.56	347.70	181.83
2013-14	17616.63	16103.66	401.19	326.93	3708.68	2997.86	361.53	361.51
2014-15	18142.20	16420.58	384.28	364.64	3708.68	3617.55	366.14	363.36
2015-16	20041.91	16626.97	358.46	358.42	2966.94	2524.46	320.79	342.93
2016-17	19458.17	17522.20	358.04	294.40	2966.94	2031.50	289.82	370.33

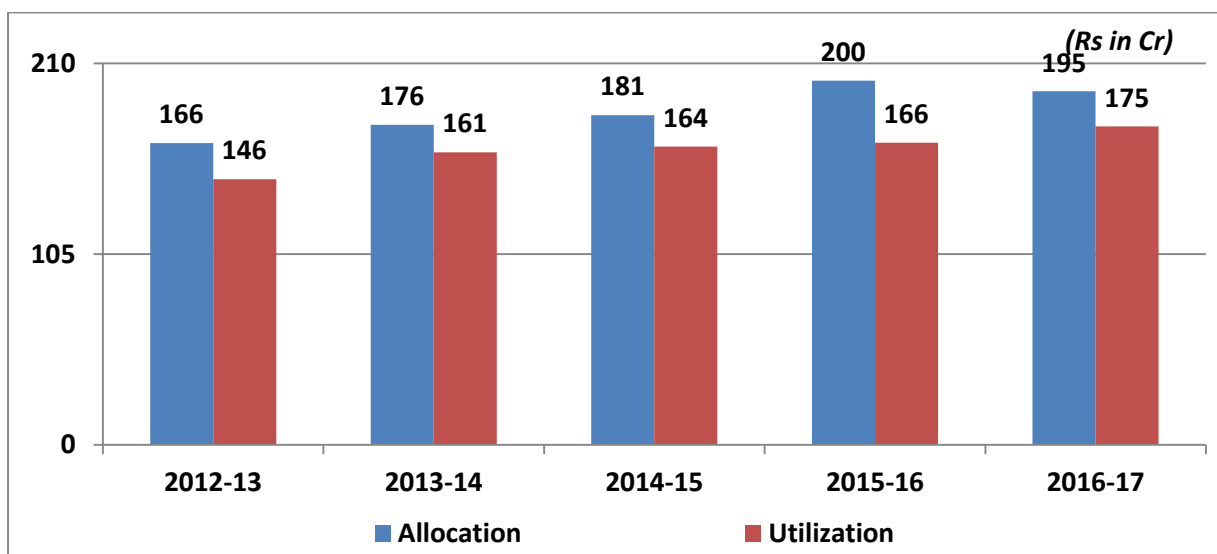
*Central as well as State Share.

3.5 Component wise Details of Allocation and Expenditure

3.5.2 3.5.1 Utilization of Cooking Cost (Central as well as State Share)

(Rs in lakh)

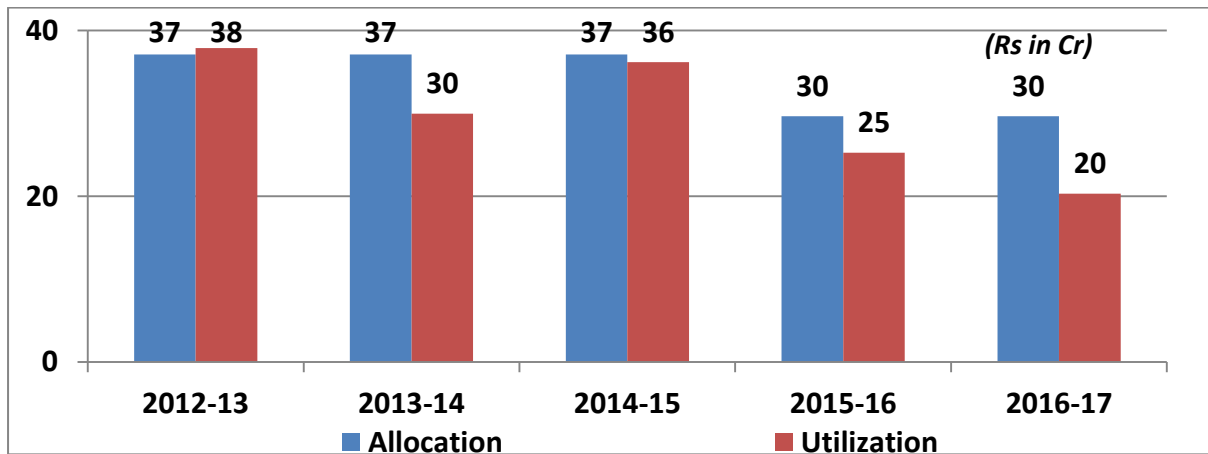
Cooking Cost	2012-13	2013-14	2014-15	2015-16	2016-17
Allocation of Funds	16619.36	17616.63	18142.20	20041.91	19458.17
Expenditure	14627.71	16103.66	16420.58	16626.97	17522.20



3.5.3 Utilization of Honorarium to Cook-cum-helpers

(Rs in lakh)

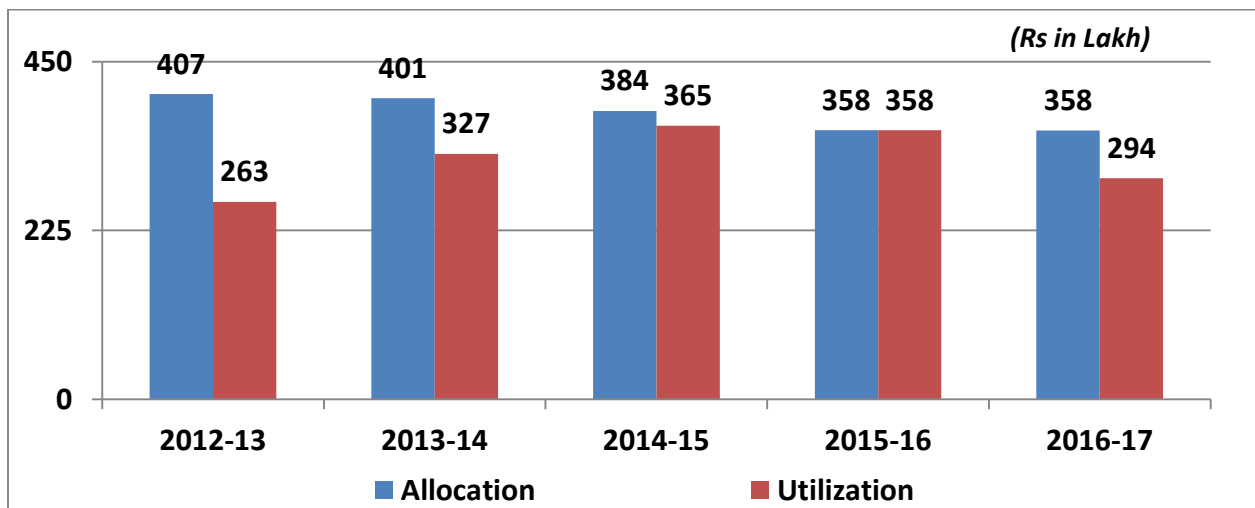
Hon. to CCH	2012-13	2013-14	2014-15	2015-16	2016-17
Allocation of Funds	3711.75	3708.68	3708.68	2966.94	2966.94
Expenditure	3785.56	2997.86	3617.55	2524.46	2031.50



3.5.4 Utilisation of Transportation Assistance

(Rs. in lakh)

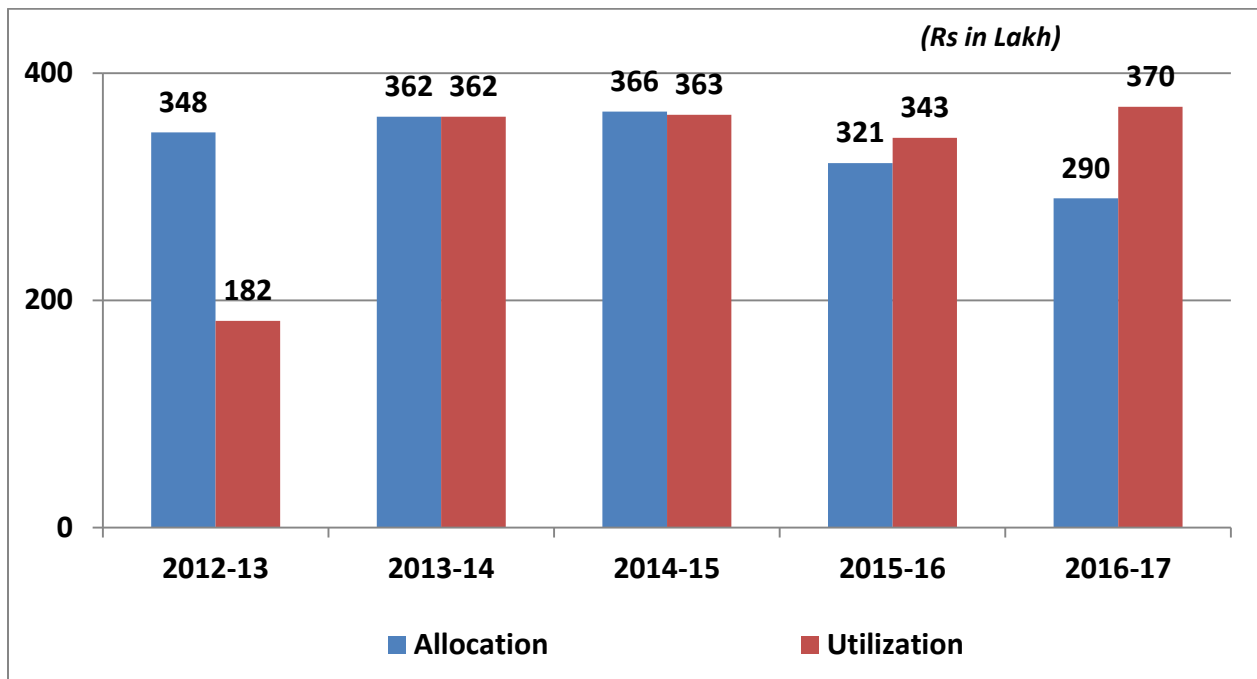
Transportation Assistance	2012-13	2013-14	2014-15	2015-16	2016-17
Allocation of Funds	406.74	401.19	384.28	358.46	358.04
Expenditure	263.01	326.93	364.64	358.42	294.40



3.5.5 Utilization of Management Monitoring and Evaluation (MME)

(Rs. in lakh)

MME	2012-13	2013-14	2014-15	2015-16	2016-17
Allocation of Funds	347.70	361.53	366.14	320.79	289.82
Expenditure	181.83	361.51	363.36	342.93	370.33



CHAPTER: 4

Observations from the Field as per the ToR

4.1 Review of the fund flow mechanism

Director General, School Education, Government of Punjab draws the funds from the Treasury. The funds are remitted to the District Education Officers (Elementary Education) through e- transfer. District Education Officers (EE) releases the funds to the implementing agency at school level.

Department of School Education & Literacy, Government of India made ad-hoc release of Rs.4017.07 lakh to the State on 1st May, 2017 for the implementation of Mid Day Meal Scheme. Rs. 3948.19 lakh were released on 28th December, 2017 towards the balance of first installment. The delay occurred in the release of balance of first installment because the State made matching contribution in its State share in the month of December, 2017 only.

The flow of funds released under Mid Day Meal Scheme during 2017-18 is given below:

Component	Fund received		Funds released			
	Date	Amount	District		School	
			Date	Amount	Date	Amount
Cost of FG	01/05/17	298.90	19/07/17	217.25	-	-
	28/12/17	340.40	10/11/17	235.09		
			08/01/18	235.08		
Cooking cost	01/05/17	4700.00	19/07/17	1352.78	24/07/17	1352.78
	28/12/17	4630.05	14/09/17	2117.08	18/09/17	2117.08
			10/11/17	1510.30	14/11/17	1510.30
			13/12/17	1812.57	18/12/17	1812.57
			08/01/18	3171.62	12/01/18	3171.62
			12/01/18	2502.26	19/01/18	2502.26
Hon. to CCH	01/05/17	1483.48	19/07/17	724.44	24/07/17	724.44
	28/12/17	3557.28	14/09/17	724.29	18/09/17	724.29
			10/11/17	724.29	14/11/17	724.13
			13/12/17	724.13	18/12/17	724.13
			08/01/18	724.13	12/01/18	1448.26
			12/01/18	1448.26		

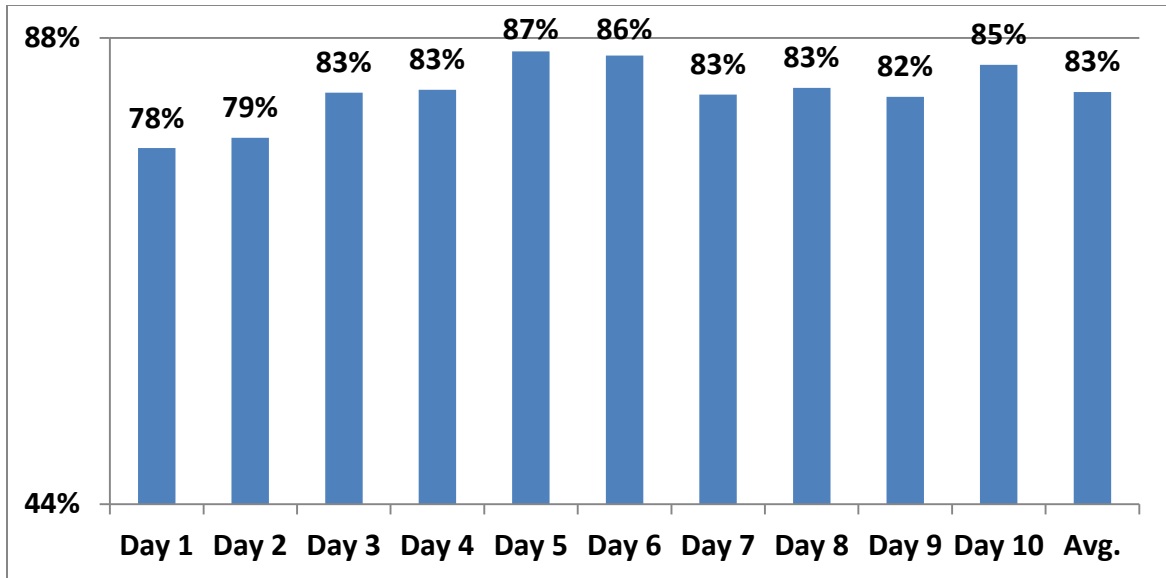
				1428.59	19/01/18	1428.59
Transportation Asst.	01/05/17 28/12/17	85.40 97.60	-	-	-	-
MME	01/05/17 28/12/17	71.03 97.79	19/07/17 14/09/17 13/12/17 08/01/18 12/01/18	57.17 55.83 41.04 41.04 22.81	-	-
Kitchen-cum-store	0	0	0	0	0	0
Kitchen Devices	0	0	0	0	0	0

It would be observed from the above information that there was delay in the release of funds by the State to the implementing agencies. The Joint Review Mission observed during its visit to the schools that almost all the schools had negative balance of cooking cost due to the delay in the release of funds. The maximum negative balance of Rs.1.31 lakh was reported by Devi Sahai S.D. Senior Secondary School in Jallandhar. The negative balance in other schools ranged from Rs.3,000 to Rs.50,000/-. The teacher informed that they have been implementing the scheme by purchasing MDM ingredients from their own resources or by taking credit from the shopkeepers.

JRM recommends that fund flow system may be streamlined for ensuring that all schools get funds in time and teachers do not have invest their money for MDM or take credit from the shopkeepers.

4.2. Review of the coverage of the scheme

The Review Mission visited 43 schools from 22nd to 25th January, 2018. The cumulative enrolment in these schools was 5931 against which 4917 (83%) children availed the mid day meal on an average on daily basis. Six schools had average attendance below 75%. Five of these schools were in Jallandhar district. These schools are Government Primary School at Garha and Verala; Arya Kanya Primary and Upper Primary schools and Government Girls High School, West Jallandhar. Only one school namely Government Senior Secondary School, Nangal had less than 75% average attendance against enrolment. The day wise average students availing MDM in the visited schools in both the districts is given below:



The JRM recommends that special focus may be given to six schools having average attendance of less than 75% so as to increase attendance against enrolment in these schools.

The JRM observed that attendance against enrolment in nine schools was between 90% to 95%. They are Government Primary School, Sabhowal; Government Senior Secondary School, Wadala; Government Primary Schools, Kaki Pind; Government Middle School, Pathreri Kalan; Government Upper Primary School, Pathereri Kalan; Government Upper Primary School, Bulsanda, Government Primary School, Bulsanda; Government High School, Daroli and Government Adarsh Senior Secondary School, Lodhipur.

Four schools namely Government Middle School, Dhulchin; Government High School, Kalitran; Government Primary School, Kalitran and Government Primary School, Daroli had average attendance between 96% to 98%.

JRM recommends that schools with less than 80% average attendance may be given monitored regularly for improving their attendance against enrolment.

4.3 Review of the Management structure

Review the availability of Management Structure at State, District, Block level

Level	No. of regular personnel		No. of contractual personnel	
	Required	Deployed	Required	Engaged.
State	NIL	NIL	13	7

District	NIL	NIL	66	42
Block	NIL	NIL	216	97
Total	Nil	Nil	295	146

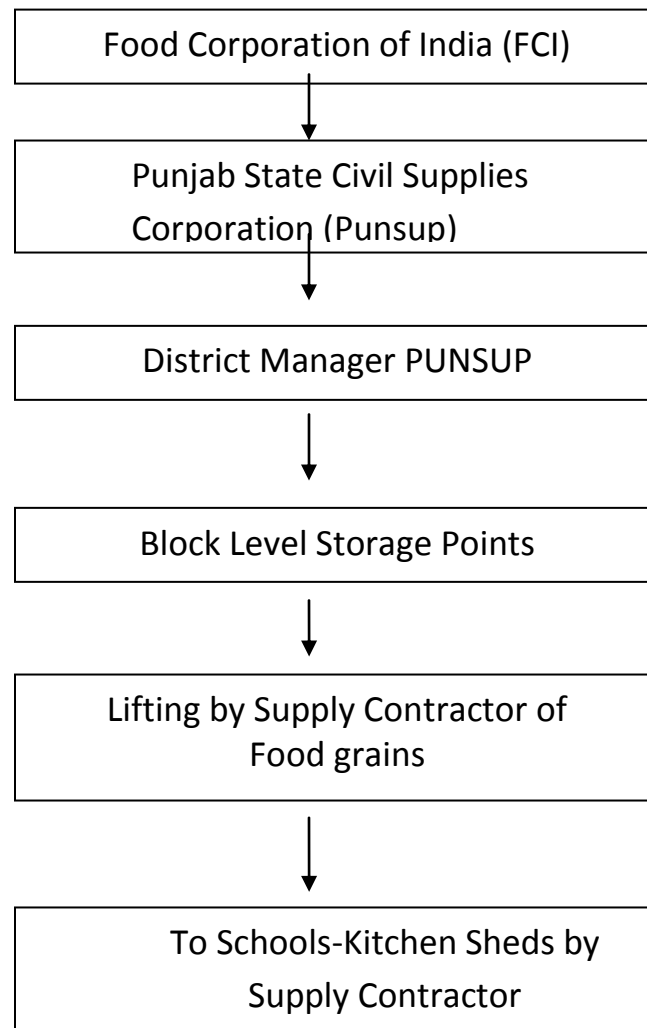
It would be observed from the above table that only 146 personnel have been engaged on contract basis against the requirement of 295 for the monitoring of the scheme at State, District and Block level. It was informed that consequent upon the change in the the funding pattern of Mid Day Meal Scheme from 75:25 to 60:40 for the States other than NER States and 3 Himalayan States, the allocation for MME has been reduced because MME is allocated @ 2% of the recurring cost for the food grains, cooking cost, honorarium to Cook-cum-helpers and transport assistance. As a result of reduced allocation for MME, the State is unable to engage contractual manpower required for monitoring and super vision of the scheme. It was suggested that the norms for MME assistance may be revised upward from 2% of the recurring cost to 3%.

The Joint Review Mission observed that schools were being inspected regularly on monthly basis by the Cluster/Block Resource Coordinators. The District officers also inspected the schools four to six times in a year. The District Level Committee (DLC) under the Chairpersonship of senior most Member of Parliament and District Level Monitoring Committee (DLMC) under the chairpersonship of District Magistrate also monitors the implementation of the scheme. Two meetings of .DLC have been held each in Jalandhar and Ropal Districts whereas 6 and 8 meetings of DLMC have been held till December, 2017 in Jalandhar and Roopnagar respectively.

The Community also monitors the preparation and serving of the mid day meal. They taste the meal also. JRM met the members of the School Management Committee and Parents of the children in the schools. It was observed from the Taste register that one or two parents tasted the meal every day and record their observations on the quality of mid day meal.

4.4 Review the delivery mechanism of food grains from State to Schools

The Food Corporation of India (FCI) supplies Fair Average Quality (FAQ) food grains under Mid Day Meal Scheme. The Punjab State Civil Supplies Corporation (PUNSUP) is the lifting agency for the food grains from FCI's depot. The food grain is delivered to the schools by the lifting agency through the Public Distribution System (PDS).



Punsup lift the foodgrain from FCI Godowns and deliver to schools as per requirement submitted by district personnel. After receiving the foodgrains at schools level the foodgrains are stored in storage bins provided in each school.

The JRM observed that negative balance of food grains in six schools viz. Government Adarsh, Senior Secondary School, Lodhipur; Government High School, Daroli, Government High School, Kalitran; Government Primary School, Pathreri Jatan, Government Primary as well as Upper Primary Schools, Balsanda. The teachers informed that Mid Day Meal Scheme was implemented by taking food grain from the neighboring schools or the market. The food grain taken on loan by these schools was returned on receipt of food grain supply from the PUNSUP. Other schools had sufficient buffer stock of food grains.

The JRM suggests that the food grain supply management may be streamlined so as to ensure timely availability of food grain in all the schools.

4.5. Review the smooth implementation of the Scheme with particular reference to Interruptions.

JRM team did not observe any interruption in the mid day meal during 2017.

4.6. Review the Creation of Capital Assets

Component	Sanctioned	Constructed / Procured	Yet to construct / procure
Kitchen-cum-store	18969	18969	-
Kitchen devices (New)	18969	18969	-
Kitchen devices (Replacement)	18969	10317	8652

4.7 Construction of Kitchen-cum-stores

Non-recurring central assistance of Rs. 11659.00 lakh was released from 2006-07 to 2016-17 for the construction of 18959 kitchen-cum-stores in Punjab. The State has fully utilized the non recurring central assistance for construction of 18959 kitchen-cum-stores. The JRM observed that all the visited schools had kitchen-cum-stores for cooking of mid day meal in safe and hygienic conditions.

4.8. Procurement/Replacement of Kitchen Devices

As per the information submitted by the State in its Annual Work Plan & Budget 2017-18, the mid day meal is to be implemented in 20246 schools. However, the

State asked for non-recurring central assistance for kitchen devices for 18959 schools. Accordingly central assistance of Rs.947.95 lakh was released to the State from 2006-07 to 2016-17 for the procurement of kitchen devices for 18959 schools.

As per MDM guidelines, non recurring central assistance is admissible to all the schools for procuring cooking utensils and serving devices under Mid Day Meal Scheme. Thus, kitchen devices can be provided to additional 1287 (20246-18959) schools. The State may consider providing kitchen devices to these 1287 schools if they have not been provided kitchen devices either through convergence or from its own resources.

The JRM found that all the schools had adequate number of cooking and serving utensils as well as eating plates. The State has also been sanctioned central assistance for the replacement of 18959 schools out of which kitchen devices are yet to be replaced in 8652 schools. The kitchen devices may be replaced in these schools immediately.

4.9 Review the involvement of NGO's/Trust/Centralized kitchens in the Scheme

As per Mid Day Meal Guidelines, 2006 the States may set up Centralised Kitchens in urban areas which have space constraints for construction of kitchen-cum-stores. NGO's are engaged by district authorities through tender process. The renewal of contract of NGOs is subject to the satisfactory performance of the concerned NGO,. Normally, distance between the farthest school and centralized kitchen-shed is not more than 25-30 kms. Maximum time for such a distant place is about 1 to 1.5/2 hours.

The NGO's have been engaged in Amritsar, Bhatinda, Nawan Shahar, Patiala, SBS Nagar (Mohali). The JRM could not visit any Centralised Kitchen because both Jalandhar and Roopnagar districts do not have any Centralized Kitchen. The Centralised kitchen in SBS Nagar could not be visited because it was closed due to holiday.

4.10 Review the payment of Cost of Food grains to Food Corporation of India

The food grain is supplied to the States under Mid Day Meal by Food Corporation of India (FCI). The payment of cost of food grain has been decentralized at district level w.e.f. 1st April, 2010.

Jalandhar district has made a payment of Rs.47.15 lakh to FCI towards the cost of food grains against the bills for the same amount. However, Roopnagar has made payment of Rs.20.19 lakh towards the cost of food grains to FCI against the bills for Rs. 27.46 lakh.

As per MDM guidelines, the State/district is required to make payment of all the bills received from FCI within 20 days from the date of their receipt. Therefore, Roopnagar district may be advised to adhere to these guidelines and make payment of the pending FCI bills.

4.11 Review the convening the meetings of District Level Committee under Chairpersonship of senior most Member of Parliament.(LS)

The MDM guidelines provides for monitoring structures at various levels for monitoring and supervision of the scheme. The MHRD has constituted a District level committee under the chairpersonship of the senior most Member of Parliament (Lok Sabha) in the district. The committee is supposed to meet at least once in a quarter. As per the information provided by the district authorities two meeting of this committee has taken place in district Jalandhar as well as Roopnagar district up to December, 2017. Similarly, 6 and 8 meetings of the District Level Monitoring Committee under the chairpersonship of District Magistrate have been held in Jalandhar and Roopnagar till December, 2017.

JRM recommends that quarterly meetings of the DLC and monthly meetings of DLMC may be held regularly.

4.12 Review the Management Information System (MIS)

Web-enabled Management Information System for Mid Day Meal (MIS-MDM) was launched in June, 2012 for monitoring of the scheme. The States are

required to make monthly as well as annual data entries in the MIS-MDM. The State has made 100% monthly data entries. However, 97% annual data entries have been made in the said portal. The State may make entries for the remaining schools also.

4.13 Review the implementation of Automated Monitoring System

The Automated Monitoring System (AMS) for real time monitoring of Mid Day Meal Scheme, however out of 19932 schools, the data is being reported from only 7022 schools i.e. 35.23 % as on 16-01-2018. JRM was informed that the less reporting in AMS was due to certain administrative reasons which have since been sorted out and teachers have now started submitting daily information under AMS about the number of children who availed the mid day meal on a particular day. JRM team personally saw the reporting under AMS on day of visit.

JRM would recommend that the State may ensure daily reporting of MDM beneficiaries through AMS on the central server in respect of all States.

4.14 Convergence with Rastriya Bal Swasthya Karyakram for health check-up, supplementation of micronutrients under WIFS & deworming medicine under National deworming day and health checkups and supply of spectacles to children suffering from refractive errors.

Mid Day Meal Guidelines envisage health check up of the students through Rashtriya Bal Swasthya Karyakaram (RBSK) under National Health Mission of the Ministry of Health & Family Welfare. The Department of School Education, Government of Punjab nominated the Deputy District Education Officers for monitoring of health check ups of school children through RBSK. The medical teams have been conducting the health check up of the children in all the schools during 2017 and also vaccinated the children against tetanus. Iron Folic Acid capsules and de-worming tablets were also distributed to the children. The children with refractive errors were also given spectacles. However, School Health Cards (SHC) of the students were not kept by the schools except in two visited schools namely Government Primary School and Government High

School, Daroli. But these SHCs were available for few children and not for all the enrolled children. The Headmasters/Principals of the schools informed that Health authorities had taken the SHCs with them.

The State may like to discuss with the Health Department about the custody of the SHCs.

4.15 Review the following

a) Operationalization of Mid-Day Meal Rules, 2015

The State Government has operationalised the Mid Day Meal Rules, 2015 to all the district authorities with the direction to comply with these rules in letter and spirit. It was observed by JRM team that all the schools were implementing the mid day meal scheme without any interruption in compliance with the MDM Rules, 2015.

b) Dissemination of Food Safety Guidelines up to District, Block and School

The Food Safety Guidelines issued by the Department of School Education & Literacy have been disseminated to all the concerned authorities. The ambience in the school was very hygienic on the day of the visit by JRM. Adequate safety measures were seen to be followed by the schools while preparing mid day meal.

c) Enrolment of children and Cook-cum-Helpers under Aadhaar

Department of School Education & Literacy has advised all States/UTs in February, 2017 for enrolment of the school children under Aadhaar. The last date for enrolment under Aadhaar has been extended up to 31st March, 2018.

The information on the status of enrolment under Aadhaar as on 31st December, 2017 is given as under:

Level	Enrolment	Aadhar enrolled	%
State	1712841	1662534	97
District			
i) Jalandhar	120306	113930	95
ii) Roopnagar	43744	42081	96

All the 3067 and 1453 CCHs in Jalandhar and Roopnagar districts are enrolled under Aadhaar.

Joint Review Mission recommends that the remaining children may also be enrolled under Aadhaar before or by 31st March, 2017

d) Payment of Honorarium to Cook-cum-Helpers

State has released Rs.426.77 lakh to Jalandhar district for payment of honorarium to Cook-cum-helpers. The district has utilised Rs.386.63 lakh till 31st December, 2017. Similarly, Roopnagar district has utilised Rs.182.78 lakh against the Rs.183.16 lakh released to it. At the State level also the utilisation is Rs.5319.50 lakh against the receipt of Rs.8406.33 lakh.

The JRM observed that honorarium is not being paid to the CCHs on monthly basis. The honorarium for two to three months is paid by the districts. Since the CCHs belong to socio-economically challenged segment of the society, monthly e-payment in to their bank account may be made.

e) System of Storage food grains and other ingredients

The State has provided 2-3 Storage bins to each school from the funds raised through the auction of gunny bags. The JRM noticed the presence of storage bins in the visited schools. The other MDM ingredients such as pulses, condiments etc.were also stored in the moisture free containers and stacked properly.

f) Role of Teachers in Mid-Day Meal Scheme.

As per the MDM guidelines, the role of the teacher is to organize, supervise and ensure that the mid day meal is served in an orderly manner. The JRM interacted with the teachers in the visited schools. Almost all the teachers informed that they are able keep the MDM record within the free period of school because Cook-cum-Helpers are responsible for cooking and serving the mid day meal. This has relieved them for attending to their teaching and learning activities. Tasting of MDM by Teacher, Parents and Community.

g) Testing of meals

The Mid Day Meal Rules, 2015 envisage that randomly selected food samples by the State Food & Drugs Department would be sent for testing of quality as well as quantity of meals. As per the information submitted in the AWP&B-2017-18, 68 food samples were got tested from the accredited labs and all of them were found to be conforming to the prescribed nutrition norms. The JRM could not get information from any of the visited schools about the food samples having been collected by the State Food & Drugs Department for testing by accredited Labs. The State may ensure that provisions of MDM Rules, 2015 are complied by sending randomly selected samples to the accredited labs for testing.

h) Involvement of Community

The Community been associated under Mid Day Meal Scheme Preeti Bhojan which has been started on the concept of Tithi Bhojan under which additional food items such as sweets, fruits etc. are distributed to the school children to celebrate on important occasion in the family such as birthday, marriage, success in the examination etc. JRM team observed during its visit to one of the schools in Roopnagar district that fruits were being distributed to the students in Government Primary School, Daroli, Roopnagar district by a family in the village. Mr. Lakhwinder Singh Lakha, a resident in Garha village, makes cash and kind contributions for providing books, uniforms, sweaters,

shoes etc. to the needy students. The entire cost land filling and earth work in Government Primary School was borne by him from his own resources. A family of NRIs in village is also contributing in cash and kind for the school. On the day of visit, they had arranged distribution of 400 shoes, Uniform Belts, sweaters to the school children. Community contribution was noticed in Government High School, Daroli (Eating Plates); Government Primary School, Kalitran (RO Unit); Government Senior Secondary School, Nangal (Water Cooler, Rs 64,000 by Teachers); Government High School, Kalitran (Water Cooler & School Gate), Government Primary School, Kaki Pind (Water Cooler, Water Filter and Plantation); Government Senior Secondary School, Behrampur Zamindara (R.O.Unit); Government High School, Goslan (Rs.1.5 lakh by teachers and villagers for leveling and cementing the ground) ;Government Middle School, Dulchi Majra (Winter Uniform); Government Primary School, Pathreri Jatan (Water Cooler, Water Filter; 70-80 trollies of soil for leveling the ground), Government Primary School, Behrampur (RO) and Government Middle School, Rangilpur (RO). Ms. Neelam, a teacher in Government High School, Kalitran has contributed Rs.1.70 lakh from her resources for the kitchen shed in the school. Mr. Pradeep Kumar, a teacher in the Government High School has set a kitchen garden in the school and planted fruit bearing plants such as Gauva, Mango, Spota, Lemon, Jamun etc. He may be utilised as a resource person for motivating other schools for setting up of Kitchen gardens.

i) Bank Account of Cook-cum-helpers

All the 42560 cook-cum-helpers engaged under Mid Day Meal Scheme have their bank accounts and their honorarium is being e-transferred in their bank accounts.

j) Awareness of the Scheme

The schools had displayed the daily menu, food grain stock availability, enrolment and attendance, logo in most of the schools. However, JRM

observed that daily menu had not been displayed in three schools viz. Government Middle School; Government Secondary School, Nangal Township and Government Girls Secondary School, Nangal. Logo had not been displayed in Arya Kanya Primary as well as Upper Primary Schools in Jalandhar district; Government Primary and Senior Secondary School, Behrampur Zamindara; Government Primary and Upper Primary as well as Middle School, Pathreri Jatan; Government Primary School, Pathanda; Government Primary and Senior Secondary Schools in Naya Nangal, Nangal and Nangal Township; The Teacher In-charge of MDM and Government Adarsh Public school, Lodhipur in Roopnagar districts. Cook-cum-Helpers were aware of the food norms for primary and upper primary stage children.

k) Contingency Plan

The important telephone Nos. of the Hospitals, near Primary Health Centre , Ambulance, Police, Home Guards etc. were displayed prominently in almost all the schools.

The Fire Extinguishers were available in the schools except in Government Senior Secondary School, Behrampur and Government Senior Secondary School, Nangal Town, for putting off fire in case of any eventuality. However, there was no contingency plan in Government Girls Senior Secondary School, Nangal; Government High School, Kalitran and Government Senior Secondary School, Nangal.

CHAPTER: 5

Nutritional and Anthropometric Assessment

Observations and Findings

Food intake of School children through Mid Day Meal

The daily menu during the week being served in both the districts was:

Days	Menu served
Monday	Dal, Roti
Tuesday	Dal, Rice, Kheer
Wednesday	Kala channa, Roti
Thursday	Kadhi with pakora, Rice
Friday	Seasonal vegetable, Roti
Saturday	Dal, Rice

Observation: Menu of MDM was displayed in most of the Schools, outside or inside the kitchen. Logo of MDM was missing in most of the schools. In some menus, rice, dal and vegetables is written while in some schools, type of dal was also mentioned for different days. In few schools, name of the seasonal vegetable was written but in other, proper name of the vegetable was written. But it was clear that the children were getting dal, rice and vegetables. However, type of dal was changed. Vegetables used were mostly potatoes, tomatoes, bottle gourd (Lauki), onion and sometimes spinach. There was generally no variations in the menu.

In almost all the schools, sabutmung, urd, channa, moth, channa and split urd and mung-massari dal were prepared. Only in one school, soy nuggets were being used. Otherwise children did not like soy dal in rest of the schools. In the dal, they were adding palak, ghia, carrot in few etc and seasoning was done with onion, tomato, ginger, garlic and coriander leaves. Most of the children told they did not like the dal when ghia was added in that. Except 2-3 schools, children did not like khichdi.

The most acceptable meal was kadhi-pakoda with rice in all the schools in both the districts. It was the favourite dish of 100 percent of the children. Almost all the children liked kalachanna and rice very much also. Kheer was also liked very much by all the children in the visited schools. Kheer was served on Tuesday, Thursday or Saturday i.e. the day when rice was also served. Children and teachers both reported that they did not like kheer to be served together. JRM members also found it not to be correct as it makes the menu monotonous and colourless while this trend was similar in both the districts. JRM recommends that kheer should be served on any day when roti is being served. However, it was not must that attendance of the children on a particular day shall be more when they have the choicest meal on a day.

Another choice of children was rice with rajmah curry or white channa curry. This choice should be added in the menu when dal-rice are to be served. The attendance of children in all the schools of District Roopnagar was more than that of school children of District Jalandhar when the team visited there.

In all the kitchens, double fortified salt was being used and it was kept in air tight containers. The source of cooking oil was mustard, rice bran, soybean or cottonseed. In Roopnagar district, mostly cottonseed oil is being used while in Jalandhar district, it was mustard oil. In one school, they were using saffola gold too. Our recommendation is that they should not use the same oil continuously but should change the source of oil every month or use blend of oils.

Another recommendation is that schools should develop their own kitchen gardens where seasonal vegetables and fruits should be grown for consumption by the children in MDM. Few visited schools (3-4) in Roopnagar district had developed kitchen gardens, one had papaya tree too in the school premises.

Cooked food was kept covered in almost all the schools. One hundred percent of the schools provided thalis, spoons and glasses to the children while in a few primary schools, spoons and glasses were not there and children were bringing spoons from their homes. Multi taps were for drinking water as well as for washing utensils at

separate place by cooks. Presence of detergent for cleaning utensils was found everywhere.

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Generally, tap water supply was there in the kitchen except at few places where cooks were storing water for cooking and they were keeping the steel buckets well covered.

Actual intake vs. Food Norms of MDM

The average cereal intake of the primary school children of visited schools was 96.8g/day as against the stipulated MDM nutrition norms of 100g/day, while among upper primary school children, it was 106g/day as against 150g/day. The consumption of pulses and vegetables among both the group children was more or less adequate (**Table 1**). The intake of fats and oils was less. Similarly intake of milk used in kheer preparation was less which should be increased.

Table 1 Average intake of Foodstuffs (g/student/day) by school children through mid day meal: Institutional diet surveys

Items	Primary Children		Upper Primary Children	
	MDM Norms (g)	Actual Intake (g)	MDM Norms (g)	Actual Intake (g)
Cereals (Rice)	100	96.8	150	106
Pulses (lentils, soya, Bengal gram)	20	18.5	30	26.8
Oils (Mustard Oil)	5	3.5	7.5	5.26
Vegetables	50	27	75	26.8

Nutrient intake of School children through Mid Day Meal

The prescribed norms of energy and protein to be provided is as follows:

450 kcal and 12g of protein which is derived from 100 g of food grains (rice/wheat), 20g of pulses, 50g of vegetables and 5g of oil for children studying in primary classes, while 700 Kcal and 20g of protein, which is derived from 150g of food grains (rice/wheat), 30g of pulses, 75g of vegetables and 7.5g of oil in upper primary classes.

JRM observed that the intake of energy (about 364.6 Kcal/student/day) was inadequate when compared to MDM nutrition norms while protein (about 13.03 g/student/day) intake through mid day meal was adequate among primary school children according to the MDM nutrition norms (energy: 450 Kcal; protein: 12g). The energy and protein consumption of upper primary school children was about 411.64 Kcal/student/day and 15.7 g/student/day, which is inadequate as per the MDM nutrition norms. Energy intake was quite deficit due to less cereal intake by them. Energy intake of children was also less due to less fat intake.

Table 2: Average intake of nutrients by school children through MDM

Nutrients	Norms for MDM		Average intake	
	PS	UPS	PS	UPS
Energy (Kcal)	500	700	364.6	411.64
Protein (g)	12	15-18 g	13.03	15.7
Fat (g)	5	7.5 g	3.5	5.26

Sensory evaluation of MDM meal

The organoleptic quality of MDM was also assessed by sensory evaluation. The parameters included appearance of meal, colour, odour, texture, taste and overall palatability of recipes prepared as a part of MDM. The evaluation was carried out on the school site by MDM team using 9-point Hedonic rating test. The students were also asked about their likings and disliking of various meals served to them throughout the

week. Majority of the students (90-99%) stated that the meal appearance, colour, odour, texture, taste and overall palatability were either good or very good.

Table 3: Level of satisfaction of school children (class 6th to 8th) about the food stuffs served in MDM

Menu	Level of Satisfaction	Food stuffs served (N=50)		
		Roti/Rice	Sabji	Dal
Appearance	Good	100	100	100
	Satisfactory	-	-	-
Colour	Good	94	88	97
	Satisfactory	6	2	3
Odour/Aroma	Good	94	92	95
	Satisfactory	6	8	5
Texture	Good	97	87	90
		3	13	10
Taste	Good \good	96	89	98
	Satisfactory	4	11	2
Overall Palatability	Good	95	87	94
	Satisfactory	5	13	6

III. Knowledge and practices of students, parents and functionaries about MDM and hygienepactices

a) Knowledge and practices of students about MDM and hygienepactices

Almost all the students (100%) stated that the served quantity of mid day meal was sufficient to meet their hunger and had full knowledge about daily menu of MDM. KaddiChawal followed by kheer were hot favorite among all children. Some of the boys in middle school were found to be consuming more than required quantity of meal due to their growing body needs and activity level. Children in Jalandhar were found to be fond of rice whereas roti was more in demand in case of children of Roopnagar where

Punjabi population was in large number. Offering prayers and cleaning hands and plates were witnessed in just 10% of schools.

Table 4: Hygiene Practices of Students in two districts of Punjab

S. No	About MDM	Per cent
1	Sufficiency of food served	100
2.	Knowledge about MDM menu	70
3.	Satisfied with the MDM menu	100
4.	Hand wash practice before taking the food	30
5.	Washing of plates and glasses before taking the food	10
6.	Hand washing after defecation	60
7.	Regular nail cutting	70
8.	Brushing teeth with Brush	50
9.	Daily bathing	60
10.	Wearing washed clothes daily	70

b) Knowledge and perceptions of parents of School children about MDM

100 parents of the children were interviewed for their knowledge and perceptions about MDM programme in different schools of Jalandhar and Roopnagar. A large majority of them were migratory labourers from Bihar and U.P. in Jalandhar Distt. whereas majority of them were labourers in agricultural farms and brick kiln in Roopnagar. It was heartening to find that all found this scheme completely beneficial from health point of view and increased attendance in schools. A large majority of them were not able to provide three meals to their children largely due to poverty and to some extent due to their heavy work demands and schedule. All expressed total satisfaction on the part of their children on account of taste and quantity of MDM.

Table 5: Knowledge and perceptions of parents about MDM programme-Punjab

Variables		Jalandhar (n=50) %	Roopnagar (n=50) %	Pooled (n=100) %
Educational Qualifications of parents	Illiterate	5	45	25
	Primary	70	55	62.50
	Secondary	25	0	12.50
	Higher secondary	0	0	0
	Intermediate	0	0	0
	Graduation and above	0	0	0
MDM beneficial to children				
Beneficial effects of MDM	Increase Enrollment	50	57	53.5
	Increase attendance	100	100	100
	Reduce school dropout	0	0	0
	Improves Health & Nutritional status	100	100	100
	Provides additional food	0	0	0
	Improves Scholastic performance	0	0	0
Child participating in MDM		100	100	100
Child like the taste of MDM		100	100	100
Quantity of food adequate		100	100	100
No of meals child takes at home	2	70	67	68.5
	3	30	33	31.5
	4			
Changes observed in their child as beneficiary of MDM	Nutritional status improved	40	36	38
	Health status improved	80	78	79
	Regularly going to school	40	45	42.50
	Improvement in scholastic performance	10	12	12
	No change	0	0	0
School Monitoring committee to supervise MDM				
	No changes required	100	100	100
	Regular supply of food	0	0	0
	Improve quality (include milk & fruits)	10	11	10.5

Suggestions to strengthen the MDM programme	Increase quantity	0	0	0
	Change the menu	0	0	0
	Others (programme should be continued, extended up to 10 th class and add seasonal fruits,	10	12	11

c) Knowledge and perceptions of Teachers/ MDM In-charges on the programme of one teacher/MDM Centre In charge of each school visited

In-depth interviews were conducted on 40 teachers/MDM Center In-charges about their knowledge, perceptions and practices about MDM programme. The age of these functionaries was ranging from 30-52 years. More than half of teachers were postgraduates and had completed B.Ed and about 17% were intermediates. All the teachers were aware of just one objective of MDM scheme, could not find anyone who knew all the objectives. As per the report of functionaries, all the schools were serving rice, roti, dal, kaddi, black chana with potatoes and kheer on rotation as per the schedule given to them. All the schools had served mid day meal for all the working days. They never let it stop on anyday irrespective of delay in supply of food grains and funds. They told that the information about the number of beneficiaries of MDM was given everyday without failure using the APP to Worthy Education Secretary Punjab Sh. Krishan Kant, IAS.

As per the report of teachers/MDM in-charges, about all the surveyed schools were supervised around once in 2 months by Asstt. Block manager /Block Primary Education Officer/inspectors. The important activities carried out during supervisory visit were verification of records, checking of MDM food and hygiene. Irregular supply of foodgrains and grant of funds were reported were the main hurdles in the scheme.

Majority of these functionaries suggested that regular supply of food grains, regular grants of funds, increased honorarium for cook-cum-helpers and separate staff for MDM can enhance the effectiveness of the scheme. A large number of teachers/in-charges of MDM complained that majority of their time was spent on MDM programme and were unable to spend time on teaching activity.

Table 6: Knowledge and perceptions of teachers/In-charges of MDM-Punjab

Variables		Jalandh ar (n= 20)	Roopnag ar (n= 20)	Poole d (n=40)
Education	Intermediate	18	19	17
	Inter & TTC	4	7	5.5
	Graduate	9	5	7
	Graduate &B.Ed	19	24	22
	PG & B. Ed	50	45	47.5
Objectives of MDM	All objectives	0	0	0
	At least 4 objectives	0	0	0
	At least 3 objectives	0	0	0
	At least 2 objectives	25	25	25
	At least 1 objective	100	100	100
Supervision by	Inspector			
	Asstt. Block Manager/Block Primary education Officer	100	100	100
	DEO	10	15	12.25
	Local committee	30	25	27.5
	Others (CRP)			
Activities undertaken during supervision	Verification of records	100	100	100
	Identify problems & solve it	0	0	0
	Community mobilization	0	0	0
	Check hygiene	50	40	45
	Check cooked foods	30	36	33
	Others (stock, attendance)	0	0	0
	Irregularity in food supply	100	100	100

Reasons for improper supply of MDM	Problem of transport	0	0	0
	Problem of cook	0	0	0
	Inadequate contingency	0	0	
	Inferior quality of foods	0	0	
	Irregular supply of LPG	0	25	
Suggestions	Regular supply of food grains		100	
	Increase contingency	100	25	
	Change menu	100	0	
	Others (Seasonal fruit, Increase honorarium for cook, foods rotation)	30	20	
Supply of food grains	Daily	0	0	
	Monthly	0	0	
	Quarterly	100	100	
School health programme is in operation	Monthly	0	0	
	Quarterly	0	0	
	Half yearly	0	10	
	Others	100	100	
Total children covered				
Total children attended on the day of survey				
Availed MDM		100	100	100

d) Knowledge and perceptions of Supervisory Functionaries of MDMprogramme

In-depth interviews were also conducted on 14 MDM Supervisory functionaries (2 DEO, 2 DDEO of MDM, and 10 ABMs) for assessing their knowledge and perceptions

about MDM programme. Majority of them were postgraduates. Surprisingly and sadly, no one was aware of all the objectives of MDM. However, most of them were aware of one and maximum 2 objectives of MDM. Most of ABMs were visiting the centers regularly at least once in 2 months and were submitting their reports to the respective head departments. During their supervision and monitoring visits, most of them were verifying records and checking hygiene and cooked food. Only half of the functionaries were aware of the correct ration of cereals to be given to each MDM beneficiary, while only one fifth were aware of the amount of pulses to be given to the beneficiary. Only negligible proportion of the functionaries were aware of the amount of oil and vegetables to be given to each beneficiary. Most of the functionaries suggested increase in contingency amount, increased salary of cook cum helper, regular supply of food grains as needed measures to increase effectiveness of the scheme.

Table 7: Knowledge and Perceptions of supervisory level functionaries-Punjab

Particulars	N=14	%
	Graduate	20
	Post Graduate	80
Objectives	All objectives	0
	At least 4 objectives	
	At least 3 objectives	0
	At least 2 objectives	80
	At least 1 objective	100
Activities during supervision	Verification of records	100
	Identify problems & solve it	0
	Check hygiene	80
	Check cooked foods	0
	Others (stock, attendance)	0

Measures of assessment of success of MDM	Improve nutritional % health status of children	0
	Improve enrollment and attendance of children	70
	Decrease drop out	0
	Increased scholastic performance	0
Suggestions	Increase the cooking cost	60
	Increase LPG supply	0
	Training for cooks	0
	Timely release of funds	0
	Increase the cooks salary	70

Table 8: Knowledge about MDM nutrition norms of supervisory level of functionaries of Punjab

Particulars	Correct responses							
	Cereals		pulses		Oil s		Vegetables	
MDM norm	g	%	g	%	ml	%	g	%
Primary	100	Yes/No	20	Yes/No	5	Yes/No	50	Yes/No
Upper primary	150	Yes/No	30		7.5	Yes/No	75	Yes/No

e) Observation of cooking process and availability of infrastructure in each school

In about all the schools visited, the quality of rice, dal, black gram, oil and was good. All were using iodized salt. Majority of the cook-cum-helpers were carrying out sieving of raw rice, washing, cooking with lid before cooking of rice and dal. Nowhere kanji was discarded while cooking of rice. In majority of schools, separate kitchen building was available. Chulah was found to be under sheltered place. In a large majority of schools, the cooking utensils were adequate. In few schools, spoons and glasses were found to

be inadequate in number. In majority of schools, the firewood and LPG both were used as cooking fuel. In almost all the schools, drinking water facility was available. In one third of schools, children were drinking water directly from the tap/ submersible pump. In about three fourths of schools, the store room ventilation was satisfactory and grains were found in tin/plastic drums.

Table 9: Observation JRM team regarding cooking process on the day of visit to the schools and availability of infrastructure in Punjab

Food Stuffs	Particulars		Percentage
	N= 40		
Rice	Quality	Good	Good
		Satisfactory	
	Sieving (Cleaning)		100
	Washing before cooking		100
	Removal <i>Kanji</i>		0
	Cooking with lid		100
Dhal	Quality	Good	Good
		Satisfactory	
	Sieving (Cleaning)		10
	Washing before cooking		100
	Cooking with lid		100
Vegetables	Quality	Good	Good
		Satisfactory	
	Washing before cooking		0
	Washing after cutting		100
	Cooking with lid		100
	Cutting in to big pieces		15
Hand washing of cooks before cooking the food			
Kitchen facility at the school	Open		0
	Closed		100

Washing of vessels before cooking	100
Cooking with lid	100
Sufficiency of vessels for cooking	90

Nutritional Assessment of School Children taking MDM

I. Daily meal pattern of Children

The meal pattern of all the children in both the districts was evaluated and presented in Table 4. The total meals taken by the children were 3 or 4 that included the MDM. The other meals being breakfast, lunch, evening snack/meal and dinner. General observations about the meal pattern are as follows:

Table 10: Daily meal pattern of upper primary children

Meal Item		% consumption by children
Breakfast (only about 60 percent of the children were taking breakfast i.e. roti/parantha with tea mainly)	Tea	60
	Roti (1 to 2)	60%
	Veg	36
	Dal	10
	Rice	0
	Milk	8
	Khichdi	0
	Other	-
Mid Morning (MDM)	Rice	As per MDM Menu
	Dal	
	Veg	
	Khichdi	
	Other	
	Rice	20

Lunch (only 60 % of upper primary school children took lunch at home while rest were not taking anything in the afternoon after taking MDM).	Tea	0
	Dal	0
	Roti (1 to 4)	40
	Veg	60
	Milk	0
	Khichdi	0
	Other	0
Evening	Roti (1 to 4)	0
	Tea	90
	Rice	0
	Veg	0
	Dal	0
	Milk	18
	Khichdi	0
	Other	Namkeen, biscuits etc.
Dinner	Tea	0
	Rice	45
	Dal	79
	Roti (1 to 4)	55
	Veg	21
	Milk	0
	Khichdi	0
	Other	0

There were a few children who used to come to school empty stomach and the MDM was their first meal. Only 46 percent of children had vegetable or dal along with roti in the morning. Most of the children were taking 3 meals per day that is breakfast, evening

tea and dinner at home besides MDM. It is unfortunate that 40 percent of the children were coming to schools without any breakfast.

Consumption of fresh fruits was not reported by majority of the children. The meal pattern is likely to vary with changing school timing.

Breakfast

Items consumed uniformly by all the children in the morning was roti/Parantha, vegetable, dal and other items like biscuit and Maggie. Almost 60% of the children reported consuming tea before coming to school. Majority of the children took 1 roti/parantha for breakfast, along with vegetable or dal. About 8 percent of the children had milk for breakfast.

Lunch

Only 60 % of upper primary school children took lunch at home while rest were not taking anything in the afternoon after taking MDM. Majority of the children consumed roti on returning home along with vegetable (60). Few children (20%) reported consuming rice.

Evening

This meal time appears to be optional for many children. Most of the children used to take tea (90 %) while few children reported having by other items (35%) i.e.snacks.

Dinner

More number of children were taking roti than rice with dal at dinner time. Milk consumption was nil.

Matters of concern from this investigation are as follows:

Milk is consumed by a very small number of the children surveyed. Fruit consumption was almost absent from the diet of the children. Most of the children consumed only one to two roti during breakfast and two or three roti during dinner meal.

The meal pattern of the children appears to be such that the nutritional requirements of the children may go into a deficit causing the children to become undernourished. Also micro nutrient deficiencies are likely to occur in these children. The families of the children are not in a position to provide a more nutritious meal to the children. Improving

the nutritional quality of the MDM and a relook at the NRHM may address this problem to some extent.

Nutrient intake of Upper Primary School Children through previous whole day diet as per 24 h recall method

Food consumption of 50 upper primary school children comprising of 25 boys and 25 girls from both the districts was collected using previous day 24h recall method. According to their RDA, children have been classified in two age groups i.e. 10-12 and 13-15 yrs. Findings have been reported in Table 11.

Table 11: Nutrient intake of upper primary school children (n= 50) of both the districts

Upper Primary School Children (n=50)	Energy (Kcal)		Proteins (g)		Iron (mg)		Vitamin A (IU)		Vitamin C (mg)	
	RDA	Actual intake (%)	RDA	Actual intake (%)	RD A	Actual intake (%)	RD A	Actual intake (%)	RDA	Actual intake (%)
Boys (10-12 years)	2189	1313 (60%)	39.9	34.4 (86%)	21	16 (76%)	4800	2688 (56%)	40	13.6 (34%)
Girls (10-12 years)	2008	803.2 (40%)	40.4	26.26 (65%)	32	19.2 (59.7%)	4800	2593 (54%)	40	8 (20%)
Boys (13-15 years)	2748	1099 (40%)	54.3	36 (65%)	27	16.2 (59.7%)	4800	2592 (54%)	40	8 (20%)
Girls (13-15 years)	2328	1327 (57%)	51.9	44.7 (86%)	37	16.28 (44%)	4800	2544 (53%)	40	10.4 (26%)

Energy

The energy intake of both the boys and girls was below their recommended daily allowances. In the age group of 10-12y, boys and girls were taking 60 and 40 percent of the energy when compared to their respective RDA, respectively. Diet was very much deficit in energy. In contrast to it, in the age group of 13-15y, though the girls were taking more energy than the boys but both were taking less energy i.e. 40-57% of RDA only. Energy intake was less due to less intake of cereals and fat intake.

Protein

Results regarding mean daily intake of protein revealed that mean intake of protein by the school going children was only 65-86% of RDA. In both the age groups, daily protein intake of girls was less when compared to that of boys. It may be less because of low consumption of pulses, milk and no intake of non-vegetarian foods.

Iron

The data on nutrient intake illustrated that intake of iron by girls was 16.0-16.28 mg/day against the recommended dietary allowances of 32-37mg/day for 10-12 and 13-15y age group, respectively and it was quite lower than the RDA. Similarly, boys were also taking 59-76% of iron than its RDA i.e. 21-27 mg/day but their intake was higher than that of the girls. All the children were iron deficient.

Vitamin A

Vitamin A intake of both boys and girls was less than the RDA as they were consuming about half of the requirement for vitamin A in their daily diet. It may also be less due to very less consumption of milk, milk products and GLVs.

Vitamin C

Against 40 mg of daily RDA of vitamin C, both boys and girls were taking only 8-13.6 and 8-10.4 mg, respectively which was quite low. This may be due to no intake of fruits and less intake of GLVs.

II. Nutritional Anthropometry of school children

Table 12 shows that the height of both the boys and girls had the increasing trend from 5 to 16 years. Boys had slightly more weight than girls during the entire growth period except during 10-11 years when the girls showed more weight than the boys. Adolescence is a period of rapid growth and the age for this growth differs for boys and girls. Also age of attainment of maximum height and weight is different for boys and girls. Therefore, for comparison no common pattern has been observed. BMI and MUAC have shown continuous increasing trend.

Table 12: Nutritional Anthropometry as per Age and Gender

Age	N		Height (cm)		Weight (kg)		BMI (kg/m ²)		MUAC (cm)	
Primary School										
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
5	38	46	111.2	110.2	18.3	17.2	15.2	14.3	16.1	16.2
6	23	43	116.6	115.1	19.4	18.9	15.8	14.9	16.3	15.9
7	41	42	121.4	120.2	21.2	20.3	15.5	15.7	16.8	16.2
8	45	39	127.8	127.1	22.3	21.9	16.7	15.6	17.9	17.1
9	52	31	132.8	133.5	27.7	27.5	17.1	16.9	18.4	18.9
10	61	51	136.4	137.5	29.5	29.9	17.5	17.1	18.8	19.8
11	62	38	141.5	142.3	34.1	34.5	17.5	17.4	19.5	19.4
12	63	33	147.6	147.2	38.3	37.6	17.9	18.1	19.7	19.9
Upper Primary School										
13	53	70	153.2	151.1	39.7	37.6	18.1	17.9	20.3	19.9
14	53	72	154.7	152.3	45.5	44.1	18.7	18.1	22.0	21.7
15	60	58	157.5	155.1	46.8	43.8	19.2	19.1	22.3	21.5
16	67	59	165.9	158.2	51.2	49.7	19.9	19.5	23.4	22.8

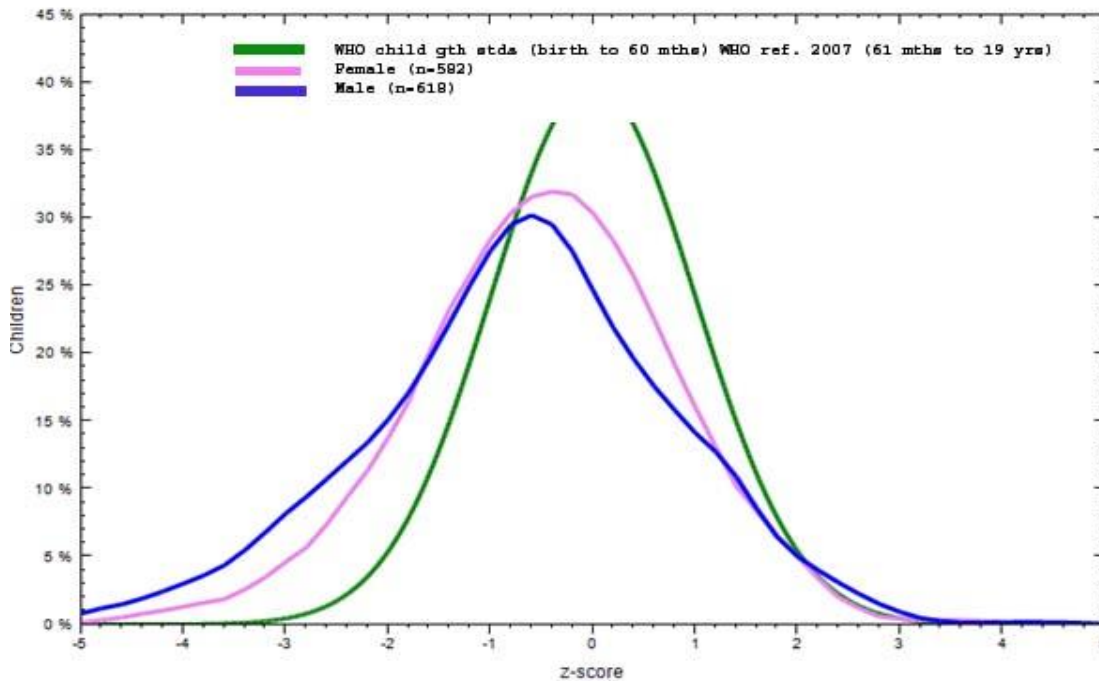


Fig. 1: BMI (Z scores) for age gender wise of all the children in both the district

Nutritional status of children

Using BMI Z score, prevalence of under nutrition among primary and upper primary school children was assessed and is presented in Table 13. Approximately 85.8 per cent primary school children and 75.0 per cent upper primary school children were observed to be normal.

Under primary school category of children, 10.16 per cent were moderately and 1.27 per cent were severely undernourished. In contrast, 18.49 percent of upper primary school children were moderately undernourished while 2.23 per cent were severely undernourished. Similarly more of overweight (2.43%) and obese (1.82) children were observed at upper primary level in comparison to 1.5 per cent of overweight and 1.12 per cent of obese primary school children (Table 13).

Table 13: BMI (Z scores) of primary and upper primary school children of Punjab as per gender

BMI (Z Scores)						
Gender	Normal n (%)	Moderate under- nutrition n (%)	Severe under- nutrition n (%)	Overweight n (%)	Obese n (%)	Total n (%)
Primary School						
Male	330 (85.7)	40 (10.38)	5 (1.29)	6 (1.55)	4 (1.03)	385 (54.3)
Female	278 (86.0)	32 (9.9)	4(1.2)	5(1.5)	4 (1.2)	323 (45.60)
Total	608 (85.8)	72 (10.16)	9(1.27)	11 (1.5)	8 (1.12)	708 (100.0)
Upper Primary School						
Male	183 (78.5)	34 (14.59)	5 (2.14)	7(3.00)	4 (1.71)	233 (47.3)
Female	186 (71.8)	57 (22.0)	6(2.31)	5(1.93)	5 (1.93)	259 (52.6)
Total	369 (75.0))	91 (18.49)	11(2.23)	12(2.43)	9 (1.82)	492 (100.0)

Values in parenthesis indicate percent

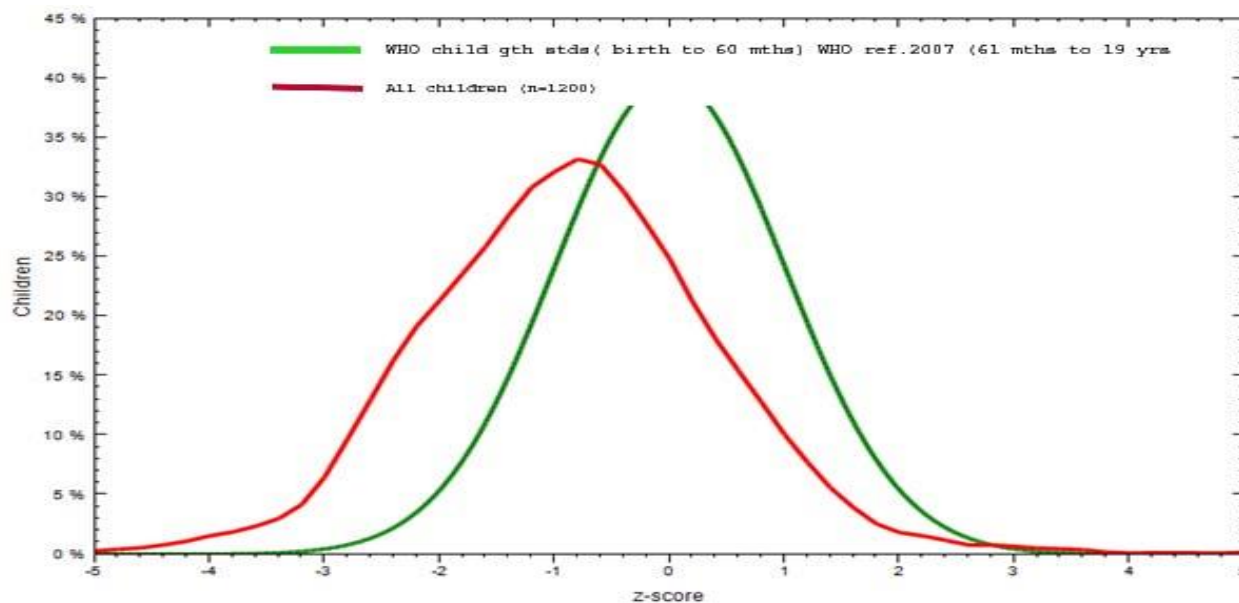


Fig.2 :BMI (Z scores) for age for all the children in both districts

BMI (Z scores) of school children of both districts as per gender

BMI Z score of under nutrition among boys and girls shows that approximately 84.7 per cent of boys and 82.2 percent of girls were normal; 11.2 percent of boys and 13.5 percent of girls were moderately under nourished and 2.8 percent of boys and 3.0 percent of girls were severely undernourished. Very few percentages of boys and girls were falling in the category of overweight and obese (Table 14).

Table 14: BMI (Z scores) of school children of both districts as per gender

BMI (Z scores)						
Gender	Normal n (%)	Moderate under- nutrition n (%)	Severe under- nutrition n (%)	Overweight n (%)	Obese n (%)	Total n (%)
Male	523 (84.7)	69 (11.2)	17 (2.8)	6 (0.87)	3 (0.43)	618 (51.5)
Female	478 (82.2)	78 (13.5)	18 (3.0)	5 (0.85)	3 (0.51)	582 (48.5)
Total	1001(83.4)	147 (12.25)	35 (2.9)	11 (0.91)	6 (0.5)	1200 (100.0)

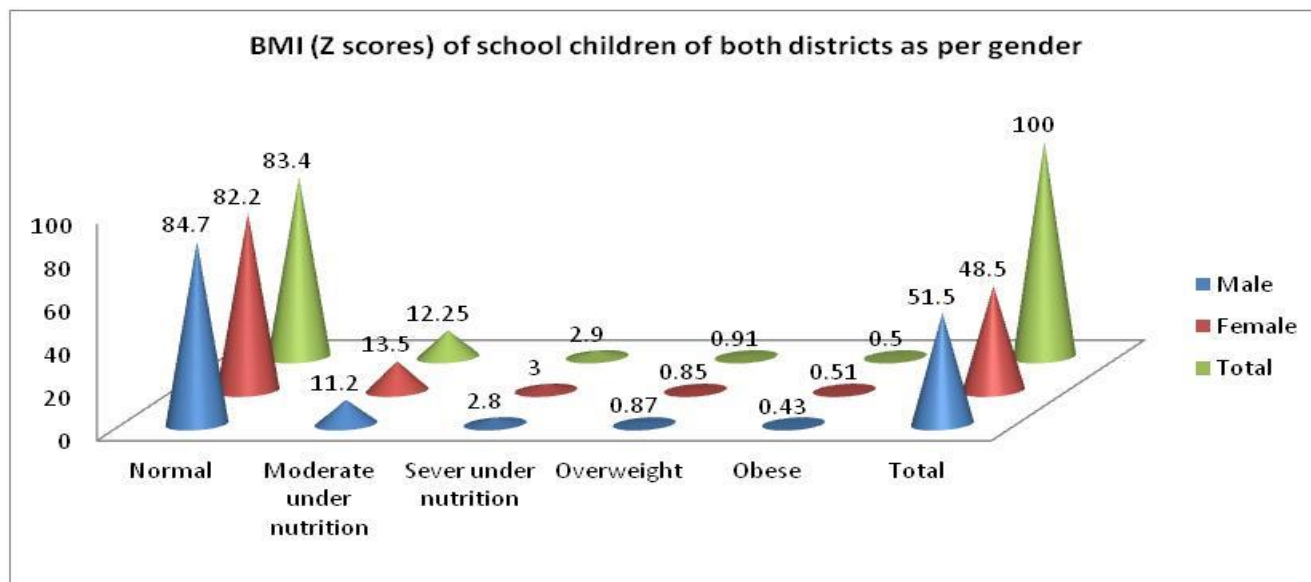


Fig 3: BMI (Z scores) of school children of both districts as per gender

Table 15: Distribution (%) of school children according to Height for age (Stunting) by Districts and Gender: SD Classification*

District	Gender	N	Stunting (Height for age)			P value
			Severe (<-3 SD)	Moderate (-3 SD to -2 SD)	Normal (> -2 SD)	
Jalandhar	Boys	321	0.5	12.2	87.3	NS
	Girls	310	2.3	9.1	88.6	
	Pooled	631	1.4	10.6	88.0	
Roopnagar	Boys	297	2.1	11.5	86.4	NS
	Girls	272	3.5	12.9	83.6	
	Pooled	569	2.8	12.2	85.0	
Grand Pooled		1200	2.1	11.4	86.5	

Overall, the prevalence of stunting (<-3SD, height for age) and <-3SD to -2 SD) among the children of Roopnagar district was more as compared to Jalandhar district. However, both the districts showed that majority of the children were in the normal category (Table 15, Fig. 4).

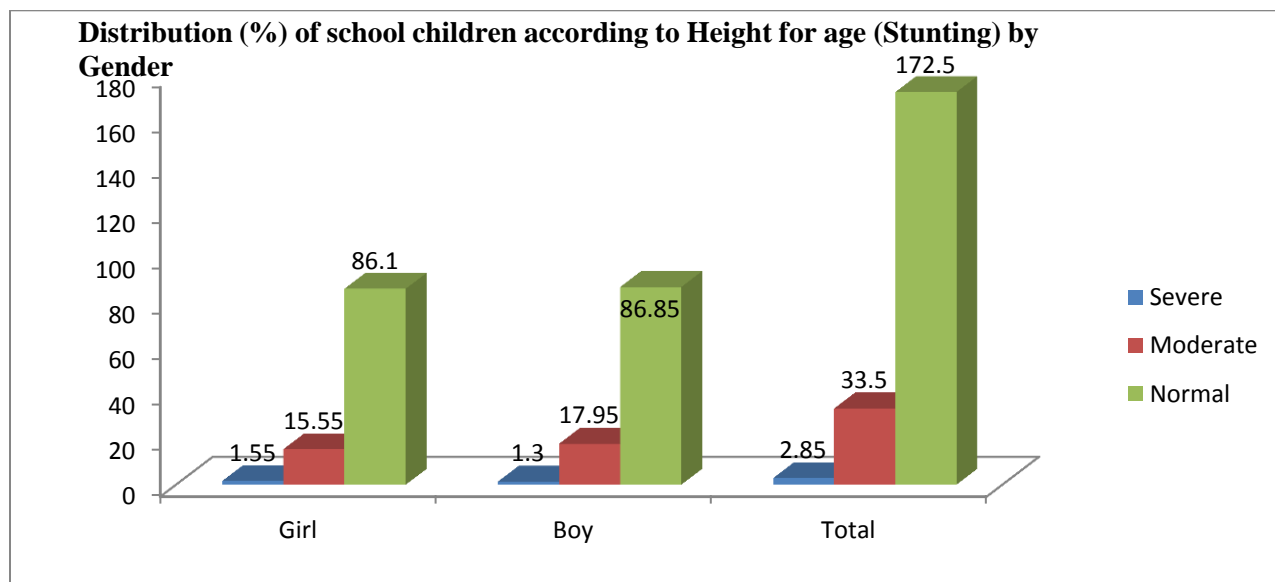


Fig 4: Distribution (%) of school children according to Height for age (Stunting) by Gender

Table 16: Distribution (%) of school children according to BMI Grades by Districts and Gender: SD Classification*

District	Gender	N	Thinness (BMI-Z Scores)			Overweight /Obesity	P value
			Severe (<-3 SD)	Moderate (-3 SD to -2 SD)	Normal (>-2 SD)		
Jalandhar	Boys	321	2.8	11.2	84.7	1.3	NS
	Girls	310	3.1	13.5	82.2	1.2	
	Pooled	631	2.95	12.35	83.45	1.25	
Roopnagar	Boys	297	1.5	8.1	87.1	3.3	NS
	Girls	272	2.6	8.6	86.7	2.1	
	Pooled	569	2.05	8.35	86.9	2.7	
Districts Pooled	Boys	618	2.15	9.65	85.9	2.3	NS
	Girls	582	2.85	11.05	84.45	1.65	
Grand Pooled		1200	2.5	10.35	85.17	1.97	

The data in the Table16 depicts that the majority of the children in both the districts fell in the normal category. Whereas, the prevalence of thinness (<-3SD,) and <-3SD to -2 SD) i.e. severe and moderate was more among the children of Jalandhar district as compared to that of Roopnagar.

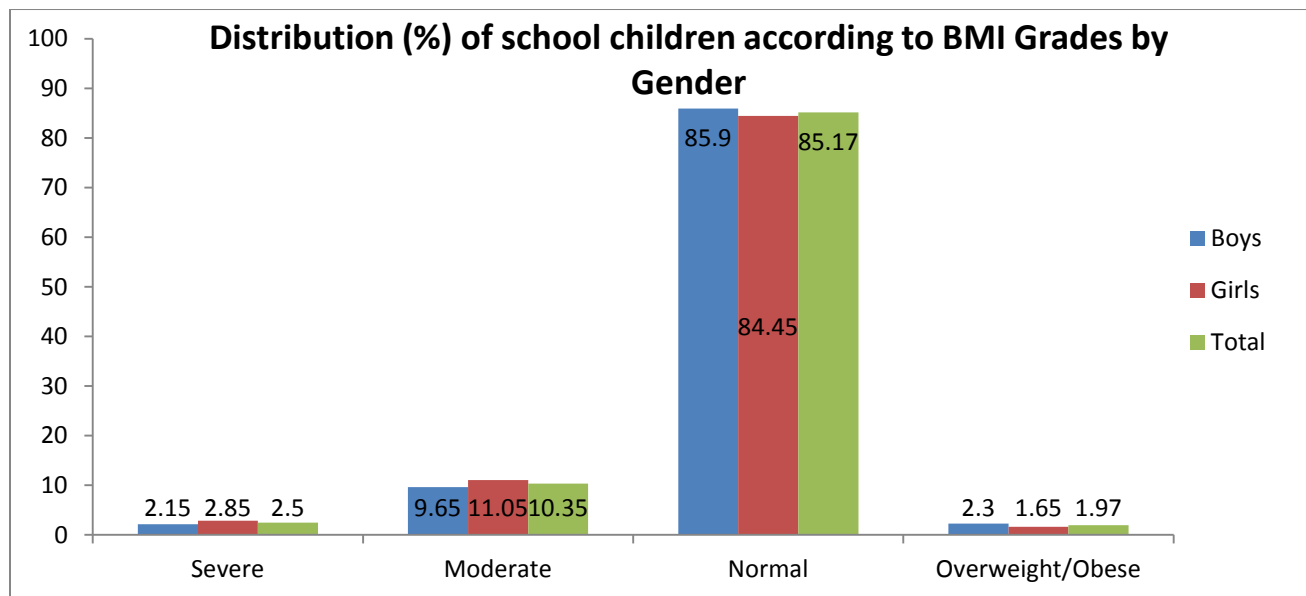


Fig. 5: Distribution (%) of school children according to BMI Grades by Gender

III. Clinical Assessment

All the children were seen for clinical signs of eyes, hair, nails, knees and skin. Health checks up record registers were also consulted to have an idea of the prevalence of diseases among the children. The details of following clinical signs were observed among the school children:

Clinical Examination: Nutritional deficiency signs

The prevalence of dental caries was about 14.45%, which was higher in Jalandhar (15.16%) as compared to Roopnagar (13.3%). Prevalence of dental flurosis was also little higher in Jalandhar district (0.3%) as compared to district Roopnagar (0.2%). The prevalence of Night blindness, Bitot spots and Conjunctival Xerosis was higher in district Jalandhar than that in the Roopnagar. The prevalence of Angular Stomatitis (0.7%) was more in Jalandhar where as the prevalence of Angular Scars (0.15%) was more in Roopnagar district. Leukonychia was present among 10.4% of the children. Many of the students had white spots on their cheeks too. A few children had skin problem too. No child had bleeding gums. Symptoms of goitre were also not seen among the children of visited schools, may be due to consumption of iodized salt in MDM. No child had the bone deformity.

Table 17: Prevalence (%) of clinical signs among school children

Nutritional deficiency signs	Jalandhar (%)	Roopnagar (%)	Pooled (%)
Hair Depigmentation	1.6	1.9	1.75
Night blindness & Bitot Spots	2.5	2	2.25
Conjunctival Xerosis	0.5	0.3	0.4
Angular Stomatitis	0.8	0.6	0.7
Angular Scars	0.1	0.2	0.15
Pigmented Tongue	1.0	1.5	1.25
Dental Caries	15.6	13.3	14.45
Dental Flurosis	0.3	0.2	0.25
Spoon shaped nails	-	-	
White spots on nails	11.8	9.0	10.4

(leukonychia)			
Goitre	-	-	-
Knee problem or any other bone deformity	-	-	-

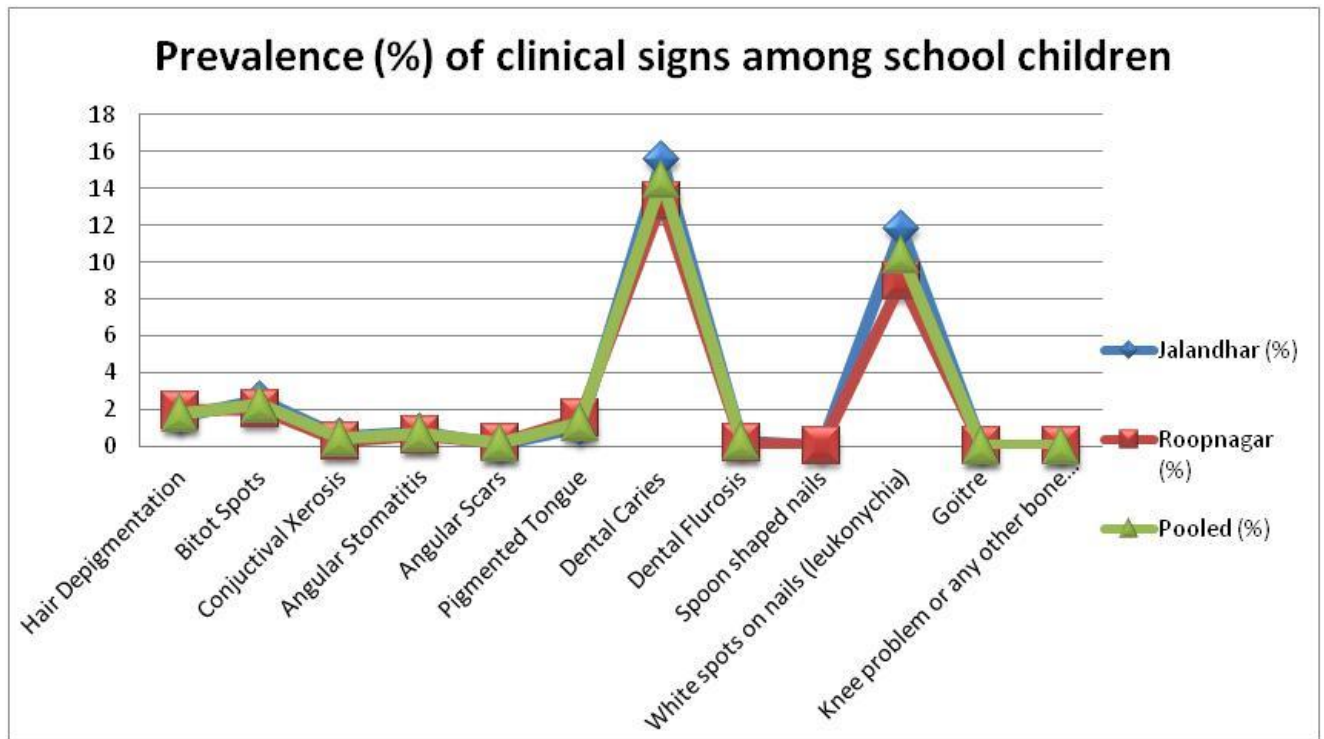


Fig. 6: prevalence of clinical signs among school children

Clinical signs and their relation to nutritional deficiencies

Vitamin A deficiency has been seen using signs viz., night blindness, conjunctival dryness and bitot’s spot. It has been observed that the deficiency of vitamin A exists to a great extent. With a high prevalence of symptoms in eyes, vitamin A deficiency is a public health concern in the area.

Hair depigmentation was monitored through protein deficiency. Table __ indicated that 1.75% of children had hair depigmentation which may be related to protein deficiency. Dietary survey also indicated that the daily intake of pulses and milk was not fulfilling the protein requirement of the children.

Deficiency of vitamin B complex was observed through the symptoms of Angular Stomatitis, Angular Scars and Pigmented Tongue, in which the percent of pigment tongue was more i.e. 1.25% as compared to angular stomatitis (0.7%) and angular scars (0.15%). In children, mineral deficiency was recorded by the presence of signs of dental caries and dental fluorosis which were widely prevalent among children of both the districts. Due to deficiency of fluorine and calcium, these symptoms may be seen. Dental caries were more among children i.e. 14.45% as compared to dental fluorosis i.e. 0.25%. Further the situation of dental caries may have got aggravated due to poor oral hygiene. Dental caries in 14.45 per cent school children is a serious issue as many children would not eat any hard food due to pain in teeth. This may further increase the chances of under-nutrition.



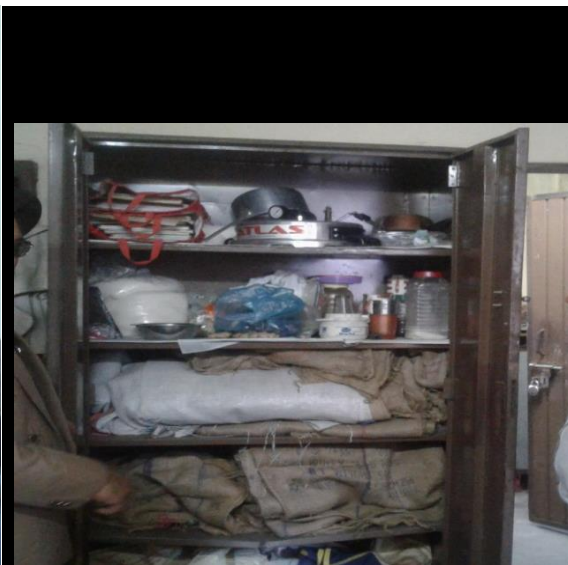


RECOMMENDATIONS

Mid-day meal scheme in the schools is world's largest feeding programme with a number of objectives. The study reveals that the implementation level of the scheme is average as there are certain issues raised by teacher(s). The main problems noted in the study are delay in availability of funds and food grain for smooth running of the scheme. Other problems include infrastructure related problems like insufficiency of funds like lack of proper venue for serving cooked meal and limited number of taps for cleaning of utensils which creates hurdles for systematic implementation of the scheme. The quality and quantity aspects of the served meal are satisfactory but these could be improved for better results with the following suggestions:

1. Infrastructural Development

- There is lack of proper infrastructure in the schools. In number of schools, storage provisions are rarely available. There is unplanned arrangement for storage of items particularly dals and spices. Storage area was found to be damped, dark and dingy with no ventilation facility.



There is need to work on systematic storage facility with provision of air and light. It is also noticed that meal is distributed among the children in , verandah or open space in the school. Kitchen sheds, buildings for mid-day meal scheme should be looked by nodal ministry. District level meetings should be held after certain duration and these should be well commuted to central and state level authorities for smoothing functioning of these schemes.



- Environmental sanitation of kitchens needs attention in most of the schools.
- Proper dining areas/halls should be there for serving of foods to children. Presently, they sit in the varandahs or class room on mat while eating which are found not to be clean in some of the schools.



- More number of taps are required in schools so that the children can use them for cleaning their hand before and after taking their meal and cleaning of utensils.
- Water drainage facility was found to be poor in majority of school. There should be proper and covered drains in all the schools so that there is no filth and dirt around the washing area. The drained water can be used for watering plants and trees in kitchen garden. School should be a model place how to use waste water effectively.



- In most of the selected schools, toilets were few and not in clean conditions. Construction of new toilets and repairs of the existing ones in some of the schools and ensuring cleanliness are some of the suggested measures in this direction.
- It was found out that though the scheme of MDM was found to be beneficial by the entire stakeholder but it fails to achieve the objective of increasing enrollment of children in government schools and decreasing the dropout rate. However, both these objectives were found to be achieved in government aided schools. More infrastructural facilities and improving the quality of education can help to accomplish these objectives.



2. Sufficient Utensils & devices for Effective Implementation

It was found from the survey that in some of the schools, students bring utensils from their own home like spoons and glasses. So it is recommended to provide the same so that children can really enjoy their meal. There is need to replace kitchen devices in 8652 schools.

3. Facility for LPG Chullah and Procurement of Cylinders

- In some interior village schools in Roopnagar it was found out that procuring LPG cylinder was a big problem because the teacher himself had to go during school hours to procure the same. Such facility should be provided from the state. Further, the LPG tube should be protected to avoid any kind of accident.
- Provision of fire extinguisher should be made near the kitchen in all the schools.
- Some schools had reported theft of LPG cylinders and ration due to non-availability of security guard especially in the small



schools. Some provision should be made to check such thefts.

- In large number of schools mud chullahs using wood fuel were there for cooking meals. Burning of wood should be avoided/ banned. In place of that school should be provided with LPG Chullahs.

4. Change In Menu and Inclusion of Additional Foods

- As found from the survey that the students didn't like some items of the menu i.e, kheer with dal chawal on Tuesday. Kheer should be served on some other day when roti is there instead of Rice. Poshtik khichadi was also found to be least likable among students as o vegetables were added to it in place of it vegetable biryani can be a better and attractive menu. It should be paired with curd to enhance nutritive value and acceptability.



- School authorities should be given flexibility to serve either roti or rice depending upon the taste of children. In Roopnagar, majority of children were Punjabis and were reported to be fond of roti rather than rice. On the other hand majority of the children in Jalandhar district were of migrant laborer from Bihar and U.P. They were reported to be fond of Rice rather than roti.
- Quantity of green leafy vegetables was found to be very less in MDM recipes in all schools. In MDM menu, greens like coriander leaves should be added in the dal or vegetable preparations. It has been observed that in majority of schools they were not at all added because of high cost. Similarly in dal palak, quantity used of palak is very less. **Hence, all the schools should be encouraged to have kitchen gardens** where these vegetables can be grown. Moreover, separate green based recipes should be incorporated in menu. If children do not like such GLVs, these should be given in the soups or mixed with wheat flour for making roti.
- The menu of MDM is pre decided in Punjab by state Govt which is implemented all over the state since 2015. The implementation of same menu over such a long time creates

monotony and boredom. There is need to have more varied menu including green leafy vegetables, milk, curd and soyabean.

- Colour of the meal should not be monotonous. Meal should be made colorful by adding seasonings or by garnishing with coriander/mint leaves. Salads using radish, carrot, tomatoes can also be added to provide vitamins and making the meal more wholesome.
- Locally available inexpensive vegetables should be used. Leaves of radish, carrot, mustard, bathua etc should be used in meal preparation. In Punjab, sarsaon sag is very popular in winter season and acceptable to children. It should be cooked once a week. It can be procured free or at less cost from the fields of SMCs in villages or even grown in kitchen garden of the school.
- During the survey, it was observed that students liked kadi chawal, rajmah chawal and kale channa and halwa. They did not like khichdi, dalia, ghia etc. They wanted to have any seasonal fruit and any milk preparation e.g. Curd, buttermilk or milk as such. We also observed that milk and fruit should be added
- in their meal so as to provide micronutrients as the meal at present is mainly meeting the requirements of energy and protein. The amounts of milk in kheer and amount of refined oil was less. In dals soya bean and rajma should also be given.



5. Uniform Instructions for Cooking Oil

- No Instructions has been issued regarding the use of type of oil to be used in MDM. Different oils were being used in different schools. Rather than one particular oil blending of oils is recommended. Two parts of groundnut oil + one part of soybean oil, use of mustard oil for frying etc. is recommended to be used for MDM Alternate use of different cooking oil can also be done.

6. Provisions of Vegetables Scales for Measurement Of Raw Ingredients

- It was observed that the amount of rice, wheat flour, potato, tomato, ginger, onion,

garlic, ghee etc taken by cooks was very approximate. There should be provision of weighing machines for measurement of grains and vegetables. This work should be got done by MDM Incharge under his/her supervision and then handed over to the cooks in the morning depending upon the attendance of the students. Serving size was also found to be highly approximate. All head teachers should be asked to get cooked one unit of khichadi, one unit of rice (100 g or 150 g) and one unit of *sabji* in school. They should measure the cooked amount in one vessel/serving device. This measure should be used to serve food as per norms. School Management Committees should be involved for ensuring the quantity and quality of food being served.

7. Safe Drinking Water Facility

- It has been found that there is water facility in maximum schools but very rare with RO water purifier. A number of schools had submersible pumps with no facility of RO. There should be provision of RO water purifiers for drinking and cooking safe water for cooking MDM as well as for drinking purpose.



- In case of absence of such facilities JRM Team recommended that the testing of water quality of the water source and cleanliness of the surrounding of the drinking source must be ensured and its proper record should be maintained.

8. Developing healthy practices during MDM time

It has been observed in all the schools except one that cooks do all the work of MDM- Starting from distribution of plates, distribution of meal to cleaning of utensils. They are over burdened to perform this task for a large number of students. To lighten their burden and for developing healthy practices like autonomy and independence, children should be encouraged to take their own plates,



spoons and glasses for taking their meals .Even for serving of meals older children should be put on duty on rotation basis to inculcate the feeling of responsibility in them.

All the children except the very young ones who are in first and second grade should be encouraged to clean their own utensils after taking the meal. This is very much needed to sensitize them about cleanliness and doing their tasks on their own. Such kind of practices is already followed in gurudwaras in Punjab. So all community institutions should join hands to encourage such practices.



- It was observed that majority of the children were just having two meals at home in the evening and at night and were skipping breakfast. Parents should be made aware that it is an extra meal along with the regular 3 meals of the day and not just a substitute for breakfast and lunch.

9. Regular and Frequent Visits of Higher Level Supervisory Authorities

D.E.O.s and D.D.E.Os. of both the districts under study revealed that they could hardly visit any school. As a result they were asking about all the information from block level officer. No one was found to be aware of all the objectives of MDM Scheme. So, regular and frequent visits of all kinds of supervisory authorities-block, district, state & central level should be there for effective monitoring of the scheme. This measure will make them more aware regarding number of problems faced in execution of the scheme. One additional benefit is that the school authorities will be more conscious in running the scheme effectively and properly.

10. Capacity Building Courses for Cooks & Supervisory Level Authorities Linked With MDM

- Sensitization and capacity building of officials at District and Block levels towards their role and responsibilities is essential for effective implementation of MDMS. They must be aware of the objectives of MDM scheme.
- Frequent refresher courses related to MDM should be held for all kind of supervisory

authorities. Even the assistant block managers could just state not more than one objective of the scheme. Such refresher courses would provide them platform for updating their knowledge and coming out with solutions of the problems faced by schools.

- Cooks should be trained in food and fire safety. It should be made compulsory for them to follow hygienic practices and wear headgears during meal preparations.



11. Community Awareness

- The community should be made aware of the relevance and significance of the scheme and should be sensitized adequately as desirable nutrition, health and sanitation practices cannot be developed in children in schools isolated from the community in which they live. There should be information sharing with local community about MDM so that the community understands the scheme in right perspective and not just as a beneficiary programme.

12. Encouragement to Develop Kitchen Garden

- All the schools should be encouraged to have their kitchen garden which should be cared with the help of children. Various kinds of vegetables like radish, carrot, spinach, coriander, mint, bathua, sarson and methi should be grown there and used for the meals of children.
- In case, there is no space in the school to have the facility of kitchen garden, Community based nutrition gardens should be built in the villages and their products should be used in MDM in schools.



13. Proper Display of Rights of Children Menu and Emergency Numbers

- Though the rights and entitlements of children, menu and emergency contact numbers were found to be displayed in majority of schools, the need is to display them at prominent walls of the schools.
- MDM logo should be displayed in all the schools.



14. Focus on Increasing Enrollment, Attendance and Retention by Providing Quality Education

Mid-day meal scheme has started with prime objective of increasing enrollment, attendance and retention of the socially and economically backward sections of the society. It has been found in the survey that there is no or very less impact of the scheme on these parameters. As per data available, there is increase in private/government aided schooling among the children although there is no free lunch scheme in these schools. So, by focusing on the quality education, these government schools can realize the objectives of Right to Food and Right to Education especially for marginalized sections of the society

15. Creation of Awareness among the Parents

Counseling of parents about the value of education for the future of their children can help for better policy implications. Ignorance of the parents creates a causal approach amongst the children for study. As a result, they lag behind and loose interest in studies which further increases absenteeism and dropout.

16. Increase in Frequency of Medical/Health Checkups

- There are guidelines under MDM for health checkup of students but it was found that it was conducted just once in a



year so the health aspects of students get overlooked. Increase in number of doctor's visits in a year for medical checkup of the students is required for detection of diseases in the students.

- Data taken by the health team should be analyzed and shared with the school authorities so that further action can be taken accordingly.
- Iron and folic acid tablets are not being distributed in schools at regular intervals. In some schools use of iron tablets was reported but records are not maintained when it was distributed and how much was distributed.
- Maintenance of medical checkup records and inspection of records should be followed up regularly to reduce health related issues. To generate more effective results of the scheme, rigorous feedback should be obtained after certain duration from children and parents regarding quality, quantity and all other essential parameters of the scheme
- In some schools teachers do not know the frequency for distribution of tablets. It should be distributed weekly. Awareness generation camp for teachers, parents and children should be organized in health camp.



17. Health Education As Part Of School Syllabi

- As the children get meal in school, at least 30 minutes class for health education should be conducted either within the school timings or during the physical education period. This shall be a long term approach to mitigate hunger of protein and energy and hidden hunger of micronutrients i.e. various minerals and vitamins.



- Mid day meal provide only about one third of protein and energy. Rest of the nutrients especially micronutrients should come from the home diet. But mid day meal does not provide one third of other nutrients like calcium, iron and vitamins. Therefore, it is very important that nutrition education is given to children as well as to parents.
- Teachers should also be made aware of the nutrient and food requirement of children. To curb hidden hunger of micronutrients, parents should be told that vegetables and fruits should be incorporated in the daily diets of school children.

18. Downward and Upward Extension Of MDM

- There is need of downward and upward extension of MDM scheme. There are Government ADARSH Senior Secondary schools in Punjab state which provides education right from K.G. level to Senior Secondary Level.MDM is provided to children right from First grade to eighth grade Children in K.G. Classes are ignored. It is strongly recommended that this age group should also be included for MDM as it is a critical and one of the most important age group of children. Similarly, this scheme should extend in upward direction to include the children of 9th and 10th grade because brain development which is directly linked with nutritional intake takes place till eighteen years of age.

19. Ensuring Proper Evaluation, Maintenance of Records & Authentication of Data

- No record is maintained by the supervisory staff during their visit to the school regarding evaluation of Mid Day Meal. A standardized Inspection proforma need to be evolved/developed and should be filled up by the supervisory staff right from the Block to the District level on the day of visit.
- No record is maintained for the purchase of vegetables, pulses, cooking oil, salt etc. Maintenance of proper record for purchase should be ensured in all schools.
- State should use the information available at MDM-MIS portal to evaluate the performance of scheme and also for focused inspections and monitoring
- The team suggests that State Govt. should reconcile data with QPR & MIS Web Portal

for accuracy in reporting in future. The various reports available on the web portal MIS should be analyzed at each level viz. State/District/ Block level for authentication.

- JRM team observed that less number of schools are reporting daily data regarding the number of beneficiaries of MDM. So it is recommended that it should be made mandatory for every school to send the data every day for all the approved schools.

20. Substitution of the Involvement of Parents with Teachers

By substituting women of the villages and mothers of beneficiary students, the involvement of the teachers can be decreased. So, the financial conditions of the families can be improved. They can be made responsible for cooking and serving of meals. The school staff should be restricted only to monitor and supervise the serving. Confinement of the teachers in only administration will help them to concentrate on providing quality education.

21. Enhancing Involvement of All Stakeholders in MDM

- Involvement of different stakeholders- parents of children, SMCs, Sarpanch was found to be very less in MDM. They hardly come and visit the kitchen of MDM to check the quality and quantity of food. They only visit during the school functions and then sometimes taste the food if it is serving time. Otherwise, it was observed that their involvement in MDM is not much. Involvement of all the stakeholders and important community people should be enhanced.

22. Thrust on Mobilising Community Resources

- All the schools should put in their best efforts to ensure and tap community resources for MDM Scheme for the provision of RO filters, water coolers, provision of fresh seasonal vegetables, butter milk, furniture for dining of children in the school.



- Some of the companies in urban areas can also be included as a partner in MDM as part of their CSR (Corporate Social Responsibility). Even the NGOs in the area where the school is located can be roped in to contribute in MDM Scheme.
- School in charges who collect maximum number of community resources for MDM programme for the benefit of children should be motivated and awarded.

23. Timely release of Funds and Grains

- Delay was noticed in the release of funds by the State to the schools due to which all the schools had negative balance of cooking cost. Fund flow from State needs to be streamlined for timely provision of funds at school level.
- Similarly food grain supply chain management must be streamlined for timely supply of food grains to schools.

24. Filling up of vacant Posts

- JRM team strongly recommends that all the vacant posts (146) should be filled up in order to increase the effective monitoring of MDM scheme.

25. Timely Payment of Honorarium of Cook-cum-Helpers

- The honorarium of CCH has not been revised since 2009.
- Honorarium of Cook-cum-Helpers need to be enhanced and paid monthly because they belong to the disadvantaged segment of the society.

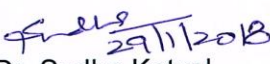


On the whole, the Mid Day Meal Scheme has made strident improvements in the physiological, social and mental well-being of our school children; and it is expected to continue doing so for our future generations with greater efficiency and much better impact.


Davander Kumar


K.K. Sharma


Prabhcharan Singh


Dr. Sudha Katyal


Dr. Neelam Khetarpal

Some Photographs from the field visit





ਮਿਤੀ	ਦਿਨ	ਕਮਰ ਨੰਬਰ	ਕੀ ਚਾਹਿਆ	ਮੁਦਾਦ	ਰਕਮ
02-01-18	ਸੋਮਵਾਰ	26	ਪਿਠੜੀ + ਘੀਰ	ਦੁੱਧੀਆ	੪
03-01-18	ਮੰਗਲਵਾਰ	27	ਕਮਰੇ ਕੱਚੇ + ਫਲਰ	ਠੀਰ	੪
04-01-18	ਬੁੱਧਵਾਰ	27	ਕਮਰੇ ਕੱਚੇ + ਫਲਰ	ਮੁਦਾਦ ਕੀਰ	੪
05-01-18	ਸੋਮਵਾਰ	27	ਮੁਦਾਦੀ + ਫਲਰ	ਦੁੱਧੀਆ	੪
06-01-18	ਮੰਗਲਵਾਰ	29	ਦਾਨ + ਫਲਰ + ਘੀਰ	ਕੀਰ	੪
07-01-18	ਬੁੱਧਵਾਰ	30	ਦਾਨ + ਫਲਰ	ਦੁੱਧੀਆ	੪
08-01-18	ਸੋਮਵਾਰ	29	ਖਿਚੜੀ + ਘੀਰ	ਦੁੱਧੀਆ	੪
09-01-18	ਮੰਗਲਵਾਰ	32	ਕਮਰੇ ਕੱਚੇ + ਫਲਰ	ਦੁੱਧੀਆ	੪
10-01-18	ਬੁੱਧਵਾਰ	32	ਕਮਰੇ ਕੱਚੇ + ਫਲਰ	ਦੁੱਧੀਆ	੪
11-01-18	ਸੋਮਵਾਰ	32	ਕਮਰੇ ਕੱਚੇ + ਫਲਰ	ਦੁੱਧੀਆ	੪
12-01-18	ਮੰਗਲਵਾਰ	32	ਕਮਰੇ ਕੱਚੇ + ਫਲਰ	ਦੁੱਧੀਆ	੪
13-01-18	ਬੁੱਧਵਾਰ	33	ਦਾਨ + ਫਲਰ + ਘੀਰ	ਦੁੱਧੀਆ	੪
14-01-18	ਸੋਮਵਾਰ	20	ਦਾਨ + ਫਲਰ	ਦੁੱਧੀਆ	੪
15-01-18	ਮੰਗਲਵਾਰ	28	ਖਿਚੜੀ + ਘੀਰ	ਠੀਰ	੪
16-01-18	ਬੁੱਧਵਾਰ				





EMERGENCY NUMBERS JALANDHAR	
POLICE	100/181
FIRE BRIGADE	101
AMBULANCE	108
CIVIL HOSPITAL	2227006
WOMEN & CHILDREN	1091
POLICE DIV. NO. 5	099157 16305
D.C. OFFICE, JALANDHAR	0181 2224783
COMMISSIONER OF POLICE	0181 2226497
MR. SUSHIL KUMAR RINKU (M.L.A.)	99159 00902
MRS. KAMLESH GROVER (COUNCILLOR)	97799 52071
MR. RAJ KUMAR SHARMA (PRINCIPAL)	98550 10055

ANNEXURE I**School wise details of Attendance and Avg. children availed MDM during last ten days****Districts Jalandhar and Roopnagar**

S No.	Name of the school	Enrolment	Last 10 days attendance										Avg	% to Enrol
			Day 1	2	3	4	5	6	7	8	9	10		
JALANDHAR														
1	Govt Girls Sec. School, Model Town	119	74	97	105	96	96	96	82	102	106	102	96	80%
2	G.Pry School, Garha	257	179	196	196	203	193	186	162	189	204	199	191	74%
3	G.M.S, Garha	122	75	102	122	117	118	105	100	107	112	112	107	88%
4	G.G.S.S.S Bhogpur	186	113	131	163	152	147	134	133	124	155	141	139	75%
5	G.S.S.S.Pachranga	123	87	100	101	108	101	105	100	97	104	101	100	82%
6	G.P.S. Shakarpur	63	53	51	54	53	52	58	54	56	56	60	55	87%
7	G.P.S. Verala	253	173	163	198	205	201	187	146	175	197	202	185	73%
8	G.P.S. Sabhowal	176	145	162	167	165	164	165	156	162	167	164	162	92%
9	G.P.S. LuharNangal	192	104	166	175	170	178	162	163	168	177	179	164	86%
10	G.S.S.S Wadala	156	134	147	143	146	148	148	149	149	148	157	147	94%
11	D.S.S.D.S.S,BastiNau	585	486	486	401	478	472	495	454	422	372	484	455	78%
12	AryaKanya Pry School	230	111	113	168	179	193	186	181	188	186	175	168	73%
13	AryaKanya U.P School	155	74	88	103	127	136	126	115	121	120	130	114	74%
14	G.G.H.S, West Jallandar	128	55	71	93	98	99	95	95	98	93	93	89	70%
15	G.Sr.Sec.S, Talhan	104	73	88	87	85	87	90	72	79	88	83	83	80%
16	G.Sr.S.S, Dhanowali	95	80	68	63	62	78	76	72	76	66	71	71	75%
17	G.P.S.KakiPind	170	140	134	169	162	157	158	164	151	153	156	154	91%
18	G.M.S Salemtur	38	34	32	35	35	32	34	30	34	35	32	33	88%
19	Pun.Armed Police S	248	179	164	193	206	210	206	206	210	194	201	197	79%
20	G.P.S.Adarsh Nagar	177	119	100	138	155	158	151	148	147	137	153	141	79%
21	G.G.S.S.S.Adarshnagar	247	188	132	194	212	208	209	191	190	189	204	192	78%
22	G.P.S.Talhan	139	117	86	114	116	115	116	113	120	104	114	112	80%
RUPNAGAR														
23	G.S.S.S. Behrampur	74	74	72	41	65	66	72	63	67	64	70	65	88%
24	G.M.S PathreriJatan	28	26	24	24	24	28	28	25	26	26	28	26	93%
25	G.M.S.Goslan	35	27	26	27	35	29	31	32	31	29	31	30	85%
26	G.P.S.Bhagwantpur	42	34	28	29	31	38	36	31	35	24	33	32	76%
27	G.UP.S. PathreriJatan	67	62	56	59	61	63	62	63	64	58	60	61	91%
28	G.M.S.Dhulchin	23	21	21	23	22	23	23	22	21	22	22	22	96%
29	G.P.S.PathreriJatan	36	31	28	28	33	32	32	32	29	30	29	30	84%
30	G.S.S.Singh.B.pura	80	64	77	55	61	77	78	77	73	68	73	70	88%
31	G.U.P.S Balsanda	49	47	47	42	44	46	46	46	48	49	43	46	93%

32	G.P.S.Ropar	40	34	35	40	35	35	35	36	34	30	35	35	87%
33	G.P.S, Behrampur Z	57	53	54	51	53	47	46	49	48	48	39	49	86%
34	Middle S.Rangilpur	50	42	36	32	36	43	42	43	42	43	44	40	81%
35	G.P.S. Balsanda	72	63	66	67	65	69	69	69	69	66	69	67	93%
36	G.G.Sr. Sec S. Nangal	163	150	143	143	133	131	149	147	145	144	138	142	87%
37	G.H.S,Kalitran	175	174	173	168	169	170	164	167	162	164	167	168	96%
38	G.Sr.Sec.S, Nangal	87	64	65	65	24	65	70	78	69	61	67	63	72%
39	G.P.S.NayaNangal	53	47	48	45	39	40	46	45	45	44	34	43	82%
40	G.P.S.Kalitran	58	56	57	57	57	58	57	57	54	57	57	57	98%
41	G.H.S. Daroli	137	126	120	123	116	128	131	124	126	125	126	125	91%
42	G.P.S. Daroli	55	57	52	51	51	55	55	52	53	53	55	53	97%
43	G.AdarshSr.S.S.Lodhipur	587	557	555	560	445	558	561	557	533	522	536	538	92%

Annexure-II

**School wise details of Infrastructure facilities
Districts Jalandhar and Rupnagar**

S No.	Name of the school	Display Menu	MDM Logo	Availability of Pucca Kitchen	Fuel used	Availability of KD	Fire Extinguisher	Availability of eating plates	No. of CCH engaged	Inspections	Health check up	Availability of Health card	Emergency plan	Tasting of meals
JALANDHAR														
1	Govt Girls Sec. School, Model Town	Yes	Yes	Yes	LPG	Yes	Yes	Yes	2	Monthly	Yes	No	Yes	Yes
2	G.Pry School, Garha	Yes	Yes	Yes	LPG	Yes	Yes	Yes	3	Monthly	Yes	No	Yes	Yes
3	G.M.S, Garha	Yes	Yes	Yes	LPG	Yes	Yes	Yes	3	Monthly	Yes	No	Yes	Yes
4	G.G.S.S.S Bhogpur	Yes	Yes	Yes	LPG	Yes	Yes	Yes	3	Monthly	Yes	No	Yes	Yes
5	G.S.S.S.Pachranga	Yes	Yes	Yes	LPG	Yes	Yes	Yes	3	Monthly	Yes	No	Yes	Yes
6	G.P.S. Shakarpur	Yes	Yes	Yes	LPG	Yes	Yes	Yes	2	Monthly	Yes	No	Yes	Yes
7	G.P.S. Verala	Yes	Yes	Yes	LPG	Yes	Yes	Yes	4	Monthly	Yes	No	Yes	Yes
8	G.P.S. Sabhowal	Yes	Yes	Yes	LPG	Yes	Yes	Yes	3	Monthly	Yes	No	Yes	Yes
9	G.P.S. LuharNangal	Yes	Yes	Yes	LPG	Yes	Yes	Yes	3	Monthly	Yes	No	Yes	Yes
10	G.S.S.S Wadala	Yes	Yes	Yes	LPG	Yes	Yes	Yes	3	Monthly	Yes	No	Yes	Yes
11	D.S.S.D.S.S,BastiNau	Yes	Yes	Yes	LPG	Yes	Yes	Yes	6	Monthly	Yes	No	Yes	Yes
12	AryaKanya Pry School	Yes	No	Yes	LPG	Yes	Yes	Yes	3	Monthly	Yes	No	Yes	Yes
13	AryaKanya U.P School	Yes	No	Yes	LPG	Yes	Yes	Yes	3	Monthly	Yes	No	Yes	Yes
14	G.G.H.S, West Jallandar	Yes	Yes	Yes	LPG	Yes	Yes	Yes	3	Monthly	Yes	No	Yes	Yes
15	G.Sr.Sec.S, Talhan	Yes	Yes	Yes	LPG	Yes	Yes	Yes	3	Monthly	Yes	No	Yes	Yes
16	G.Sr.S.S, Dhanowali	Yes	Yes	Yes	LPG	Yes	Yes	Yes	2	Monthly	Yes	No	Yes	Yes
17	G.P.S.KakiPind	Yes	Yes	Yes	LPG	Yes	Yes	Yes	3	Monthly	Yes	No	Yes	Yes
18	G.M.S Salemtur	Yes	Yes	Yes	LPG	Yes	Yes	Yes	2	Monthly	Yes	No	Yes	Yes
19	Pun.Armed Police S	Yes	Yes	Yes	LPG	Yes	Yes	Yes	5	monthly	Yes	No	Yes	Yes
20	G.P.S.Adarsh Nagar	Yes	Yes	Yes	LPG	Yes	Yes	Yes	3	Monthly	Yes	No	Yes	Yes

21	G.G.S.S.S.Adarshnagar	Yes	Yes	Yes	LPG	Yes	Yes	Yes	4	Monthly	Yes	No	Yes	Yes
22	G.P.S.Talhan	Yes	Yes	Yes	LPG	Yes	Yes	Yes	3	Monthly	Yes	No	Yes	Yes
RUPNAGAR														
23	G.S.S.S. Behrampur	Yes	No	Yes	LPG	Yes	Yes	Yes	2	Monthly	Yes	No	Yes	Yes
24	G.M.S PathreriJatan	No	No	Yes	LPG	Yes	Yes	Yes	2	bi-monthly	Yes	No	Yes	Yes
25	G.M.S.Goslan	Yes	Yes	Yes	LPG	Yes	Yes	Yes	2	Monthly	Yes	No	Yes	Yes
26	G.P.S.Bhagwantpur	Yes	Yes	Yes	LPG	Yes	Yes	Yes	2	Monthly	Yes	No	Yes	Yes
27	G.UP.S. PathreriJatan	Yes	No	Yes	LPG	Yes	Yes	Yes	2	Monthly	Yes	No	Yes	Yes
28	G.M.S.Dhulchin	Yes	Yes	Yes	LPG	Yes	Yes	Yes	1	Monthly	Yes	No	Yes	Yes
29	G.P.S.PathreriJatan	Yes	No	Yes	LPG	Yes	Yes	Yes	2	Monthly	Yes	No	Yes	Yes
30	G.S.S.Singh.B.pura	Yes	No	Yes	LPG	Yes	No	Yes	2	Monthly	Yes	No	Yes	Yes
31	G.U.P.S Balsanda	Yes	Yes	Yes	LPG	Yes	Yes	Yes	2	Monthly	Yes	No	Yes	Yes
32	G.P.S.Ropar	Yes	No	Yes	LPG	Yes	Yes	Yes	2	Monthly	Yes	No	Yes	Yes
33	G.P.S, Behrampur Z	Yes	No	Yes	LPG	Yes	Yes	Yes	2	Monthly	Yes	No	Yes	Yes
34	Middle S.Rangilpur	Yes	No	Yes	LPG	Yes	Yes	Yes	2	Monthly	Yes	No	Yes	Yes
35	G.P.S. Balsanda	Yes	No	Yes	LPG	Yes	Yes	Yes	2	Monthly	Yes	No	Yes	Yes
36	G.G.Sr. Sec S. Nangal Town	No	No	Yes	LPG	Yes	No	Yes	3	Monthly	Yes	No	No	Yes
37	G.H.S,Kalitran	Yes	Yes	Yes	LPG	Yes	Yes	Yes	3	Monthly	Yes	No	No	Yes
38	G.Sr.Sec.S, Nangal	No	No	Yes	LPG	Yes	Yes	Yes	2	Monthly	Yes	No	No	Yes
39	G.P.S.NayaNangal	Yes	No	Yes	LPG	Yes	Yes	Yes	2	Monthly	Yes	No	Yes	Yes
40	G.P.S.Kalitran	Yes	Yes	Yes	LPG	Yes	Yes	Yes	2	Monthly	Yes	No	Yes	Yes
41	G.H.S. Daroli	Yes	Yes	Yes	LPG	Yes	Yes	Yes	3	Monthly	Yes	Some	Yes	Yes
42	G.P.S. Daroli	Yes	Yes	Yes	LPG	Yes	Yes	Yes	2	Monthly	Yes	Some	Yes	Yes
43	G.AdarshSr.S.S.Lodhi pur	Yes	No	Yes	LPG	Yes	Yes	Yes	7	Monthly	Yes	No	Yes	Yes

