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### Perception of beneficiaries of mid-day meal programme and its impact on general health of girl students

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#### Abstract

Present paper is an attempt to explore the perceptions of girl students of 9-12 year of age regarding mid-day meal programme and to find out the impact of MDM on general health of students. In total 205 girls were personally interviewed from 8 schools of Udaipur district.

Results revealed that girls have positive perception about MDM. They like to go school because of MDM; the food is tasty and teachers are concerned about percolating good food habits in children. It was also found that girls are satisfied with the quantity served and they usually consume all the food served to them. When general health of girls was explored, it was found that majority of girls had fair appearance, normal conjunctiva, normal colour of hair, nails and tongue; no problem of night blindness, no visible thyroid, normal gums, normal lips, normal white teeth and bright skin. Thus the MDM has been successful in providing better nutrients to girls and therefore has positive impact on their general health.

**Keywords:** Mid-day meal, nutrition

#### Introduction

India is a fast growing economy yet more than one-third of malnourished children of the world live in India. The poor economic background of some population groups in India is one of the major causes of malnutrition in India. Global Hunger Index has defined hunger as distress associated with lack of food. Under nutrition is the situation of lack of energy, protein, essential vitamins and minerals in the food, which may be due to inadequate quantity or quality of food, poor absorption of nutrients because of infections or illness etc. Malnutrition includes both under nutrition and over nutrition. According to the State of Food Security and Nutrition in the World 2017 report, the number of undernourished people in the world increased to an estimated 815 million in 2016, up from 777 million in 2015. Data from the report showed that India is home to 190.7 million of them-a 14.5% prevalence of hunger vis-a-vis its total population. The data further showed that 38.4% of children under five in India are stunted, while 51.4% of women in reproductive ages are anemic. The report defines stunting as the result of long-term nutritional deprivation which may affect mental development, school performance and intellectual capacity. Looking at the data, government has taken several measures to mitigate the problem of malnutrition as well as low enrolment and attendance in primary and upper primary schools. Mid-day meal scheme is one of the important measures among those. This centrally sponsored scheme was launched on 15 August 1995, initially in 2408 blocks of the country. Later all blocks of the country were included in the scheme by 1997-98. The nutritional support was provided on one of the two forms: free supply of food grains and serving of cooked meal. In case of free supply of food grains the central assistance consisted of free supply of food grains at the rate of 3 kg per student per month whereas in case of cooked meal, the assistance was in the form of supply of food grains at the rate of 100 grams per student per day. Since its launch, several revisions in the scheme have taken place. In 2004, the central government decided to vest the implementation responsibility with the governments of states or union territories. These governments were made responsible for providing necessary infrastructure such as a kitchen cum store, adequate water for drinking and cooking/washing, cooking devices, containers for storage and utensils for cooking and serving, making all logistical/administrative arrangements necessary for regular serving of a

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regular serving of a wholesome, cooked mid-day meal of satisfactory quality and nutritive value.

Present paper is an attempt to find out and analyse the opinions of girl students, particularly of 9-12 years of age regarding the scheme.

### Review of Literature

Before proceeding towards data collection and analysis, it was considered necessary to review the available literature.

Kour (2018) <sup>[1]</sup> studied the significance of difference in the attitude of teachers towards mid-day meal scheme on the basis of gender and residential status. It was found that there is no significant difference in the attitude of male and female teachers towards mid-day meal scheme. It was also noted that there is no significant difference in the attitude of urban male and urban female teachers. The study concluded that there is no significant difference in the attitude of rural male & urban female teachers.

Malik, Venkatraman and Baby (2018) <sup>[2]</sup> collected opinion on perceived benefits by beneficiaries on functioning of the scheme in slums of Delhi with an objective to assess the perception, belief, opinion and acceptability of parents on Mid-day Meal Scheme. The results revealed that the children as well as parents were satisfied with the functioning of the programme, quality of food, menu. The children irrespective of their background were found to enjoy the sharing of food with visible social interaction.

Sofal (2018) <sup>[3]</sup> tried to find out the impact of Mid-Day Meal Scheme on enrollment of students at upper-primary level in schools. The results revealed that there was a significant impact of mid-day meal scheme on the enrolment and the retention of students at upper primary level in education.

Mall (2017) <sup>[4]</sup> assessed the performance of Mid-Day Meal on nutritional status of school going students. Result revealed that the thinness of nutrition was present in 50.91% of Boys and 41.82% of girls. Respondents agreed with lack of hygienic condition. Respondents agree with issue on lack of oil/ingredients/vegetables in meal, but respondents did not decide with the issue on lack of meal. It was concluded that there were statistically significant differences.

Nazni and Lone (2017) <sup>[5]</sup> compared the anthropometric measurements, intellectual, and social development of mid-day meal (MDM) and non-MDM (NMDM) beneficiaries. The results of the study revealed that there was a significant difference between the anthropometric measurement of MDM and NMDM beneficiaries. The NMDM beneficiaries have better development in terms of height and MUAC when compared to MDM beneficiaries. No such significant differences were found in intellectual and social development between these two groups.

Jayalakshmi and Jissa (2017) <sup>[6]</sup> assessed the nutritional status of 6–10-year-old schoolchildren who were the beneficiaries of MDM and the child-related factors affecting their nutritional status. Logistic regression analysis was used to estimate odds ratios (ORs) and 95% confidence intervals (CIs). This study showed a higher prevalence of under nutrition among school-age children who were the beneficiaries of MDM Programme, and this indicated the need for continuous nutritional interventions and surveillance among these children.

Nahida and Khan (2016) <sup>[7]</sup> estimated two weeks intake diet record was selected to complete a menu evaluation diary of their total daily intake between Government and Private schools. It was found that there was no significant relationship between them. The study found mid-day meal was nutritionally inferior to lunches in overall consumption of

nutrients in whole day compared to private school.

Sachan and Singh (2016) <sup>[8]</sup> conducted a cross-sectional study at three government primary schools Mid-Day Meal (MDM) in urban areas and three primary schools in rural areas in Kanpur district. Results of the study indicated the poor nutritional status of MDM children. Patel *et al.* (2016) <sup>[9]</sup> evaluated the effect of mid-day meal (MDM) on the nutritional status of adolescents and compared it with healthy comparison group. It was found that the percentage of stunting (24% boys and 19% girls) and wasting (17% boys and 18% girls) was significantly higher in adolescents receiving MDM. It was concluded that although MDM scheme restricted the percentage of stunting to some extent, the percentage of wasting was critical in terms of public health significance. MDM receiving adolescents were vulnerable to energy, protein, and micronutrient deficiencies. Singh and Gupta (2016) <sup>[10]</sup> evaluated the effectiveness of the mid-day meal to reduce malnutrition. Results showed that the highest prevalence of severe under nutrition was found among boys (26.7%). Similarly highest prevalence of severe stunting was more among non-MDM school boys (41.3%) followed by non MDM school girls (29.3%).

Byadagi, Sharan and Bhumarannavar (2016) <sup>[11]</sup> assessed anthropometry and health status among children of 14- 16 years age of three different sets of schools. It was observed that as age increased, anthropometric measurements also increased. Whereas, Triceps skin fold thickness (TSF) decreased with the age. Among three schools PHSC without MDM showed higher per cent of normal nutritional status at 46.0 and 47.0 per cent of mildly malnourished subjects in GHSB. Prevalence of anemia, flurosis, phrynoderma, vitamin B and C clinical deficiency were found to be high in subjects of GHSB when compared to subjects in other two schools.

Narad (2016) <sup>[12]</sup> aimed to explore the facilities available with respect to implementation of Mid-Day Meal scheme in government elementary schools and to identify the problems faced by the Mid-Day Meal in-charges with respect to implementation of Mid-Day Meal Scheme in Government Elementary Schools.

Giri, Nambiar and Joshi (2016) <sup>[13]</sup> conducted a situational analysis of MDM served through Akshay Patra and its impact on the nutritional status of children in rural area of Vadodara district. Nearly 80% of the students were undernourished; 58% suffered from mild anemia and Hs-CRP values were moderately high indicating prevalence of infections. Nath and Nath (2015) <sup>[14]</sup> attempted to find out the impact MDM programme on enrolment, retention and achievement level of the students. Results disclosed that after the introduction of mid-day meals the percentage of enrolment increased. Parents were more interested to send their children. Due to the introduction Mid-Day meals percentage of retention also increased. The rural teachers and headman had unanimously positive attitude towards this Mid-Day Meals scheme. Jayaraman and Simroth (2015) <sup>[15]</sup> made an evidence based impact assessment of Mid-day meals on enrolment. They reported large and statistically significant increase in primary school enrolment (6.6%), amounting to almost 19 additional students in primary school. The response remained positive, with smaller point estimates and statistically insignificant coefficients across all specifications in grades 4 and 5.

### Research Gaps

Majority of prior researches have attempted to explore the impact of MDM on enrollment and attendance along with the nutritional level of students. But very few researches have

focused on analyzing perceptions of beneficiaries particularly girl students. Further, very few researchers have focused on Rajasthan state. Thus this paper is an attempt to fill this gap.

**Research Methodology**

**Objectives**

The present study has following objectives:

1. To analyze the opinion of girls regarding MDM.
2. To study the effect of MDM programme on general health of girls of age 9-12 years.

**Area of the Study**

The study area of this research is Udaipur district and the universe of the study consisted of all girls of age 9-12 years studying in government schools where MDM is served.

School	Amba - mata	Ayad	Bhupal - Pura	Chhipi - Khera	Mavli	Sunder - vas	TDS	Vajmaye	Total
Students	25	25	26	25	25	26	26	27	205

**Questionnaire for Girls:** The selection of girls was subjective as there were many girls who were not ready to answer the questions. Some of the girls were thought to be inappropriate to have respondents as they were not able to represent the entire population. Therefore, researcher selected the respondents who could answer the questions honestly and confidently. Along with this, their nature and attitude was also considered after consulting their teachers and class-fellows. A detailed interview was held with these respondents after taking them into confidence. They were explained the objectives of the research in a layman’s language and made comfortable so that correct and true answers could be obtained.

The questionnaire given to girls respondents was divided into

**Data Collection and Sample**

The data for the study has been collected from eight schools of Udaipur district namely:

1. Government Girls Sr. Sec. School, Ambamata
2. Government Girls Sr. Sec. School, Ayad
3. Government Girls Sr. Sec. School, Bhupalpura
4. Government Girls Sr. Sec. School, Sunderwas
5. Government Girls Sr. Sec. School, Mavli
6. Government Girls Sr. Sec. School, Tulsi Das ji ki Sarai
7. Government Girls Sr. Sec. School, Chhipikhera
8. Government Girls Sr. Sec. School, Vajmeye

These schools were selected on convenient basis taking urban and rural areas into consideration. The sample consisted of the following:

five sections. First section dealt with their demographic information and food habits. In the second section 23 questions were asked to them regarding the mid-day meal served in the school. The last section dealt with 14 questions related to their general health.

**Tools and Techniques for Data Analysis**

For analyzing the demographic details of girls, frequencies and percentages were used. Questions regarding general health of girls were also analysed using frequencies and percentages.

**Demographic Profile of Respondents**

Table 1 displays the demographic profile of girl respondents.

**Table 1:** Demographic Profile of Respondents

Age	Frequency	Percent	Caste	Frequency	Percent
9.0	17	8.3	General	40	19.5
10.0	31	15.1	SC	41	20.0
11.0	32	15.6	ST	55	26.8
12.0	125	61.0	OBC	66	32.2
<b>Total</b>	<b>205</b>	<b>100.0</b>	Others	3	1.5
Family Type	Frequency	Percent	Total	205	100.0
Joint	91	44.4	Food Habits	Frequency	Percent
Nuclear	114	55.6	Vegetarian	97	47.3
<b>Total</b>	<b>205</b>	<b>100.0</b>	Non-vegetarian	108	52.7
			<b>Total</b>	<b>205</b>	<b>100.0</b>

It is clear that majority of respondents that is 61% girls are of 12 years of age, 15.6 1% girls are of 11 years of age and 15.1 2% girls are of 10 years of age. The least number of girls were of 9 years of age. This shows that the majority of girls are of upper age due to the fact that they are capable of giving responses. Majority of girls are from general category that is 32.2 percent. 26.83% were from ST category and 20% were from SC category. The least number of girls were from others category that is 1.46 % and from OBC category there were 19.51% girls. 44.39% girls are from joint family whereas

55.61% girls belong to nuclear family this shows that the distribution of girls according to their families is almost equal. It is clearly found that 47 percent girls are vegetarian on the other hand 52.68% girls are non-vegetarian again here also it is proved that the distribution of girls according to their food habits is almost equal.

**Perceptions about Mid Day Meal**

Then the girls were asked certain questions about MDM and their responses have been tabulated in Table 2.

**Table 2:** Opinion of Girls regarding Various Aspects of MDM

S. No.	Question	Yes		No	
		N	%	N	%
1	Do you get mid day meal in your school regularly?	205	100	-	-
2	Do you like the food provided in mid day meal?	199	97.1	6	2.9
3	Is the food according to your taste?	191	93.2	14	6.8
4	Is the quantity of food served sufficient?	205	100	-	-
5	Do you consume all the food served to you?	178	86.8	27	13.2

6	Are you served the mid day meal in a proper way (by letting you sit on a mat)	205	100	-	-
7	You consume the food served in containers	205	100	-	-
8	Is your teacher there when the food is served?	205	100	-	-
9	Does your teacher also eat the mid day meal?	205	100	-	-
10	Do they serve the meal affectionately?	205	100	-	-
11	Do all students sit together for mid day meal without any discrimination?	205	100	-	-
12	Did you ever fell ill after eating mid day meal at school?	-	-	205	100
13	Do your parents regularly ask about the food provided in mid day meal?	137	66.8	68	33.2
14	Is soap and water always there in the school to wash your hands?	205	100	-	-
15	Does your teacher encourage you to adopt good food habits like washing hands, cutting nails, cleaning your plates etc.	205	100	-	-
16	Do you properly clean your dish after meal?	205	100	-	-
17	Do you like to go to school because of mid day meal provided in recess?	164		41	
18	Do you get less time to play due to mid-day meal?	205	100	-	-
19	Do you feel sleepy after having your mid-day meal?	-	-	205	100

It is clear that all girls in the sample said that they get MDM regularly in the school and 199 girls said that they like the taste of the food provided in MDM, 191 girls said that the food is according to their taste and 178 girls said that they consume all the food served to them. Then all the girls said that the mid day meal is served to them in proper way, food is served in containers; their teachers remain present there while MDM is served, teachers also eat MDM; meal is served affectionately and without discrimination. All the students said that they are asked to wash their hands before and after

meal, they encourage them to adopt good and hygiene habits, they are asked to wash their plates after meal. All the girls also said that they have never fell ill after eating MDM nor they feel sleepy due to MDM. Parents are also eager to know about MDM as 137 girls said that their parents ask about MDM regularly. 164 girls said that they go to school because of MDM. Girls also said that they get less time to play due to MDM.

Table 3 presents the results of general observation of physical appearance of girl students.

**Table 3:** General Health of Student

General Appearance	Frequency	Percent	Conjunctiva	Frequency	Percent
Healthy	6	2.9	Normal	157	76.6
Fair	173	84.4	Pale	47	22.9
Poor	25	12.2	Missing	1	.5
Missing	1	.5	<b>Total</b>	<b>205</b>	<b>100.0</b>
<b>Total</b>	<b>205</b>	<b>100.0</b>	<b>Night Blindness</b>	<b>Frequency</b>	<b>Percent</b>
<b>Gums</b>	<b>Frequency</b>	<b>Percent</b>	No	200	97.6
Normal	200	97.6	Yes	4	2.0
Bleeding	3	1.5	Missing	1	.5
Missing	2	1.0	<b>Total</b>	<b>205</b>	<b>100.0</b>
<b>Total</b>	<b>205</b>	<b>100.0</b>	<b>Nail Colour</b>	<b>Frequency</b>	<b>Percent</b>
<b>Thyroid</b>	<b>Frequency</b>	<b>Percent</b>	Normal	182	88.8
Yes	3	1.5	Pale	10	4.9
No	201	98.0	Yellowish	1	.5
Missing	1	.5	Brittle	11	5.4
<b>Total</b>	<b>205</b>	<b>100.0</b>	Missing	1	.5
<b>Colour of Tongue</b>	<b>Frequency</b>	<b>Percent</b>	<b>Total</b>	<b>205</b>	<b>100.0</b>
Normal	187	91.2	<b>Weakness</b>	<b>Frequency</b>	<b>Percent</b>
Pale and Coated	17	8.3	Yes	39	19.0
Missing	1	.5	No	165	80.5
<b>Total</b>	<b>205</b>	<b>100.0</b>	Missing	1	.5
<b>Headache</b>	<b>Frequency</b>	<b>Percent</b>	<b>Total</b>	<b>205</b>	<b>100.0</b>
Yes	44	21.5	<b>Poor Memory</b>	<b>Frequency</b>	<b>Percent</b>
No	160	78.0	No	204	99.5
Missing	1	.5	Missing	1	.5
<b>Total</b>	<b>205</b>	<b>100.0</b>	<b>Total</b>	<b>205</b>	<b>100.0</b>
<b>Hair</b>	<b>Frequency</b>	<b>Percent</b>	<b>Lips</b>	<b>Frequency</b>	<b>Percent</b>
Normal	202	98.5	Normal	140	68.3
Pigmented	1	.5	Dry	61	29.8
Brittle	1	.5	Cracked	3	1.5
Missing	1	.5	Missing	1	.5
<b>Total</b>	<b>205</b>	<b>100.0</b>	<b>Total</b>	<b>205</b>	<b>100.0</b>
<b>Teeth</b>	<b>Frequency</b>	<b>Percent</b>	<b>Skin</b>	<b>Frequency</b>	<b>Percent</b>
Normal White	156	76.1	Normal and Bright	204	99.5
Pale	1	.5	Missing	1	.5
Pitted	5	2.4	<b>Total</b>	<b>205</b>	<b>100.0</b>
Yellow/Brown	42	20.5			
Missing	1	.5			
<b>Total</b>	<b>205</b>	<b>100.0</b>			

**General Appearance:** It is clear from the results that out of total 205 girls only 6 girls appeared to be healthy, 173 girls

were fairly healthy, 25 girls' health was poor and data for one respondent could not be obtained does looking at the data that

can be concluded that majority of girls are really healthy.

**Nails, Eyes, Tongue, Gums and Thyroid:** Results revealed that out of 205 girls 157 had normal conjunctiva, that of 47 girls was pale and data for one girl could not be obtained does here also it can be concluded that majority of girls had normal conjunctive are as more than 75% girls had normal conjunctiva. It was found that colour of nails of 182 girls was normal, nails of 10 girls were pale, colour of nails of one girl was yellowish whereas 11 girls had brittle nails. In this way more than 88% girls had normal nails therefore it can be concluded that majority of girls' nails are normal. Surprisingly results reveal that only 4 girls had the problem of night blindness where as 200 girls did not have the problem of night blindness. In this way it can be concluded that majority of girls did not have the problem of night blindness. It is found that colour of tongue of more than 91% girls (187) was normal, 17 girls had pale and coated tongue. Thus it can be concluded that tongue of majority of girls had normal colour. More than 97% girls (200) had normal gums whereas only 1.5% (3) girls had bleeding gums. Here also it can be concluded that majority of girls had normal gums conditions. In 98% (201) girls, thyroid was not visible. On the other hand only 3 girls i.e. 1.5 % girls had thyroid visible at their throats.

**Memory, Headaches, Weakness and Tiredness:** Surprisingly all the girls that is 204 girls did not have the problem of poor memory. Thus it can be concluded that all the girls do not have the problem of poor memory. Around 21.5% (44) girls confirm that they have the problem of frequent headaches whereas 78% girls said that they do not have the problem of headache. The majority of girls do not have the problem of headache. Out of 205 girls 39 girls said that they have the problem of weakness and tiredness very often whereas 165 girls said that they do not the problem of weakness and tiredness. Thus it can be concluded that majority of girls do not have the problem of weakness and tiredness.

**Condition of Hair, Lips, Teeth and Skin:** Out of 205 girls, hairs of 202 girls were normal, one girl had pigmented hair, one girl had brittle hair and data for one girl could not be obtained. This way it can be concluded that majority of girls had normal hair. Results reveal that condition of lips of 140 girls was normal, 61 girls had dry lips Where are lips of 3 girls were cracked. Data for one girl could not be obtained. Thus it can be concluded that condition of lips of majority of girls was normal. Results revealed that teeth of 156 girls for normal white and this proves that majority of girls had normal colour of their teeth. 5 girls had with 30 and 42 girls had Yellow or brownish teeth. Results revealed that all the girls had normal and bright skin and data for one girl could not be obtained. Therefore it can be concluded that the condition of skin of all girl respondents is normal.

### Conclusion

Present paper is an attempt to explore the perceptions of girl students of 9-12 year of age regarding mid-day meal programme and to find out the impact of MDM on general health of students. In total 205 girls were personally interviewed from 8 schools of Udaipur district. Results revealed that girls have positive perception about MDM. They like to go school because of MDM; the food is tasty and teachers are concerned about percolating good food habits in children. It was also found that girls are satisfied with the

quantity served and they usually consume all the food served to them. When general health of girls was explored, it was found that majority of girls had fair appearance, normal conjunctiva, normal colour of hair, nails and tongue; no problem of night blindness, no visible thyroid, normal gums, normal lips, normal white teeth and bright skin. Thus the MDM has been successful in providing better nutrients to girls and therefore has positive impact on their general health.

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