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RESEARCH ARTICLE

Perception of School Student Parents under Mid-day Meal Scheme (MDMS) in Paschim Medinipur District of West Bengal, India

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ABSTRACT

The mid-day meal scheme (MDMS) is one of India's largest child welfare interventions aimed at reducing classroom hunger and improving educational and nutritional outcomes, particularly among disadvantaged groups. This study examines the perceptions of parents of tribal and non-tribal schoolchildren regarding the implementation and impact of MDMS in Paschim Medinipur district of West Bengal, a region marked by socio-economic vulnerability and significant tribal concentration. Using a purposive-cum-random sampling method, data were collected from parents of 240 students (120 tribal and 120 non-tribal) enrolled in classes V–VIII across four selected schools. A pre-tested semi-structured questionnaire was used, and the data were analyzed through percentages, Kendall's tau correlation, and constraints ranking. Findings reveal high participation and strong parental satisfaction, particularly among tribal households. Parents widely acknowledged improvements in children's health, weight, height, nutritional status, activeness, and school attendance. Hygiene in food preparation and regularity of meal service were also positively rated. Correlation analyses demonstrated significant associations between MDMS outcomes and parental socio-demographic characteristics, including education, income, and family type. Despite positive impacts, constraints such as food quality, menu monotony, inadequate cleanliness, and occasional misbehavior during food distribution were reported. Overall, MDMS remains a vital support mechanism, especially for tribal families, enhancing child nutrition, motivation, and school retention.

Key words: Education, impact, mid-day meal, nutrition, school, students

INTRODUCTION

Ensuring that children do not attend school hungry has long been a national concern in India. The mid-day meal scheme (MDMS), rooted in the belief that children cannot learn effectively on an empty stomach, represents one of the world's largest school feeding programs, reaching over 120 million students daily. Initiated through earlier state-level efforts and formalized nationally in 1995 under the National Programme of Nutritional Support to Primary Education, the scheme mandates the provision of a nutritious cooked lunch to all children enrolled in government and government-aided schools. By reducing classroom hunger, MDMS aims to enhance students' concentration, improve academic performance, and encourage higher school enrolment and retention, particularly among children from economically and socially disadvantaged households. The program plays a crucial role in districts like Paschim Medinipur, which has a significant tribal population characterized by socio-economic vulnerability, low literacy rates, and limited access to nutritional and health resources. For many poor and tribal families, the assured daily meal serves as a major incentive

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to send children to school. Understanding parents' perceptions of MDMS is essential, as their attitudes directly influence children's participation and the program's effectiveness. Against this backdrop, the present study investigates the perception of school-student parents regarding MDMS in the Paschim Medinipur district of West Bengal, India.

RESEARCH METHODOLOGY

A robust methodology forms the foundation of any scientific investigation, ensuring the reliability and accuracy of findings. The present study was conducted in the Paschim Medinipur district of West Bengal, purposively selected due to the researchers' familiarity with the local language and socio-cultural setting, which facilitated rapport-building and smooth access to respondents. The district, one of the largest in the state with significant tribal concentration, offers high potential for examining the impact of the MDMS among tribal and non-tribal school students. The study focused on school-going children aged 10–14 years from Belda and Dantan-I blocks. From each block, two schools- one tribal and one non-tribal were selected. A total of 240 students were chosen through random sampling: 120 from tribal schools and 120 from non-tribal schools, all belonging to classes V-VIII and regularly availing the mid-day meal (MDM). Data were collected using a pre-designed, pre-tested semi-structured questionnaire. The compiled data were validated, tabulated, and analyzed using appropriate statistical tools such as percentages, correlation analysis, and constraints ranking. These analytical techniques enabled meaningful interpretation and supported the study's conclusions.

RESULTS AND DISCUSSION

The data analysed in table 1 revealed that among tribal and nontribal parents, all the non-tribal parents (100.00%) ready to send their children school regularly without mid-day meal, but among tribal parents, respondent only (76.70%) parents ready to send their children in school without mid-day meal. The survey also found that majority of respondents from tribal (80.80%) all friends eat MDM but non-tribal respondents' children's friends (64.20%) eat

Table 1: Study on MDM-related variables of the parents (guardians) of tribal and non-tribal school students under the MDM Scheme in terms of percentage distribution from the Paschim Medinipur district of West Bengal, India

Sl. no.	Particulars of statements	Non-tribal student (120)		Tribal student (120)	
		Freq.	Percentage	Freq.	Percentage
1	Attend school without MDM				
	Yes	119	100.00	92	76.70
	No	00	0.00	28	23.30
2	All friends take MDM				
	No	43	35.8	23	19.20
	Yes	77	64.20	97	80.80
3	Maintain hygiene to prepare MDM				
	No	09	7.5	01	0.8
	Yes	111	92.5	119	99.2
4	Students attend school regularly				
	No	00	0.0	04	3.4
	Yes	118	98.3	116	96.6
5	Students take MDM				
	No	07	6.0	00	0.0
	Yes	109	94.0	120	100.0
6	Child interested to take MDM				
	No	09	7.8	01	0.8
	Yes	111	92.2	119	99.2
7	If no, specify reason				
	1	06	66.7	01	100.0
	2	01	11.1	00	0.0
	3	01	11.1	00	0.0
	4	01	11.1	00	0.0
8	MDM effects on health				
	No	17	14.8	01	0.8
	Yes	98	85.2	119	99.2
9	Weight gain of the students				
	1	20	20.0	25	21.0
	2	50	50.0	68	57.1
	3	20	20.0	26	21.8
	4	10	10.0	00	0.0
10	Height increase of students				
	1	01	1.0	12	10.0
	2	38	38.0	62	51.7
	3	59	59.0	34	28.3
	4	02	2.0	12	10.0
11	Attendance increased				
	No	2	1.8	0	0.0
	Yes	112	98.2	120	100.0
12	Active participation of students				
	No	3	2.6	14	11.7
	Yes	111	97.4	106	88.3

(Contd...)

Table 1: *(Continued)*

Sl. no.	Particulars of statements	Non-tribal student (120)		Tribal student (120)	
		Freq.	Percentage	Freq.	Percentage
13	Working capability increased				
	No	11	9.6	2	1.7
	Yes	103	90.4	118	98.3

MDM: Mid-day meal

MDM, among parents regarding hygiene, tribal parents (99.2%) say they maintain hygiene food preparation in school, but among non-tribal parents, (92.5%) agree. Majority of non-tribal respondents (98.3%) send their children to regular school, whereas 96.6% tribal parents send their children to regular school. The survey revealed that non-tribal school-going students (94.00%) take MDM at school, and almost all tribal respondents take their children (100%) MDM regularly at school, which further shows the aim and objective of the project. The survey found that majority of the respondents (99.2%) going to tribal school, who list inclined to eat MDM, then the non-tribal respondents, only (92.2%) considering the issues in health data, analytical work, it was found that majority of tribal respondents (99.2%) agree that MDM affects their children's health. Such as weight, gain, height, increase, working capacity increased. MDM also increased their attendance rate in schools. Their children of non-tribal respondents (97.4%) where active and children of tribal respondents, 88.3% also children of non-tribal respondents, 98.3% were more active than children of tribal respondents 90.4%, less than non-tribal respondents. Verma, and Bhattacharya and Sarkar (2010) found that the MDMS is the largest school meal program in India and the world, aims to enhance enrolment, retention, and attendance among primary school children while simultaneously improving their nutritional levels.

This study, as shown in Table 2, also showed that India is improving the health and nutritional status of respondents. Children were (100%) tribal respondents agree, but non-tribal respondents (93.9) agree on this point. The satisfaction of tribal respondents in MDM is 99.2% while the percentage of non-tribal respondents is 92.2%. The survey also shows that non-tribal parents (tribal parents (94.4%) and tribal parents (93.3%) are aware about MDM, non-tribal say very good (43.5%) and good (42.6%)

Table 2: Study MDM-related variables of the parents (guardians) of tribal and non-tribal school students under MDM scheme in terms of percentage distribution from Paschim Medinipur district of West Bengal, India (*n*=120)

Sl. no.	Particulars of statements	Non-tribal student		Tribal student	
		Freq.	Percentage	Freq.	Percentage
1	MDM increases the nutritional status of the child				
	No	07	6.10	00	0.0
	Yes	107	93.9	120	100.0
2	Satisfy MDM				
	No	09	7.8	01	0.8
	Yes	106	92.2	118	99.2
3	Knowledge about serving MDM				
	No	06	5.2	08	6.7
	Yes	109	94.8	112	93.3
4	If yes, frequency				
	Increase	84	77.1	107	95.5
	No impact	25	22.9	04	3.6
	Decrease	00	0.0	01	0.9
5	Opinion in MDM				
	Excellent	50	43.5	81	67.5
	Good	49	42.6	36	30.0
	Average	16	13.9	03	2.5
6	Effect of MDM interested in school				
	Go Regular	95	82.6	109	91.6
	Go sometime	10	8.7	07	5.9
	Go only for food	03	2.6	03	2.5
	Any other	07	6.1	00	0.0
7	Effect of MDM attendance in school				
	Increase	87	75.7	106	88.3
	No Impact	26	22.6	11	9.2
	Decrease	00	0.0	03	2.5
	Any other	02	1.7	00	0.0
8	MDM received dry food during COVID-19				
	Yes	114	99.1	118	100.0
	No	01	0.9	00	0.0
9	MDM distribution COVID-19 satisfaction				
	No	02	1.7	01	0.8
	Yes	113	98.3	117	99.2
10	Benefited from MDM during the COVID-19 time				
	Too much	35	30.4	73	60.8
	Helpful	45	39.1	42	35.0
	Equally	34	29.6	05	4.2
	Not helped	01	0.9	00	0.0

MDM: Mid-day meal

there tribal parents say very good (67.5%) and good (30.0%) which means that tribal parents are more happy with MDM as compared to non-tribal parents. The survey showed that the percentage of

non-tribal parents (82.6%) says that they attend school daily, but the percentage of tribal parents (91.6%) says that their children attend school daily. Furthermore, the attendance rate of children in school. For this school lunch is higher than that of non-tribal (75.7%). However, the effects of MDM in case of tribal children are almost more (88.3%), while the percentage of non-tribal parents (22.6%) say no effects. There is a lower percentage of tribal parents (9.2%), no effect. There is an overall good experience for implementing this scheme due to the closure of school during the COVID-19 time; dry ration is provided by the school. It is seen that non-tribal parents took 99.1, where tribal parents took (100%), and also tribal parents were happier about this issue (99.2), where non-tribal parents were happy (98.3%) overall or happy. In this survey, when we try to know how much non-tribal parents and tribal parents have benefited from this system, we find that (30.4%) of non-tribal parents are very happy and (39.1%) of parents say fairly, and some parents (29.6%) say equal and no help at all (0.9%) very less. Their tribal parents are very happy (60.8%) of them say fair (35.0%) and equally (4.2%) parents say equal, so we can understand that tribal parents are happier than non-tribal parents in the system. Shalinic, Murthy *et al*. (2014), Mukherjee and Mathew and Raajan Gubenthira were assessed the impact of nutritional status of school students aged 5–15 years receiving MDMs in rural schools as well as urban schools in Bengaluru, India and found a satisfactory result, supporting the present study.

The correlation coefficient between the impact of middle health, hygiene and motivation and the independent variable is parents of tribal students well calculated for the overall respondent sample

Table 3: Pearson correlation test between the impact of MDM (health, hygiene, and motivation) and selected independent variables of parents of tribal students under MDM scheme from Paschim Medinipur district of West Bengal, India

Sl. no.	Particulars of statements	Pearson correlation coefficient (γ) of parents of tribal students (120 Nos.)		
		22. Improved Health (Y1)	26. Improved hygiene (Y2)	27. Motivation of child (Y3)
1	Age of parents	0.074	0.210*	0.064
2	Sex of parents	0.008	0.125	−0.027
3	Family type	0.064	0.182*	−0.207*
4	Education of parents	0.189*	0.076	0.091
5	Occupation of parents	−0.108	0.120	0.211*
6	Religion of parents	0.030	0.004	015
7	Caste of parents	0.00	0.00	0.00
8	Monthly income of parents	0.169	−0.029	−0.179*
9	Child attend school regularly	0.017	0.032	0.067
10	Child not attend school regularly	−0.017	−0.032	−0.067
11	Child wants to eat MDM in school	−1.000**	0.063	0.033
12	Child not allowed to take MDM in school	1.000	0.007	0.131
13	Weight gain taking MDM	0.135	−0.007	293**
14	Height increased taking MDM	0.046	0.186*	0.266**
15	Activeness in studies	−0.033	0.00	−0.081
16	Performance increased	−0.012	210*	−0.416**
17	Nutrition of the child increased	0.00	0.187*	0.00
18	Satisfaction with food quality	0.008	0.00	−0.242**
19	Regularity in serving meal	0.024	0.271**	−0.004
20	Frequency in serving Meal	0.007	0.790**	0.260**
21	Afternoon attendance (28)	0.293**	1.00	0.239**
22	Socialization process of child	0.033	0.239**	−0.012
23	MDM taken during COVID-19	0.036	0.000	0.327**
24	Opinion for Dry ration during COVID-19 in MDM	−0.008	−0.188*	0.033
25	Benefit of dry ration COVID-19 in MDM	0.071	−0.041	0.066

N.B. ***P*>0.01 highly significant at 1% level and **P*>0.05 significant at 5% level. MDM: Mid-day meal

of school students. Table 3 indicates that in the case of overall tribal parents, the improvement in health status and only parents' education variables had a significantly correlation ($P < 0.05$) and only parents' higher education is highly significant ($P < 0.01$) correlation between improvement in health status, wanting to eat MDM at school and afternoon attendance.

Correlation coefficient between improved of hygiene, knowledge to MDM of tribal parents namely age, family, type, height increased to take MDM, performance increased, increased nutrition's of child and opinion for dry ration during COVID-19 in MDM had significantly correlation ($P < 0.05$) and highly significant correlation ($P < 0.01$) between improvement in hygiene, regularity in serving meal, frequency in serving meal, socialization process of tribal students.

The correlation coefficient between impact of MDM (health, hygiene and motivation) and independent variable of tribal students' parents in table number-3 indicates that, in the case of tribal parents, the improvement in health status and only variables i.e. parents education had significantly correlated ($P < 0.01$) and showed highly significant ($P < 0.01$) correlation between improvement in health status and wants to eat mid-day meal at school and afternoon attendance.

Correlation coefficient between improved hygiene to MDM of tribal parents and variables namely-age, family, type, height increased to take MDM, performance increased, increased nutrition's of child and opinion for dry ration during COVID in mid-day meal had significant correlation ($P < 0.01$) and highly significant correlation ($P < 0.01$) between improvement in hygiene with regularity in serving Meal, frequency in serving Meal, socialization process of tribal students.

Correlation coefficients between motivations of child to MDM of tribal parents revealed that, he

Table 4: Correlation test between the impact of MDM (attendance, socialization process, and impact of COVID-19) and selected independent variables of parents of tribal students from Paschim Medinipur district of West Bengal, India

Sl. no.	Particulars of statements	Pearson correlation coefficient (γ) of parents of tribal student (120 Nos.)		
		28. Afternoon attendance (Y4)	29. Socialization process (Y4)	32. Impact of COVID-19 (Y5)
1	Age of parents	0.185*	187*	−0.091
2	Sex of parents	−0.033	−0.036	−0.071
3	Family type	0.191*	0.147	−0.044
4	Education of parents	265**	0.051	0.149
5	Occupation of parents	0.093	−0.034	0.037
6	Religion of parents	−0.119	−0.130	−0.201*
7	Caste of parents	0.00	0.00	0.00
8	Monthly income of parents	−0.179*	−0.288**	0.232**
9	Child attend school regularly	0.067	0.073	0.020
10	The child not attend school regularly	−0.067	−0.073	−0.020
11	The child wants to eat MDM in school	0.033	0.036	0.071
12	Child not allowed to take MDM in school	−0.033	−0.036	−0.071
13	MDM impacted on health	0.033	0.036	0.071
14	Weight gain taking MDM	0.152	0.068	−0.115
15	Height increased taking MDM	0.129	−0.009	0.006
16	Activeness in studies of child taking MDM	0.053	−0.163	−0.083
17	Performance increased	0.047	−0.140	−0.023
18	Nutrition of child increased	−0.242**	0.00	0.00
19	Satisfaction with the food quality of MDM	−0.004	−0.234*	−0.103
20	Regularity in serving meal	0.260**	−0.288**	−0.238**
21	Frequency in serving meal	0.239**	−0.120	−0.209*
22	Hygienic status of food	−0.012	0.062	0.059
23	Motivation of child in MDM	0.327**	0.327**	0.378**

N.B. **P>0.01 highly significant at 1% level and *P>0.05 significant at 5% level. MDM: Mid-day meal

family type, occupations and Monthly income variables had significant correlation ($P < 0.01$) and weight gain by taking MDM, height increased, performance increased, satisfactions of food quality, frequency in serving meal, afternoon attendance and MDM taken during COVID were highly significant ($P < 0.01$) correlations with motivation of tribal student in the study.

Similarly, a detailed observations of Table 4 indicate that in case of overall tribal parents, there were significantly correlation ($P < 0.05$) between improvement of afternoon, attendance and variables namely, age, family type, income, and highly correlation significantly ($P < 0.01$) between improvement of afternoon attendance, education of parents, increased nutrition of child, regularity in serving meal, frequency in serving meal and motivations of tribal students in MDM. Correlation coefficients between the socialization process of students to MDM of tribal parents, the age, satisfaction with food quality, had to significant correlation ($P < 0.05$) between monthly income, regularity in serving MDM, and motivations of children in MDM highly significant ($P < 0.01$) correlation between improvement of the socialization process of tribal students in school.

Correlation coefficients between socialization process of tribal parents, the age, satisfaction as a food quality had to significantly correlation ($P < 0.05$) between monthly income ,regularity in serving MDM, and motivations of child in mid-day meal highly significant ($P < 0.01$) correlation

Table 5: Correlation test between impact of MDM (health, hygiene, and motivation) and selected independent variables of parents of non-tribal students under MDM scheme from Paschim Medinipur district of West Bengal, India

Sl. no.	Particulars of statements	Pearson correlation coefficient (γ) of parents of non-tribal students (120 Nos.)		
		Improved health (Y1)	Improved hygiene (Y2)	Motivation of child (Y3)
1	Age of parents	−0.100	0.054	0.086
2	Sex of parents	−0.095	0.029	−0.123
3	Family type	−0.161	0.062	0.104
4	Education of parents	−0.129	0.084	0.066
5	Occupation of parents	−0.020	0.073	−0.082
6	Religion of parents	0.044	−0.164	−0.086
7	Caste of parents	0.110	0.008	−0.073
8	Monthly income of parents	−0.057	0.005	0.078
9	Child attend school regularly	0.055	0.060	−0.064
10	Child not attend school regularly	0.592**	−0.371**	−0.117
11	Allow child to take MDM in school	0.549**	−0.298**	−0.136
12	Child wants to eat MDM in school	−0.585**	0.265**	0.091
13	Child not allowed to take MM IN school	0.00	−0.306**	−0.289**
14	Weight gain taking MDM	0.422**	−0.165*	−0.058
15	Height increased taking MDM	0.406**	−0.152	−0.282**
16	Attendance frequency increased taking MDM	0.381**	−0.239**	−0.065
17	Activeness in studies	0.442**	−0.277**	−0.133
18	Performance increased	0.405**	−0.186*	−0.029
19	Nutrition of child increased	0.543**	−0.280**	−0.282**
20	Satisfaction with food quality	0.412**	−0.327**	−0.091
21	Regularity in serving meal	0.011	0.065	0.113
22	Frequency in serving meal	−0.072	0.067	0.096
23	Afternoon attendance (28)	−0.306**	1.000	0.153
24	Socialization process of child (29)	0.289**	0.153	0.00
25	MDM taken during COVID-19	0.437**	250**	0.403**
26	Opinion on dry ration during COVID-19 in MDM	0.039	0.310**	0.371**
27	Benefit of dry ration during COVID-19 in MDM	0.310**	0.194*	0.045

N.B. ***P*>0.01 highly significant at 1% level and **P*>0.05 significant at 5% level. MDM: Mid-day meal

between improvement of socialization process of tribal student in school.

Correlation coefficient between impacts of COVID situations to students of mid-day meal in non-tribal parents. The variables as- religion, frequency in serving Meal, were correlation significant ($P < 0.05$) and monthly income of parents, regularity in serving Meal and motivation of child were highly significant ($P < 0.01$) correlations between impact of COVID on tribal students.

Similarly, detailed observations of Table 5 indicate that in case of overall non-tribal parents, there were significant correlations ($P < 0.05$) between improvements of hygiene. Independent variables has weight gain, taking MDM, performance, increased and benefits of dry ration during COVID-19 in MDM and variables namely child not attendance School regularly, allow child to take MDM, child wants to eat MDM, child not allowed to take MDM, attendance frequency increase taking MDM, activeness in studies, increased nutrition of child, satisfaction of food quality, MDM taking during COVID-19 and opinion for dry ration during COVID-19 in MDM highly correlation significantly ($P < 0.01$) between improvement of hygiene of non-tribal students.

Correlation confusion between improved hygiene of students and MDM of non-tribal parents with respect to variables, namely, the benefit of dry ration during COVID-19, MDM found to be significantly ($P < 0.05$) correlations. Similarly, some independent variables such as weight gain, taking MDM, What performance increased have to significance correlations with improved hygiene of child and MDM taken during COVID-19, opinion for dry ration during COVID-19 in MDM highly significant ($P < 0.01$) correlations between improvement of hygiene. Similarly, some independent variables such as child not attending school regularly, allowed child take MDM, child is not allowed to take MDM, weight gain, taking MDM, height increased, attendance frequency, increases, activeness, increased nutrition, and satisfaction with food quality, have the significant correlations with improved hygiene of non-tribal students. It was again noted that there was a significant ($P < 0.05$) relationship between non-tribal students. Parents are not allowed to take MDM, so maybe affected their improvement of hygiene conditions. Naik and Dasaratharamaiah (2019), Arnab (2023) found that education is one of the essential means of empowering women with the knowledge, skills, and self-confidence, which is necessary to participate fully in the extension process.

The correlation coefficient between motivations of MDM Student of non-tribal parents. The variables namely- MDM taken during COVID, opinion for dry ration during COVID were highly significant ($P < 0.01$) correlation. Similarly, some independent variables like-child not allowed to take MDM in School, height increase taking MDM, nutrition of child increased were highly negative significant correlation ($P < 0.01$) for non-tribal students. This may be due to the closure of the school during the COVID periods, as the children's did not get to eat food every day and the school arranges to give dry food, once a month, which sometimes some parents could not take the MDM, because they did not get the news.

Table 6 reveals that in case of impact of MDM ($n = 120$) of non-tribal parents, there were a significant correlation ($P < 0.05$) between improvement of afternoon attendance and variable education of parents. Significantly, some independent variables like weight gain taking MDM have significant correlations with improvement afternoon attendance of child, where highly significant correlation ($P < 0.01$) between improvement of afternoon attendance and child wants to eat MDM, frequency of serving meal, hygienic status of food. It was again observed that there were significant correlations ($P < 0.01$) between the dependent variables. Like child not attending school regularly, allowing the child to take MDM, and not allowing the child to take MDM, height increased, taking MDM attendance frequency increased, performance increased, and an increase in child nutrition.

The non-tribal students' depend on their parental education may influence children's attendance. Whether or not parents allow children to participate in lunch may or may not influence children's height and body weight.

Correlations coefficient between socialization processes of students and MDM of tribal parents. There were significant correlations ($P < 0.05$) between improvement of socialization process

Table 6: Correlation test between the impact of MDM (attendance, socialization process, and impact of COVID-19) and selected independent variables of parents of non-tribal students from Paschim Medinipur district of West Bengal, India

Sl. no.	Particulars of statements	Pearson correlation coefficient (γ) of parents of non-tribal student (120 Nos.)		
		28. Afternoon attendance (Y4)	29. Socialization Process (Y4)	32. Impact of COVID-19 (Y5)
1	Age of parents	−0.011	−0.090	−0.200*
2	Sex of parents	0.007	−0.042	0.029
3	Family type	0.051	−0.020	−0.248**
4	Education of parents	0.166*	0.191*	0.233**
5	Occupation of parents	0.019	0.051	0.312**
6	Religion of parents	−0.051	−0.151	−0.200*
7	Caste of parents	−0.039	−0.092	−0.233**
8	Monthly income of parents	0.069	0.034	0.273**
9	Child attend school regularly	0.064	0.031	0.148
10	Child does not attend school regularly	−0.414**	−0.184*	−0.283**
11	Allow the child to take MDM in school	−0.428**	−0.149	−0.270**
12	Child wants to eat MDM in school	0.461**	0.119	0.248**
13	Child not allowed to take MDM in school	−0.437**	−0.148	−0.091
14	MDM impacted on health	−0.085	0.055	0.047
15	Weight gain taking MDM	−0.190*	−0.101	0.025
16	Height increased taking MDM	−0.284**	−0.025	−0.182*
17	Attendance frequency increased taking MDM	−0.321**	−0.076	−0.211*
18	Activeness in studies of child taking MDM	−0.120	0.059	0.080
19	Performance increased	−0.369**	−0.110	−0.225**
20	Nutrition of the child increased	−0.281**	−0.164	−0.136
21	Satisfaction with food quality of MDM	0.030	0.090	0.058
22	Regularity in serving meal	0.157	0.004	−0.142
23	Frequency in serving meal	0.250**	0.310**	0.085
24	Hygienic status of food	0.403**	0.371**	0.067
25	Motivation of child in MDM	0.145	475**	0.405**

N.B. ***P*>0.01 highly significant at 1% level and **P*>0.05 significant at 5% level. MDM: Mid-day meal

Table 7: Constraints faced by the guardian of tribal and non-tribal school students under MDM Scheme from Paschim Medinipur district of West Bengal, India

Sl. no.	Constraints faced by the guardian of tribal and non-tribal school students	Mean score	Rank
1	Food quality is not good, so I do not allow to eat MDM.	59.10	I
2	My child is a vegetarian, so I do not allow with them.	58.15	II
3	I don't allow MDM eat because those who serve food misbehave with my child.	48.40	III
4	School does not maintain proper hygiene.	44.00	IV
5	My child is not interested in school's cooked food, so I don't think about it.	40.35	V

MDM: Mid-day meal

status and variables educations of parents, significantly some independent variables child not to attend school have the significant correlations with improvement of socialization of child, where is highly significance, correlations ($P < 0.01$) between improvement of socialization, frequency in serving meal, hygienic status of food, and motivations of child in MDM.

The non-tribal students may be dependent on their parental educations, may improvement children socialization. The effect attends school regularly and also influences meal serving frequency, hygienic status of food, and motivated of the child in MDM.

Correlations coefficient between impact of COVID-19 to non-tribal parents MDM of tribal there were significant correlation ($P < 0.05$) between impact of COVID-19 to variables such as age, religion, height, increase taking MDM, attendance frequency increased taking MDM where, highly correlations ($P < 0.01$) between impact of COVID-19 on non-tribal parents education of

parents occupations, monthly income, child wants to eat MDM, significantly some independent variables such as family type, caste, children's not attend school regularly, allow child to take MDM, performance increased have that significantly correlations with impact of COVID-19 time to non-tribal parents. Traci *et al.* (2021) and Bhargav (2015) found that the COVID-19 pandemic took effect on the US and US schooling system in early March 2020. The study assesses where students are obtaining their knowledge of COVID-19, if online learning is effective in increasing comprehension of the pandemic, and the influence this event has had on their mental health.

The results indicated that 59.10% of parents said that food quality is not good so they do not allow their children to eat MDM 58.15% of parents said that they are vegetarian so they do not allow them to eat MDM 48.40% complain that some time those who are serving food with my child Misbehaved so my child does not like to eat lunch. 44% of parents said that those who prepare food do not maintain proper cleanliness while cooking food or do not clean proper serving area cooking area or utensils 40.35% of parents said my child, is not interested in cooking school food so I do not think about this issue. The results indicate that the problem faced by 24.47% of the students is that those who cook their food do not follow proper cooking procedures. They do not use proper cooking equipment. 21.86% students said that they do not like to eat the same menu and the same food every day. Some students 19.69% said that maintaining a little cleanliness is good, but they do not maintain proper cleanliness because time is less and work pressure is too much. They are not interested in this matter. 14.31% students said that we have a problem with the sitting position because of large number of students eating MDM. According to 10.78%, students the quantity and quality of food needs to be better but sometimes they do not maintain and some students do not satisfy their hunger 9.12% students say there do not want to eat because they do not have time to play when they eat due to the less tiffin time so they play do not miss time 8.41% students do not want to eat because those who served food misbehave with the students sometimes so they feel bad and do not do not want to eat MDM anymore and 6.27% students do not eat food because some students criticizes who eat MDM 5.85% students think school food is not healthy and if they eat food they can get sick and 4.52% students they eat vegetarian so cooking process is always veg or non-veg do not maintain so they do not eat MDM.

The analytical results of Table-07 indicated that 59.10% of parents said that food quality is not good, so they do not allow their children to eat mid-day meal, 58.15% of parents said that, they are vegetarian, so they do not allow them to eat mid-day meal, 48.40% complain that, some time those who are serving food with my child misbehaved so my child doesn't like to eat lunch. Whereas, 44% of parents said that, those who prepare food do not maintain proper cleanliness, while cooking food or do not clean proper serving area cooking area or utensils. 40.35% of parents said my child, is not interested in cooking school food, so I don't thinking about this issue

CONCLUSION

The study clearly demonstrates that the MDMS plays a significant role in improving the educational and nutritional outcomes of both tribal and non-tribal schoolchildren in Paschim Medinipur district. The perceptions of parents reveal high levels of satisfaction with the scheme, particularly among tribal households, who overwhelmingly acknowledged improvements in their children's health, weight, height, nutritional status, and overall activeness. Regular school attendance was also strongly associated with MDMS participation, with tribal parents reporting slightly higher attendance rates than non-tribal parents. The study further highlights positive impacts on hygiene practices, motivation to attend school, and children's socialization, supported by significant correlations across various socio-economic and demographic variables. During the COVID-19 pandemic, the provision of dry rations ensured continuity of nutritional support. Tribal parents, in particular, expressed very high satisfaction with this arrangement. Despite several constraints-such as concerns about food quality, lack of menu diversity, inadequate cleanliness, and occasional misbehavior during food distribution the overall experience of

parents remains positive. In conclusion, MDMS continues to serve as an essential intervention for enhancing child nutrition, learning motivation, and school retention. Strengthening food quality, hygiene, and monitoring mechanisms will further improve the scheme's effectiveness for both tribal and non-tribal communities.

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