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Evaluation of mid-day meal programme on grass root level in India

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Abstract

Mid-day meal programme was launched as a centrally sponsored programme on 15th August 1995. Its objective was to boost universalization of primary education and to improve the nutritional status of children by the food being given to them at the school. The impact of mid-day-meals programme on enrolment and retention of primary school children that parents are more interested to send their children. Due to the introduction mid-day meals percentage of retention has been increased. Mid-day meal programme is helping to supplement nutrients in daily diet of the children. One balanced meal everyday has reduced deficiencies of vital nutrients like vitamins and calcium, making them less susceptible to diseases. This programme has been one of the better programmes for its usefulness and effective implementation. It has also helped to break caste barriers since all the children sit and eat together. The MDM (Mid-Day Meal) in the form of NP-NSPE has become not only a nationwide programme but also a national programme. To improve the mid-day meal programme on grass root level, it is necessary to evaluate the strength and weakness of the programme periodically. In order to attaining the TQM (Total Quality Management) of this national programme, it is very essential to take an active participation of the people, belong to different strata of society. It is also essential to take regular feedback from the personnel, belong to 'administrative machinery'.

Keywords: Mid-day meal programme, enrolment, education, implementation

Introduction

Mid-day meal programme was launched as a centrally sponsored programme on 15th August 1995. Its objective was to boost universalization of primary education and to improve the nutritional status of children by the food being given to them at the school. Without healthy body, the mind does not develop without good food. It is therefore, become most essential to have a good and nutritious food for our growing children. The mid-day meal programme was introduced primarily to protect the nutritional as well as the educational rights of the children. This is due to the fact that children are not able to concentrate in their studies with empty stomach and there is a need to focus upon the mid-day meal programme, to overcome child's short term hunger. Thus, initiating this kind of meal programme, Government of India aimed at helping the children especially belong to the poor socio-economic background to attend school and to have at least Mid-day Meal through which their education as well as food related issues could be tackled.

Therefore, mid-day meal programme is perceived as a major means to impart positive habits among the children and also in educating them on the importance of health, sanitation, and socialization. It is also seen as a factor for economic support to poor parents and educating them about the value of education instead of sending their children for meager daily earnings. More importantly, it was aimed to facilitate and increase the school participation among the underprivileged children which would lead to their educational as well as economic upliftment.

Further, the mid-day meal programme promises to provide each child one third of the daily nutrient requirement in the form of cooked meal to combat his/her food and nutritional deficiencies. The mid-day meal programme is the India's second largest food security programme. For the children and, it is perhaps the largest food security programme in the world.

Major objectives of mid-day meal programme

The mid-day meal programme was started with two major objectives: firstly to enhance the child's nutrition level secondly to provide the basic education. Thus the mid-day meal programme was introduced basically to improve the overall development of the primary school children's education. Therefore, it has varied objectives like:

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- To increase the nutritional level of the school going children To enhance the educational attainment of the children
- To retain the children in the school for a long period of time
- To develop the process of socialization.

Knowledge and Opinion of the Parents, School Children, Teachers about Mid-day Meal Programme

Role of the head teacher in the school feeding programme is to ensure that the food supplied to the school is of good quality in terms of dietary needs of the pupils; availability of proper facilities for storage and preparation of the food and mobilization of parents to volunteer and prepare the meals for their children (WFP, 2003). About ten per cent of parents said that the pupils felt unwell from time to time after consuming MDM at least once in a twelve month (Dreze and Goyal, 2003) [25]. However school administrators perceive their role of SFP implementation as expensive in terms of time, loaded with implementation problems and ineffective in meeting health nutrition and educational objectives (Levinger, 2004) [48]. Majority of the Hindu household felt that there was no positive impact, the wage earners and small cultivators (SC, ST and Muslim background) pointed to important impacts of the programme including an ability to provide a second meal in the day and also 80 per cent was in favour of the programme while 20 per cent (who were caste Hindus) were opposed to it, because of the increasing number of SC/ST and Muslim students. 88 per cent of children wanted the programme to continue (Pratichi, 2004) [70]. Nearly, 60 per cent of the parents felt that the meal was of or very good quality; 96% of parents and 93% teachers, felt that scheme should be continued as it positively influenced attendance besides providing food to poor children who may have otherwise gone hungry. Parents felt that children's interest in studies had increased and it had become easier to send them to school (Jain and Shah, 2005) [37]. Under the study of best practices in the implementation of mid-day meal scheme in Assam, through different case studies the study revealed that SMC (School Management Committee) members taking keen interest in school activities and conducting monthly meetings. Mother's group is very active and dedicated for the development of the school. Head teacher is maintaining all the records regarding MDM (Mid-Day Meal). Providing quality food under MDM (Mid-Day Meal) programme. Maintaining the hygienic condition in the kitchen by the cook. Teacher's involvement in MDM (Mid-Day Meal) programme. Community contribution to the school. Using water filter for drinking water purpose (Raju, 2009) [74]. In a study of best practices adopted in mid-day-meal scheme in Uttar Pradesh, children and parents were satisfied with the quantity and quality of the food (Wizarat, 2009) [97]. Majority, 69 per cent of parents felt that their children had gained weight because of mid-day meal and 65% of parents felt that their children suffered less from common ailments (Nambiar and Desai, 2010) [59].

In a study on information and opinion of beneficiaries on Akshara Dasoha programme in Hubli city of Karnataka found that beneficiaries were satisfied with the functioning of the programme, quality of food, menu and thus suggested for its continuation with addition of newer recipes. According to children at school level the programme is successfully functioning (Bellary *et al.* 2011) [12]. Whereas, in the study of knowledge and attitude urban and rural school children on "Akshara Dasoha Yojana" in selected schools at Mangalore

revealed that majority of school children from rural (52.5%) has poor knowledge on Akshara Dasoha yojana and in urban this was (24.5%). Attitude towards Akshara Dasoha yojana was found to be neutral amongst 51.5% of rural and 58% of urban school children. However, the study indicated the need of educating the school children about nutritional program like Akshara Dasoha yojana and importance of developing more positive attitude towards it (Shetty and Vallesha, 2014) [84]. A study on community participation in mid-day meal scheme: exclusion and inclusion in Andhra Pradesh concluded that the widespread views among parents and teachers were that the MDM (Mid-day Meal) programme had led to increased attendance and enrollment. All the active stakeholders in the participation of MDM (Mid-day Meal) programme in schools were satisfied with the quality and quantity of cooked MDM (Mid-day Meal). The problem of food material storage and quality deterioration in schools is major challenge. In schools where kitchen gardens were grown, the meal becomes enriched with locally available vegetables and fruits with the participation of children, teachers and community (Pinisetty, 2015) [67].

The impact of mid-day-meals programme on enrolment and retention of primary school children that parents are more interested to send their children. Due to the introduction mid-day meals percentage of retention has been increased. The headman has expressed their opinion in support of introducing of mid-day meals scheme at the primary level. The Mid-day meals programme helps increasing the attendance and enrolment of the poor students. The rural teachers and headman have unanimously positive attitude towards this Mid-day meal programme. It is found that rural head teachers have showed favorable attitude towards introduction of mid-day meals programme at primary level (Nath and Nath, 2015) [60].

Attendance, enrolment, retention of the school children

A field survey was initiated by the Centre for Equity studies (CES) in three states; Chhattisgarh, Karnataka and Rajasthan. They reported in their findings that the school enrolment increased after mid-day meals were introduced (Dreze and Goyal, 2003) [25]. The impact of school meals on school participation: evidence from rural India assesses the effect of transition from monthly distribution of free food grains to the daily provision of free cooked meals to school children on enrollments and attendance in a rural area of India. School panel data allow a difference-in-differences estimation strategy to address possible endogeneity of program placement. The results suggest that program transition had a significant impact on improving the daily participation rates of children in lower grades. The average monthly attendance rate of girls in grade one was more than 12 percentage points higher while there was a positive but insignificant effect on grade one boys' attendance rate. The impact on enrollment levels was insignificant (Afridi, 2004) [1]. Attendance in schools where the mid-day meal programme was run, was up by more than 10%, while it was constant for the others. This impact was higher among the SC (12.6%), ST (19.9%) and Muslim (13.2%) population with the greatest impact being upon ST girl students (Pratichi, 2004) [70]. Enrolment of children in class-I increased by 36 per cent. The rise of girls was even higher at 38 per cent. It was even more significant for SC/ST students-43 per cent more SC/ST children were enrolled after the new meal was introduced (Jain and Shah 2005) [37]. There does not seem to be a significant difference on enrollment rates for girls and boys in urban areas (National

Family Health Survey Report, 2005) [7]. There was a significant improvement in daily attendance, particularly of boys and more for lower grades, in schools which transitioned from distributing packaged meals to cooked meals. There was no significant effect on enrollment levels. The individuals with low initial participation rates benefitted from the program while the transition in program characteristic did not provide any additional incentives for enrollments to rise (Afridi *et al.* 2010) [2]. Mid-day meal programme in Meghalaya had proved as an instrument in increasing enrollment in sample MDM (Mid-day Meal) Centers. The drop-out rate at primary level has come down to less than 10% which is commendable. In most of the cases parents have feeling that overall MDM (Mid-day Meal) has proved as a motivating force for children to attend the school quite regularly. The larger part of the school members committee's was more or less satisfied with the scheme but they expressed their dissatisfaction regarding the way of functioning of MDM (Mid-day Meal) programme in the state. Teachers had argued that MDM (Mid-day Meal) programme had disturbed their teaching schedules (Singh and Mishra, 2010) [86].

It is now necessary to refocus and reorient the operation of SSA (Sarva Shiksha Abhiyan), transforming it from an infrastructure based approach to a facilitating approach. Rather than merely improving entry, the focus must now shift to retention. A targeted approach should be taken whereby different policies should be formed for retention of different age groups of children in schools (Mukherjee, 2011) [57]. The school feeding program was extremely successful in raising enrolment rates, particularly among children from the lowest socio-economic backgrounds. This evidence reaffirms the positive impact of government transfer programs on educational outcomes, and suggests hopeful results for the implementation of similar programs in other regions (Bonds, 2012) [17].

MDM (Mid-day Meal) as a policy intervention has benefited the disadvantaged groups through increasing enrolments, attendance and improved nutrition. This is very significant finding, given the fact that most policy interventions for social development benefit the better-off sections of the society. Paradoxically, in spite of such operation of MDM (Mid-day Meal), there is no bridging of the prevailing educational inequalities rather that is on the rise (Garg and Mandal, 2013) [31]. Regarding the monitoring and evaluation of mid-day-meal scheme in Sikkim and observed that mid-day meal programme is one of the most important programmes of the Government to encourage children to come to schools and participate in the learning process without worrying for their meal, especially that of day time. The programme in the holistic manner helps in bringing back all school going age children back to schools, improve retention ratio of school children and arrest dropout rate besides providing nutritious meals to growing children. The state has done commendable work in implementation of mid-day meal programme by coverage of institutions and children as per plan; working days on which meals were served; percentage of meals served, etc. There was, however, short utilization of funds in overall terms, less utilization of funds in kitchen-cum-store, transport assistances, etc. The department will further improve the implementation of mid-day meal if suitable measures are taken to absorb the funds allocated (Mishra, 2013) [55]. A study of mid-day meal scheme implementation in Nalgonda district for improving school attendance revealed that majority of the schools are receiving poor quality of rice from the government; there is no safe drinking water for

MDM (Mid-day Meal), no proper distribution of bills, lack of training for administrators. The enrolment and attendance improved and classroom hunger avoided due to MDM (Mid-day Meal) programme (Vippala, 2015) [96]. Most of the parents are more interested to send their children due to the introduction of mid-day meals percentage of retention has been increased. The headman has expressed their opinion in support of introducing of mid-day meals scheme at the primary level. The mid-day meals programme helps increasing the attendance and enrolment of the poor students. The rural teachers and headman have unanimously positive attitude towards this mid-day meals scheme. It is found that rural head teachers have showed favorable attitude towards introduction of mid-day meals programme at primary level (Nath and Nath, 2015) [60].

Nutritional status, dietary intake and menu under mid-day meal programme

Both from urban and rural schools, children exhibited varying degree of under nutrition. The diet were lacking in many nutrients, both macro and micronutrients. Notable were low intakes of calcium, carotene and riboflavin which were lesser than 50 per cent adequate. The contribution of MDM (Mid-day Meal) was significant for some of the nutrients like fat, carotene and niacin wherein nearly 40 percent of intake came from MDM (Mid-day Meal). However, the contribution of rest of the nutrients was very low. It can be suggested that nutritional quality of MDM (Mid-day Meal) can be further improved by inclusion of more fruits and vegetables or alternatively a fortified food which will take care of micronutrient deficits (Prakash *et al.* 2010) [68]. Mean height, weight and hemoglobin levels of the selected children were below the standard measurements. The diet served to these children was inadequate in quality and quantity. Educating the food service personnel on better food handling and hygienic practices would help in improving the nutritional status of the children (Vasanthamani and Daisy Rani, 2010) [95]. Mid-day meal is beneficial for children especially for poor children. It provides essential nutrients to children. It has lot of advantages and disadvantages (Gupta *et al.* 2010) [35]. A study conducted on nutritional status of children in rural India: a case study from Tamil Nadu, first in the world to initiate the mid-day meal scheme. A total of 806 school children took part in this study and the majority of them were found to be underweight in the study region. Irrespective of their age group and sex, as per the World Health Organization's international standards, 83% of the students were underweight Body Mass Index (BMI < 18.5). Only 16% of the students were in the normal range (BMI 18.5 - 24.9), and of the rest, 0.39% and 0.06% were in the BMI range of 25-29.9 (overweight) and 30-35.9 (obese), respectively. Based on available data, a regression analysis was carried out. This regression model showed that students' age, sex and father's occupation significantly affects their BMI. Further analysis showed that BMI was independent of the students' blood group. It was concluded that malnutrition among school children can be eliminated by providing additional healthy foods and by improving the Socio Economic Back-ground (SEB) of the region (Palanisamy *et al.* 2011) [62].

Mid-day meal programme is helping to supplement nutrients in daily diet of the children. One balanced meal everyday has reduced deficiencies of vital nutrients like vitamins and calcium, making them less susceptible to diseases. This programme has been one of the better programmes for its usefulness and effective implementation. It has also helped to

break caste barriers since all the children sit and eat together (Bhandari, 2012) ^[14].

It is important to highlight the fact that the children were better nourished than the average in India for that age group. Their results, therefore, are likely to be lower than the effect of subsidized school meals on classroom effort in regions with more malnourished and hungry children. It was also suggest that school quality influences the extent to which school meals improve effort levels. Students in schools that had higher average scores in curriculum related tests gained significantly more from the extension of the meal program. The findings of the study have policy relevance – provision of subsidized or free meals can improve the performance of students within the classroom (Afridi *et al.* 2013) ^[3]. A study on nutritional contribution of mid-day meal to dietary intake of school children in Ludhiana district of Punjab revealed that a cyclic menu for six days provided by State Mid-day Meal Cell was uniformly followed by all schools. The data revealed that kadhi chawal was the most liked meal (45%) followed by sabji roti and dhal chawal (35%), dhal roti (30%) and channa roti (29%). The least preferred meal was sweet rice (26%). The energy and protein content of six days menu varied from 350-386 Kcal and 10.9-11.9 g protein per day which was below the recommended norms of 450 Kcal and 12 g protein. The comparison of average daily nutrient intake of children with Recommended Dietary Allowance (RDA), showed that intake of all the nutrients was inadequate. The per cent contribution of energy, protein and fat by the MDM (Mid-day Meal) to actual nutrient intake of children was 28.2, 51.7 and 27.5 respectively. The per cent contribution of other nutrients was β carotene (22.7), thiamine (28.3), riboflavin (25.3), niacin (28.7), folacin (23.6), vitamin C (15.2), iron (25.7) and calcium (27.7). The findings suggested to increase the amount of fat, green leafy vegetables and vitamin C rich fruits to improve the calorie and micronutrient contribution of mid-day meal to the dietary intake of school children (Mehta *et al.* 2013) ^[52].

Thus, mid-day meal scheme is advantageous to the children from low socioeconomic classes, yet it has to be strengthened to provide quality nutritional food in order to ensure good health and optimum growth of the children. School age is the correct age for inculcating good dietary habits through nutrition education, and mid-day meal programme can perform as a better platform for implementing such interventions (Rajeev, 2014) ^[73]. But, national programmes for tackling anemia, iodine deficiency disorders and Vitamin-A deficiency are being implemented. As a result of all these interventions, there has been a substantial reduction in severe grades of under-nutrition in children and some improvement in the nutritional status of all the segments of population. Kwashiorkor, marasmus, pellagra, beriberi and blindness due to severe Vitamin-A deficiency have become rare. However there are still many problems to be tackled and there is a need to accelerate the pace of improvement in nutrition and health status of the population (Kales, 2014) ^[40].

Infrastructure facilities under mid-day meal programme

A field survey initiated by the Centre for Equity studies (CES) in three states; Chhattisgarh, Karnataka and Rajasthan. They reported in their findings that in majority of schools, there was no proper kitchen facility. Food was often cooked in the open in a make shift shed or in classroom. Only Karnataka, made serious efforts to build kitchens in all primary schools. Shortage of utensils was also a common problem in the sample schools. Almost half of the head teachers in the

sample schools felt that drinking water arrangements were inadequate (Dreze and Goyal, 2003) ^[25]. Infrastructural facilities should be strengthened to make mid-day meal programme more effective. Many problems such as poor quality of food in terms of both hygienic variety, inadequate infrastructure; inadequate salary payment to cooks, insufficient budgetary allocation towards conversion costs are there in mid-day meal programme which should be sorted out with government efforts (Pratichi, 2004) ^[70]. Weak infrastructure supporting the poor meal, absence of proper kitchens, drinking water facilities, utensils for cooking, serving, eating and storage. (Jain and Shah, 2005) ^[37]. The physical facilities for mid-day meal scheme were available only in 50% schools, 94% schools depended on firewood for cooking; separate building for kitchen outside classrooms were rare; adequate space were not there in 50% schools. School verandah was the main venue for serving food (Gangadharan, 2006) ^[29].

There are some ways to improve the conditions of mid-day meal in anganwadis and primary schools. Such as, personal hygiene of workers, proper training should be given to these workers telling the norms of health and hygiene of cooking and serving food to the children of these centres. Related to kitchen shed only 29.36% having kitchen shed, government is providing enough money for construction of kitchen sheds all the kitchens should be covered because open kitchen or kitchens at some other place brings so many air and water borne diseases with them. Related to storage of foods, the grains should be stored properly free from rodents and other animals in a safe place. Related to parents who resent their children to share their food with dalits these parents should be properly counseled about secularism. Social equality and also these parents resign themselves to the fact that “Times have changes. (Usmani, 2012) ^[94] Government should supply good quality of Food grains, that to on time. Gas agency should supply gas in time. The other non-educational burden on the teachers should be reduced for the success of mid-day meal. School Development Management Committee members should give full co-operation to the teachers. It reduces the burden on the teachers and the responsibilities of the scheme should not be given to the teachers. It should be given to the local organizations. Periodic monitoring and evaluation of the scheme is necessary (Avinash and Avinash, 2013) ^[10]. Government must take financial allocations for a variety of storage related necessities and policy measures must be undertaken to discourage usage of fuel wood by providing double-bottle LPG (Liquid Petroleum Gas) connections. They also recommended that safe, portable and running water supply should be provide free of cost in every school on regular basis with proper arrangements for addressing regular maintenance and troubleshooting requirements. Steps must be undertaken to incorporate variety and enhance nutritional quality of meals (Shah and Shukla, 2014) ^[82].

Implementation of mid-day meal programme

Many programs have been implemented in developing countries to improve both the physical health and the psychosocial health of students. School feeding is a long standing and popular development assistance program; implemented in over 72 countries by the World Food Programs (WFP) alone in developing countries (WFP, 2008). In these developing countries, School Feeding Program (SFP) is offered by non-governmental organizations or other large organizations in collaboration with national governments (Bennett, 2003) ^[13]. There was inadequacy of funds to provide

quality, dissatisfaction of cooks with the meager salaries paid to them, the monotonous menu, lack of enough plates in some cases resulting in children eating off leaves or papers, irregular and delayed delivery of wheat and funding were the problems related with an implementation of the scheme (Blue, 2005). A study of best practices in the implementation of mid-day meal programme in Karnataka reflected the facts that the concepts of rain water harvesting, kitchen garden, fruit garden, sprinkler facility for water conservation in the school compound are new to even many schools in the state and the same need to be encouraged by the implementing agency and emulated by many other states of the country. Record keeping, display of information on school walls, School development management committee members active cooperation and mother committees active involvement are some of the other best practices followed in the state. Although there are still scopes for improvement, the schools implementing the best practices are worth studies. It is the dedication; determination, hard work and cooperation among the district officials, staff members of the schools, parents have enabled them implement the good practices (Srinivas, 2008) [91].

In schools of Uttar Pradesh, revised menu had been written on 6-8 feet, painted on the wall of the school and food was served accordingly. The wall writing also displayed the amount of ingredients needed for 100 children for preparing a dish. No gender and caste discrimination was observed in the distribution of the food. The head teacher and the other teacher first tasted the meal and then served to the children. The government has taken a lot of steps to streamline the process of serving hygienic and safe food. Cleanliness and discipline among students is well taken in the school while serving the food. First they wash their hands and they form the queue for taking the food, before eating the meal they do the prayer. No gender or caste discrimination was observed in the distribution of the food (Wizarat, 2009) [97]. Importance of food safety, hygiene and sanitation in selected schools providing midday meal were highlighted that, food safety, hygiene and sanitation of mid-day meal schools are not satisfactory. Hence, more efforts are to be undertaken to improve these criteria in mid-day meal centers to enhance the child's nutrition and health (Radha and Sasikala, 2012) [72].

Administrative and monitoring systems need to be reorganized and improved. There is a need to correct the imbalance in media coverage of rural issues in general, and social security programmes (such as the MDM scheme) in particular. The government must guard against the creation of vested interests in these programmes in the name of "public-private partnerships" or which often come with a profit-at-any-cost motive. The laggard states must learn from the many examples (Odisha, Rajasthan, and Tamil Nadu to name a few) and improve the nutritive content of the food provided and use this as an opportunity to catch up with others (Khera, 2013) [44].

Three basic principles was followed in Delhi schools and these principles can be followed in future also viz; transparency, accountability and ensuring hot, cooked meals. Hygiene is achieved through standard operating procedures (Philipose, 2013) [66].

The School Management Committees (SMCs) should be strengthened and also the food grain at any cost should be placed under the custody of (School Management Committee) SMC member where ever they are the implementing agency. Sufficient storage should be provided in schools to store the grains. Moreover, it was also recommended that the records

of food grains should be maintained at all levels through which it passes by the implementing agencies be it Pradhan/Mahila Samkhyas. There is need to take very strict action against the officials of all levels and elected representatives who violates the guidelines (Joint Review Mission Team, 2013) [8].

Mid-day meal programme encouraged to young girls aged between 14-18 years, who were once barred from stepping out of their homes by their highly patriarchal Ghatwal and Kumhar communities, are addressing serious issues of hunger, nutrition, sanitation, child marriage, reproductive health and education in their villages and their parents, who were once unsure of their daughters' actions, are supporting them wholeheartedly in their efforts to change the nutritional status of the children in the area. Better nutrition, better living-that's the gift those young girls' brigade in Deoghar is giving to the community (Azim, 2014) [11]. SMC (School Management Committee) members learns from trainings that how to pitch an issue to the school authorities. They also understand the various forms of discrimination that manifest themselves in schools (Singh and Sarkar, 2014) [87].

To improve the mid-day meal programme on grass root level, it is necessary to evaluate the strength and weakness of the programme periodically. In order to attaining the TQM (Total Quality Management) of this national programme, it is very essential to take an active participation of the people, belong to different strata of society. It is also essential to take regular feedback from the personnel, belong to 'administrative machinery'. The executing officials should be 'transparent' and highly responsive for rendering their services in accordance with the prescribed norms. Only then, this programme will attain the 'total quality management' position and effectively achieve the desired objectives of this programme uniformly throughout India in general and particularly in Haryana (Kumar, 2014) [46].

Conclusion

The MDM (Mid-day Meal) in the form of NP-NSPE has become not only a nationwide programme but also a national programme. The studies reviewed indicated that though the programme was started with very noble objective of providing nutritious meal to the younger most generation of the nation in order to attract them towards the primary education, the achievement of the objective is partial. MDM has positive impact on enrolment rate and attendance rate of school children and became a measure to attract students towards the school and attend the classes. Parents and children were satisfied with the mid-day meal programme on contrary, some parents and children were not happy and satisfied with the quantity and quality of the mid-day meal programme. Nutritional status of school children can be improved by providing healthy diets to them properly. This scheme benefitted 140 million children in government assisted schools across India in 2008, strengthening child nutrition and literacy. In a country with a large percent of illiterate population with a high percent of children unable to read or write; governmental and non-governmental organizations have reported that mid-day meal scheme has consistently increased enrollment in schools in India. One of the main goals of school lunch program is to promote the health and well-being of the nation's children (Chutani, 2012).

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