

**INTERNATIONAL JOURNAL OF FOOD AND
NUTRITIONAL SCIENCES**

IMPACT FACTOR ~ 1.021



Official Journal of IIFANS

**A COMPARATIVE STUDY ON MID DAY MEAL AND NON MID DAY MEAL
BENEFICIARIES OF KULGAM DISTRICT**Abdul Qayoum Lone¹ and P Nazni^{2*}

*Corresponding Author: P Nazni, ✉ naznip@gmail.com

Received on: 29th May, 2017Accepted on: 5th July, 2017

The present research has been conducted with the objectives of comparing the anthropometric measurements, intellectual and social development of mid day meal and non mid day meal beneficiaries of Kulgam district, Kashmir province of Jammu & Kashmir state. Materials and methods: A total number of 53 of each beneficiary from both mid day meal schools and non mid day meal schools children under the age group of 6 years were included in this cross sectional study. The anthropometric measurements such as weight, height and mid upper arm circumference were recorded for each student. The various intellectual abilities studied in this research paper were verbal, word, numerical, space, memory, perceptual and reasoning. The social behaviour such as competition, co-operation, leadership, sympathy, dependency, aggression, negativism and jealous were studied. Results: The results of the study revealed that, there was a significant difference ($p < 0.001$) between the MUAC of mid day meal and non mid day meal beneficiaries. Mean word fluency showed a significant difference at 1% level with 't' value of 2.85, in this non MDM showed more mean word fluency than MDM subjects. In this social development mean co-operation and mean aggression showed a significant difference between MDM and non MDM beneficiaries of Kulgam district at 1% level with 't' value of 3.46 and 0.93. Conclusion: The study concludes that non mid day meal beneficiaries children showed better nutritional status in terms of anthropometric measurements compared to MDM beneficiary's children. The benefits in terms of intellectual and social development were not achieved by both mid day meals and non mid day meals children of Kulgam district. All these parameters needs to be further improved and strengthen to fill the nutrient gaps to have a positive impact of mid day meals on school going children.

Keywords: Mid day meal, Non mid day meal, Anthropometric measurements, Intellectual abilities, Social behaviour

INTRODUCTION

Nutritional status is the condition of health of an individual as influenced by nutrient intake and utilization in the body. Malnutrition is major public health problem in developing countries. Freedom from hunger and malnutrition is a basic human right and their alleviation is fundamental prerequisite for human and national development. Usually referred to as silent emergency, it has devastating effects on children, society and future humankind.

Mid Day Meal Scheme (MDMS) was initiated on the basis of the philosophy that "when children have "to sit in class with empty stomachs, they cannot focus on learning" (Save the Children India, 2009). Children are the future of mankind. Education and Health are the two basic requirements of children. These primary needs are found to be more basic and urgent for school going children as we go down to the level of primary school. The nation is committed to achieving universalization of Elementary

¹ Department of Food Science and Nutrition, Periyar University, Salem, Tamil Nadu, India.

² Department of Clinical Nutrition and Dietetics, Periyar University, Salem, Tamil Nadu, India.

Education Covering Children in the age group of 6 to 14 years. But here at this level, one comes across a paradoxical situation of low enrolment of students in primary schools on the one hand and a large-scale dropout of children from schools on the other (UNICEF, 2009).

Extreme poverty and social discrimination are the major cause of literacy several programs have been launched to attract children to schools. The mid-day meals is a major programme launched all over the country, not only to attract the children into the embrace of primary schooling but also to provide nutritional support for generating, necessary interest both physical and psychological among the children to ensure their presence in the school (Viswanathan, 2006; and UNICEF, 2009).

Government of India after the independence started various nutritional supplementation programs to uplift the nutritional status of the children and community as whole (Misra and Manaranjan Behera, 2003). Among them the National program of Nutritional Support to Primary Education popularly known as Mid Day Meals scheme is meant for school going children. The objective of this scheme was to give boost to universalization of primary education and to impact the nutrition of students in primary classes (Laxmaiah *et al.*, 1999).

A World Bank report states that India has 42% of the world's underweight children. According to the studies by National Nutrition Monitoring Bureau (NNMB), National Institute of Nutrition (NIN) and Indian Council for Medical Research (ICMR), 58.6% of the children of the age group 6-9 years and 77.9% of the children of the age group 10-13 are underweight. If the mild under nutrition is added to underweight, this number increases to 94.1% and 96.4% respectively. 30.1% of all children of 10-13 age groups are severely underweight. The school dropout rate is as high as 60% (India and United Nations, 2010).

MATERIALS AND METHODS

The methodology adopted for the study was a cross sectional study conducted in the Kashmir province of Kulgam district of Jammu & Kashmir state. Ten schools were selected in Budgam district, i.e., five Mid Day Meals schools and five Non Mid Day Meals schools. A total number of 53 beneficiaries from Mid Day Meal Schools and 53 from Non Mid Day Meal Schools underneath 6 years of age group were selected.

Research Design

The present study is a comparative study. The comparative method is a scientific method in which comparative data is collected with the specific purpose, analyzed and specific conclusions were derived from the results (Bajpai, 1985). In this study, a comparison is made between the mid day meal beneficiary preschool children and Non mid day meal beneficiary preschool children.

Tools Used

A self constructed questionnaire for an individual child was framed in order to get the anthropometric measurements, intellectual development and social development. The criteria assessed under each category are as follows:

Anthropometric Measurements

An anthropometric measurement applies to all aspects of growth of human organism. Anthropometric measurements like weight, height and mid upper arm circumference were recorded for each child.

Intellectual Development

Reasonable learning opportunities provided during the preschool years are crucial for the development of intelligence. By assessing the intellectual development one can foretell the educational outcomes and individual performance in the future (Oninla *et al.*, 2007). The various intellectual developments such as verbal comprehension, word fluency, numerical ability, space visualization, memory, perceptual speed and reasoning were assessed in this study.

Social Development

Social development is the acquisition of the ability to behave in accordance with social expectations (Raheela *et al.*, 2002). A study in the social development during preschool years will give a glimpse of how sociable the child is and how he is likely to be in the future (Bishnupada Sethi, 1999). The criteria assessed in this study to evaluate social development were competition, cooperation, leadership, sympathy, dependency, aggression, negativism and jealous.

Statistical Analysis

The data collected was coded and tabulated according to the exhaustive categories in the Performa and were then subjected to statistical analysis, i.e., mean, standard deviation and t-test. Correlation coefficient was used to find out the interrelationship between the study variables-intellectual, social and anthropometric development.

RESULTS AND DISCUSSION

Anthropometric Measurements of Mid Day Meal and Non Mid Day Meal Beneficiary of Kulgam District

Results of anthropometric measurements of Table 1 showed that there is no significant difference between the mean height and mean weight of MDM and non MDM beneficiaries of school going children of Kulgam district. Results of MUAC revealed that there is a significant difference between mean MUAC of MDM and non MDM beneficiaries of school going children of Kulgam district. Even though there was a significant difference in the MUAC of MDM & Non-MDM school children, the mean MUAC is more in Non-MDM children compared to MDM children.

Table 1: Comparison on Anthropometric Measurements Between Mid Day Meal and Non Mid Day Meal Beneficiary School Going Children of Kulgam District

Anthropometric Measurements	MDM (n=53) (Mean ± SD)	NMDM (n=53) (Mean ± SD)	T value	Significance
Height (cm)	123.8±31.7	121.66±3.78	0.498	0.61 ^{NS}
Weight (kg)	25.00±25.87	21.30±1.84	1.03	0.30 ^{NS}
MUAC(inch)	14.28±0.799	15.12±1.04	4.65	0.00 ^{**}

Note: ** Significant at 1% level (p<0.001), NS-Not Significant.

Intellectual Development of Mid Day Meal and Non Mid Day Meal Beneficiary School Going Children of Kulgam District

Results of intellectual development revealed that mean verbal comprehension showed a significant difference at 5% level with 't' value of 2.07. Mean word fluency showed a significant difference at 1% level with 't' value of 2.85, in this non MDM showed more mean word fluency than MDM subjects. Regarding the results of mean numerical ability, mean space visualization, mean memory and mean perceptual speed showed no significant difference between MDM and non MDM. Whereas mean reasoning showed a significant difference between MDM and Non MDM beneficiaries at 1% level, in this non MDM subjects scored more mean reasoning score than MDM subjects. According to Thurstone (1941) mental development is characterized by such abilities such as verbal, word, numerical, space, memory, perceptual and reasoning. The overall intellectual ability of mid day meal and non mid day meal children aged 6 years were developed to some extent. As the age increases,

Table 2: Comparison on Intellectual Development Between Mid Day Meal and Non Mid Day Meal Beneficiary School Going Children of Kulgam District

Intellectual Development	MDM (n=53) (Mean ± SD)	NMDM (n=53) (Mean ± SD)	T value	Significance
Verbal comprehension	10.94± 2.89	11.92± 1.86	2.07	0.04 [*]
Word fluency	15.39± 2.48	16.56± 1.64	2.85	0.005 ^{**}
Numerical ability	8.62± 3.99	10.13± 2.45	2.34	0.21 ^{NS}
Space visualization	7.30± 2.15	7.50± 2.15	0.196	0.62 ^{NS}
Memory	10.60± 3.10	11.45± 2.33	1.59	0.115 ^{NS}
Perceptual speed	6.77± 2.98	7.05± 2.83	0.5	0.61 ^{NS}
Reasoning	2.49± 1.47	3.52± 1.62	3.44	0.01 [*]

Note: ** Significant at 1% level (p<0.001), NS-Not Significant.

the increase in the intellectual ability will be gradual and steady (Bhatia, 1990).

Social Development of Mid Day Meal and Non Mid Day Meal Beneficiary School Going Children of Kulgam District

Results of mean social development showed in the Table 3 resulted that, mean competition, mean leadership, mean sympathy, mean dependency, mean negativism and mean jealous showed a no significant difference between the MDM and non MDM beneficiaries of Kulgam district. In

Table 3: Comparison on Social Development Between Mid Day Meal and Non Mid Day Meal Beneficiary School Going Children of Kulgam District

Social Development	MDM (n=53) (Mean ± SD)	NMDM (n=53) (Mean ± SD)	T value	Significance
Competition	6.54±1.02	6.79±1.06	1.2	0.23 ^{NS}
Co-operation	7.96±1.46	8.84±1.15	3.46	0.001 ^{**}
Leadership	3.84±1.39	3.92±1.07	0.31	0.75 ^{NS}
Sympathy	6.62±1.06	6.50±1.29	0.49	0.62 ^{NS}
Dependency	6.83±1.45	6.92±1.56	0.322	0.74 ^{NS}
Aggression	8.62±1.34	9.49±1.35	3.3	0.001 ^{**}
Negativism	8.28±1.13	8.52±1.52	0.93	0.35 ^{NS}
Jealous	9.39±1.13	9.30±1.11	0.431	0.667 ^{NS}

Note: ** Significant at 1% level (p<0.001), NS-Not Significant.

this social development mean co-operation and mean aggression showed a significant difference between MDM and non MDM beneficiaries of Kulgam district at 1% level with 't' value of 3.46 and 0.93. These were indicating that even though there was a significant difference in the mean cooperation and mean aggression of MDM & Non-MDM school children, the mean value is more in Non-MDM children compared to MDM children. According to Jyotsna *et.al.* (2005) the social development of the child is very much influenced by its social contact. The nature of experiences makes the child positive or negative in his or her social behaviour.

CONCLUSION

The study concludes that non mid day meal beneficiaries children showed better nutritional status in terms of height, weight and mid upper arm circumference compared to MDM beneficiaries children. The benefits in terms of intellectual and social development were not achieved by both mid day meals and non mid day meals children of Kulgam district. Enhanced nutrition and health of school children leads to improved in their intellectual and social development, paving the way for healthier lives. Though, the non MDM subjects having good nutritious rich food at their homes and their economic status are much better than MDM subjects. This may raises the potential to improve a child's health, school performance and educational attainment.

REFERENCES

- "India and United Nations – Human Rights", Archived from the Original on 2 May 2010, Retrieved 28 July 2013
- Bajpai S (1985), "Mid Day Meals in Primary Schools", *Yojana Issue – Child Rights*, Vol. 52, pp. 36-38.
- Bhatia H R, Tanden R K, Somvanshi and Saxena J K (1990), "Moradabad, Construction and

Standardisation of Performance Tests of Intelligence for Ages", pp. 3-13.

- Bishnupada Sethi (1999), "Mid Day Meals Program and its Impact in Improving Enrolment: A Study in Respective of Raygada District of Orissa".
- Jyotsna Jain, Mihir Shah and Samaj Pragati Sahyog (2005), "Mid-Day Meal in Madhya Pradesh".
- Laxmaiah K, Rameshwar Sarma V and Hanumantha Rao D (1999), "Impact of Mid Day Meals Program on Education and Nutritional Status of the School Going Children in Karnataka", Division of Field Studies National Institute of Nutrition Hyderabad.
- Oninla S O, Owa J A, Onayade AA and Taiwo O (2007), "Comparative Study of Nutrition Status of Urban and Rural Nigerian School Children", *The Journal of Tropical Pediatrics*, Vol. 53, No. 1.
- Raheela M A Mian, Mohammad Ali, Paola A Ferroni and Peter Underwood (2002), "The Nutritional Status of School Aged Children in an Urban Squatter Settlement in Pakistan", *Pakistan Journal of Nutrition*, Vol. 1, No. 3.
- Thurstone S (1941), "Multiple Theory of Intelligence in his Primary Mental Abilities", Vol. 20, University of Chicago Press, Chicago.
- UNICEF (2009), "Tracking Progress on Child and Maternal Nutrition: A Survival and Development Priority", UNICEF, New York.
- Viswanathan B (2006), "Access to Nutritious Meal Programme—Evidence from 1999-2000", *Economic & Political Weekly*, Vol. 38.

