

Impact of services provided by Anganwaadi centres on nutritional status of children 1-6 years of age group

Lomapada Nayak¹, Nivedita Karmee², Gurukrushna Mohapatra^{3*}, Radha Madhab Tripathy⁴

¹Assistant Professor, ²Associate Professor, ³PG Student, ⁴Professor and HOD, Department of Community Medicine, MKCG Medical College, Berhampur, Odisha, INDIA.

Email: gurukrushna@gmail.com

Abstract

Background: The anganwadi is a government sponsored child care and mother care centre in India caters the children 0-6 year age group. Nutritional status is primarily determined by a child's growth in height and weight and is directly influenced by food intake and the occurrence of infections. Nutritional status is primarily determined by a child's growth in height and weight and is directly influenced by food intake and the occurrence of infections. **Objective:** The study to assess the nutritional status of children 1-6 year of age group. **Methodology:** It was a field based cross-sectional study carried out in Berhampur municipal area done between June 2012 to October 2012. Data was collected by pre designed and pre tested questionnaire regarding demographic information of study subjects and evaluation of nutritional status of study subjects. The subjects under selected AWCs examined and respondents were interviewed by house to house visit to get relevant data. **Results:** Majority i.e.77% were reside in urban area and 23% were belonged to urban slums. Majority (61%) children had normal weight for age and 29% had grade-1 malnutrition, 8% grade 2 and 2% had grade 3 malnutrition. Nearly 50% children of slum AWCs had poor to very poor general appearance. Among males 40% were malnourished and among the females 38% had malnutrition. **Conclusion:** It need improvement in both infrastructure as well as performance level in AWCs. There should be a universal screening of all preschool children for under nutrition, growth monitoring individually and identifying different grades of malnutrition.


Keywords: AWW, AWCs, Nutritional status, Children.

*Address for Correspondence:

Dr. Gurukrushna Mohapatra, P.G. Trainee, MKCG Medical College, Berhampur-760004, INDIA.

Email: gurukrushna@gmail.com

Received Date: 10/08/2015 Revised Date: 20/09/2015 Accepted Date: 04/10/2015

Access this article online	
Quick Response Code:	Website: www.medpulse.in
	DOI: 18 October 2015

INTRODUCTION

The anganwadi is a government sponsored child care and mother care centre in India caters the children 0-6 year age group. They were started by Indian government in 1975 as a part of the Integrated Child Development Services programme to combat child hunger and malnutrition.¹ The anganwadi centre (AWC) literally known as a courtyard play centre is a focal point for the

delivery of services at community level to children below six years of age, pregnant women, nursing mothers and adolescent girls.² Anganwadi worker (AWW) is the incharge of a AWC who is chosen from the community and undergoes four months training on various aspects of health, nutrition and childcare. The main activities of AWW are supplementary nutrition, immunization, health check up, referral service, growth monitoring and non formal education.³ Nutrition is an important service provided by ICDS. Nutritional status is primarily determined by a child's growth in height and weight and is directly influenced by food intake and the occurrence of infections. Food intake is not only a result of food availability at the household level but also of dietary quality and quantity and feeding practices.⁴ Assessing nutritional status of children mainly focuses of activities of anganwadi worker in that locality. Children represent the future, and ensuring their healthy growth and development ought to be a prime concern of all societies. Newborns are particularly vulnerable and children are

vulnerable to malnutrition and infectious diseases, many of which can be effectively prevented or treated.⁵ With this background a study was conducted in urban area with objective to assess the nutritional status of children 1-6 year of age group.

MATERIAL AND METHODS

Study design and study setting

It was a field based cross-sectional study carried out in Berhampur municipal area including both urban and urban slums of Berhampur, Odisha between June 2012 to October 2012. The study population include all the children registered in AWC of 1-6 year age group.

Sample size and sampling technique

Berhampur town has 37 wards under 2 ICDS projects where 187 AWCs are functioning. As per NFHS 3 data 54 % of children are under nourished (< 2 SD or more) with respect to weight for age in Odisha,⁶ Taking this as the prevalence with precision 5% at 95% CI the sample size was calculated to be 381. Assuming 5% non response rate calculated from a pilot study conducted taking 20 house hold under one AWC before the commencement of this study final sample size found to be 400. Multistage sampling method was used to select the study population. Each ICDS project had 18 wards. Each ward has 5 AWCs and 4-5 Subjects are selected from each AWC using simple random sampling so as to include children of either sex. Children 1-6year age group who were present during time of visit were included in the study

Methodology

The district health administration, DSWO, all the ICDS functionaries were intimated about the purpose before the commencement of the study. The mother of study subjects and AWW were explained about the details of the study and informed consents were taken after assuring about confidentiality and anonymity of the information obtained. The subjects under selected AWC examined and respondents were interviewed by house to house visit to get relevant data. Data was collected by pre designed and pre tested questionnaire regarding demographic information of study subjects and evaluation of nutritional status of study subjects. The nutritional measurement was done by anthropometric measurements such as height, weight, skin fold thickness, mid arm circumference, head circumference, chest circumference. An equipment kit including a weighing scale, a height board, a measuring tape were used to get the anthropometric measurements. Waterlow' s and Gomez' s classification were used for analysis of data. Both descriptive and inferential statistics were applied and final analysis was done by using SPSS version 20.0 and $p < 0.05$ taken as statistically significant.

Ethical consideration

The study was approved by Institutional Ethics Committee of the M.K.C.G Medical College ensuring not to harm physically, psychologically, emotionally, maintaining privacy, self respect and confidentiality

RESULTS

The data was collected from 390 beneficiaries during the study. Majority i.e.77% were reside in urban area and 23% were belonged to urban slums. Female were 51% and 49% were male. Regarding age distribution 65% belonged to 1-3year age group and 35% were in 3-6year age group. It was seen that 67% AWCs had been established more than 10 years back followed by 23% which were 5-10 years old and 10% AWCs were less than 5 years old. On general examination it was found that 97% children from non slum AWCs had good general appearance where as only 6% in children of slum AWCs. Nearly 50% children of slum AWCs had poor to very poor general appearance. The hair and skin of all the children of non slum AWCs were normal where as hair and skin lacked luster about 50 % of slum children. Angular stomatitis was seen in 94% of slum children but it was only 2% in non slum children. Bleeding gum was found in 6% and 2% of slum and non slum children respectively. In large number 56% had unhealthy teeth was found in slum children and only 3% had unhealthy teeth in non slum children (Table-1) Majority (61%) children had normal weight for age and 29% had grade-1 malnutrition, 8% grade 2 and 2% had grade 3 malnutrition. (Figure -1) A large number i.e. 75% of malnourished children were from slum ICDS and 25% of the malnourished children belonged to non slum area. When the nutritional status of children of slum and non slum area was compared, no statistical significance was found. (Table -2) When the nutritional status of different age group was taken into consideration it was seen that 56% of children in the age group 1-3 year were normal, 33% had grade1 malnutrition, 9% had grade 2 and 2% had grade3 malnutrition. In the 3-6 year age group61% of children had normal nutritional status followed by 29% grade 1, 8% grade 2 and 2% had grade 3 malnutrition. On comparison of different grades of malnutrition with age groups it was found that there were more malnourished children in the age group 1-3yr. (Table-3) Among males 40% were malnourished and among the females 38% had malnutrition. It was seen that in AWCs who had established more than 10 years had 45% normal children where as in AWCs who had established less than 10 years had only 16% normal children and there a statistically significant association was found. (Table -4) When weight measurement in previous month was taken into consideration it was seen that 82% of the children who

had been weighed were normal and only 18% were malnourished. But when weight measurement was not done 44 % were malnourished and this was found to be statistically significant. (Table 5)

Table 1: Nutritional evaluation of children basing on clinical examination

Clinical signs	Category	Slum area	Non slum area
General appearance	Good	6%	97%
	Fair	45%	3%
	Poor	45%	
	Very poor	4%	
Hair	Normal	37%	100%
	Loss of luster	51%	
	Discolored and dry	12%	
Skin	Normal	46%	
	Loss of luster	49%	
	Dry and rough	5%	
Lips	Normal	6%	98%
	Angular stomatitis	94%	2%
Gums	Normal	94%	98%
	Bleeding	6%	2%
Teeth	Healthy teeth	44%	97%
	Unhealthy teeth	56%	3%

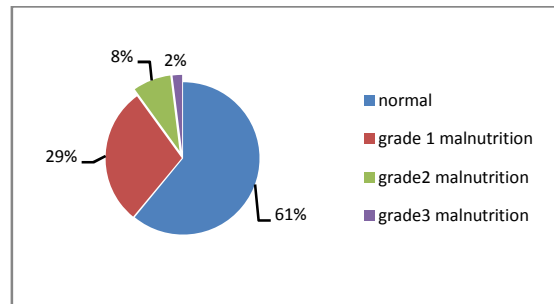


Figure 1: Grading of nutritional status of children

Table 2: Nutritional status in non slum and slum area

Nutritional status	Non-slum	Slum	Chi-square, p-value
Normal	75% (225)	27% (24)	70.0, p>0.05
Malnourished	25% (75)	73% (66)	

Table 3: Nutritional status among different age groups

Nutritional status	1-3 years	3-6 years
Normal	56% (142)	61% (83)
Grade 1 malnutrition	33% (83)	29% (40)
Grade 2 malnutrition	9% (23)	8% (11)
Grade 3 malnutrition	2% (5)	2% (3)

Table 4: Comparison of malnourished children with sex and year of establishment of AWCs

Category	Normal	Malnourished	Chi-square, p-value
Male	60% (115)	40% (76)	0.18, p>0.05
Female	62% (124)	38% (75)	
AWCs < 10year	16% (62)	17% (67)	14.2 p<0.05
AWCs >10 year	45% (177)	22% (84)	

Table 5: Weight measured of child in last month verses malnutrition

Nutritional status	Weight measured	Weight not measured	Chi-square, p-value
Normal	82% (71)	56% (170)	20.1, p<0.05
Malnourished	18% (15)	44% (134)	

DISCUSSION

The percentage of malnourished children was more in 1-3 year age group which might be due to the lack of supervision of AWWs in that locality. In this study nutritional status was found to be poor in slum area indicating the requirement of more supportive supervision. Weight is the most useful indicator to assess the growth, development and nutritional status of child. In this study it was observed that the percentage of children undergone for routine measurement of their weight in AWCs was only 18% which implying the lack of awareness of both care giver of children and AWWs. A study done by Youth for social development (YSD) a local NGO assessing the activititis of AWWs found that the irregular opening of AWCs, poor health care facility was a major concern.⁷ In this study over all 39% children were malnourished where another study conducted by Shanawaz *et al* in Hyderabad assessing the nutritional status of children found that 47% were undernourished.⁸ In this study 29% were under grade 1 malnutrition or underweight where a study conducted by Farzana alim in Aligarh found 28% were under weight.⁹ Also a study conducted by D. J. Coetzee in Alexandra town of South Africa 79% children had a weight below 50th percentile.¹⁰ In presnt study 44% children were not measuring their weight where a study conducted by Umesh kapil *et al* in Rajasthan found that 40% were severe malnourished children not being weighed regularly.¹¹

CONCLUSION

Growing children are more susceptible to infection if malnourished and it is a vicious cycle. So improving health and nutritional status is a important component of ICDS programme. It need improvement in both infrastructure as well as performance level. Efforts should be made to have information, education and communication activities targeting to educate the mothers.

RECOMMENDATIONS

There should be a universal screening of all preschool children for under nutrition, growth monitoring individually and identifying different grades of malnutrition. The existing strategy for health checkups under National Rural Health Mission should be included.

LIMITATION

The study does not assess about inadequate intake of food both in quality and quantity, infections notable diarrhea, respiratory infections, measles and intestinal worm, poor environmental condition, large family size, failure of lactation and adverse cultural practices related to child rearing and weaning.

REFERENCE

1. Anganwadi: system of workers. Assessed at url: <http://www.aanganwadi.org/index.php> [last viewed on dt 14.10.15]
2. K. Park. Integarted child development service (ICDS). Text book of preventive and social medicine, 23rd ed; M /s Banarasidas Bhanot: p590-91.
3. Role and responsibility of Anganwadi workers: The ICDS scheme. Ministry of women and child development, Government of India. Assessed at url: <http://wcd.nic.in/icds/ icdsteam.aspx>. [last viewed on dt 15.10.15]
4. Best C, Neufingerl N, Vangeel L, Vanden T, Osendrap S. The nutritional status of scool aged children: why should we care? Food nutrition bulletin. Sep(2010);31(3):400-17 [PMID: 20973461]
5. Child health: WHO health topic. Assessed at url: http://www.who.int/topics/child_health/en/. [last viewed on dt.14.10.15]
6. National Family Health Survey (NFHS) III, India. State report: Orissa. Assessed at url: http://rchiips.org/nfhs/orissa_report.shtml. [last viewed on dt 15.10.15]
7. Report of social audit of ICDS scheme in Berhampur, Odisha. Publications: Youth for social development. Assessed at url: <http://www.ysdindia.org/resources/publications/>. [last viewed on dt.14.10.15]
8. Shanawaz, A Nasir, Sunder S, Khan M, Rani S, Padmanabha BV. An evaluation of nutritional status of children in Anganwadi Centres of Hyderabad district of Andhra Pradesh state using WHO z score technique. Global journal of medicine and public health. 2013; 2(6):p1-6.
9. Alim F, Jahan F. Assessment of nutritional status of rural anganwadi children of Aligarh under ICDS and rural health. Stud Home Com Sci.2012;6(2):p95-98
10. Coetzee D, Ferinho P. Nutritional status of children in Alexndra township. South Africa Med J. 1994; 84(7)413-15.
11. Kapil U, Saxena N, Nayar D, Ganasekaran N. Status of growth monitoring activities in selected ICDS projects of Rajasthan. Indian Paediatrics.1996 (Nov) 33:949-51.

Source of Support: None Declared
Conflict of Interest: None Declared