



ASSESSMENT OF NUTRITIONAL STATUS OF ANGANWADI CHILDREN (0-6 YEARS) IN URBAN AND RURAL AREAS OF NAGPUR WITH SPECIAL REFERENCE TO ANGANWADI SERVICES- A COMPARATIVE CROSS-SECTIONAL STUDY

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ABSTRACT

Introduction: Children are in a constant phase of development. Their body is in a phase of constant wear-tear and repair, their brain is developing, bones are growing. These growing children require constant supplementation of calories, proteins and micronutrients to keep the pace of increased demands of the body.

Method: This cross-sectional study was conducted among children up-to 6 years registered in anganwadi. Malnutrition of children in urban and rural area were studied with special reference to anganwadi services.

Results: ICDS scheme was used by 77% children in urban area and by 80% children in rural area regularly. 84.02% children of urban area and 93.25% children of rural area had taken vitamin A. 84.86% of children in urban area and 91.33% of children in rural area had taken deworming tablets.

Conclusion: Malnutrition was more when ICDS scheme participation in anganwadi, vitamin A supplementation and deworming were low.

KEYWORDS

Anganwadi Services, Nagpur, Nutritional Status

INTRODUCTION

Children are in a constant phase of development. Their body is in a phase of constant wear-tear and repair, their brain is developing, bones are growing. These growing children require constant supplementation of calories, proteins and micronutrients to keep the pace of increased demands of the body. Since childhood is the most vulnerable phase in the life of human being, nutritional inadequacies will result in the hampering of the development of the body. [1]

Measures of child undernutrition are used to track progress towards Millennium Development Goal 1: Eradicate extreme poverty and hunger. Database of UNICEF revealed 161 million under-five year olds were stunted globally in 2013. Between 2000 and 2013 stunting prevalence declined from 33% to 25%. [2]

Three standard indices of physical growth that are used to describe the nutritional status of children include: Height for Age, Weight for Height and Weight for Age. [3]

According to NFHS III data, 48 % of children under five years of age are stunted, 43% are underweight and 20% are wasted, 24 percent of the children are severely stunted and 16 percent are severely underweight. SRS based under five mortality rate in India, for the year 2010, is 59 per thousand and it varies from 66 per thousand in rural areas to 38 per thousand in urban areas. [4]

Child under nutrition is a major contributor to the Global hunger index (GHI). [5,6,7] „Angan literally means a courtyard. Anganwadi centres have been established by Social and women Welfare department of Government of India. [8]

Anganwadi centre is a part of ICDS (Integrated Child Development Services) scheme initiated in 1975. [9]

The first 6yrs of life is the most crucial period in a child's growth and development as 40% of the physical growth and 80% of the mental development is believed to take place during these years. [10]

Malnutrition is called as “silent emergency”. The prevalence of underweight children in India is among the highest in the world and is nearly double that of Sub-Saharan Africa. [11]

About 13.12% of the Indian population consists of children between 0-6 years. [12]

The Integrated Child Development Services Scheme, which was started in India in 1975 October takes a step further ahead. The package of services provided are supplementary nutrition, immunisation,

health check-up, referral services, nutrition and health education and non-formal preschool education. [13]

Malnutrition is an important indicator of child health. Malnutrition at the early stages of life can lower child resistance to infections, increase child morbidity and mortality. Assessment of nutritional status of children in early stages can improve their life. Study of epidemiological factors associated with nutritional status and comparison in urban and rural area with special reference to anganwadi services will help to identify factors contributing for malnutrition.

AIM & OBJECTIVE

To assess and compare nutritional status of 0-6 years children from urban and rural areas of anganwadi centers with special reference to anganwadi services.

METHODOLOGY

This cross-sectional study was conducted among children up-to 6 years registered in anganwadi. Approval from Institutional Ethics Committee was sought. Permission was taken from Divisional Deputy Commissioner, women and child development department for urban area and from Deputy Chief Executive Officer, women and child development department, Zilha Parishad, for rural area. Informed written consent was taken from parents (mother) of study subjects after explaining them of the purpose of study and assuring full confidentiality.

There were 6 ICDS projects in this city. From that 1 ICDS project was selected randomly. Selected ICDS project was comprised of 195 Anganwadi centers. These anganwadis were divided in 5 zones so 1 anganwadi was selected from each zone randomly for study purpose. For rural area, there were 13 ICDS projects. Among that 1 ICDS project selected randomly. Selected ICDS project was comprised of 5 PHCs (Primary Health Center). 1 anganwadi was selected from each PHC randomly. 5 Anganwadi centers were choosed for rural area for study purpose. Probability proportional to size (PPS) sampling was done to achieve sample size. Data collection was done with prior information to Anganwadi worker. Malnutrition of children in urban and rural area were studied with special reference to anganwadi services i.e. participation in ICDS anganwadi, vitamin A taken in last 6 months and deworming in previous 6 months.

Data was analysed and tabulated using frequency distribution tables and proportions. The significance of difference between various factors and level of malnutrition was analysed using the Chi-square test and fisher exact test.

RESULT

Table 1 - Distribution of study subject as per age shows that most of the

study subjects (45%) were from age group from 12-35 months. Same picture was seen in both urban (46%) and rural area (44%). Mean age of study subjects was 29.45 ± 18.31 months (0-72). Mean age of urban study subjects was 29.75 ± 17.79 months (0-72). Mean age of rural study subjects was 29.14 ± 18.85 months (1-72). Median age of study subjects was 27 months. Median age of study subjects in urban area 27.5 months. Median age of study subjects in rural area 26 months.

Table 2 - Prevalence of malnutrition= 53.50%. Prevalence of malnutrition in urban area= 57.50%. Prevalence of malnutrition in rural area= 49.50%.

Table 3 - ICDS scheme was used by 77% children in urban area and by 80% children in rural area regularly. 84.02% children of urban area and 93.25% children of rural area had taken vitamin A. 84.86% of children in urban area and 91.33% of children in rural area had taken deworming tablets.

Table 4 – There was significant difference in nutritional status when compared for participation of ICDS in anganwadi in both urban and rural area as p value were < 0.001 in both areas. Proportion of malnutrition was more when vitamin A was not taken by children. This difference was significant in rural area (p value- 0.02), but not significant in urban area (p value 0.08). Proportion of malnutrition was more when deworming was not done. This difference was significant in urban and rural area as p values were 0.0003 and 0.04 respectively.

Table 3- Distribution of study subjects by anganwadi services.

Anganwadi services		URBAN N (%)	RURAL N (%)	TOTAL N (%)
Did child participate in supplementary nutrition programme? (n=400)	Regular	154 (77.00)	160 (80.00)	314 (78.50)
	Irregular	30 (15.00)	25 (12.50)	55 (13.75)
	No	16 (08.00)	15 (07.50)	31 (07.75)
In the past 6 months, did child receive syrup vitamin A? (n=332) *	Yes	142 (84.02)	152 (93.25)	294 (88.55)
	No	27 (15.98)	11 (06.75)	38 (11.45)
In the past 6 months, did child receive Deworming tablets / syrup? (n=302) @	Yes	129 (84.86)	137 (91.33)	266 (88.07)
	No	23 (15.14)	13 (08.67)	36 (11.93)

* 68 children were less than 9 months. So, they were not eligible for vitamin A supplementation.

@ 98 children were less than 18 months. So, they were not eligible for deworming.

Table 4-Distribution of study subjects according to malnutrition by anganwadi services.

Anganwadi services		URBAN		RURAL		TOTAL N (%)
		Malnutrition N (%)	Normal N (%)	Malnutrition N (%)	Normal N (%)	
Did child participate in supplementary nutrition programme? (n=400)	Regular	75(48.70)	79(51.30)	62(38.75)	98(61.25)	314(78.50)
	Irregular/ not participate	40(86.95)	06(13.05)	37(92.50)	03(07.50)	86 (21.50)
In the past 6 months, did child receive syrup vitamin A? (n=332)	Yes	77(54.22)	65(45.78)	68(44.73)	84(55.27)	294(88.55)
	No	20(74.07)	07(25.93)	09(81.81)	02(18.19)	38 (11.45)
In the past 6 months, did child receive Deworming tablets / syrup? (n=302)	Yes	67(51.93)	62(48.07)	63(45.98)	74(54.02)	268(88.07)
	No	21(91.30)	02(08.70)	10(76.92)	03(23.08)	36 (11.93)

DISCUSSION

In this study, ICDS scheme in anganwadi was used by 77% children in urban area and by 80% children in rural area regularly. 15% of children used it irregularly in urban area and by 12.5% children in rural area. 84.02% children of urban area and 93.25% children of rural area had taken vitamin A. 84.86% of children in urban area and 91.33% of children in rural area had taken deworming tablets.

Deswal B, et al (2016) conducted study an epidemiological study of malnutrition among pre-school children in a slum of Gurgaon, Haryana, India.

Existing govt. health services were utilized in 30.72% of total illness. Utilization of services was poor not only among curative services but also regarding preventive services. [14]

Prabhakumari Chellamma, et al (2017) conducted study factors affecting the nutritional status of 3-6-year-old children attending anganwadis in an urban area in Kerala. 95% children received vitamin A prophylaxis. 25% children received supplementary feedings from anganwadis at least for 20 days in a month. 75% had deworming in the preceding 6 months. 30% children had diarrhoea in the preceding 6 months. [15]

Prasot R, et al (2014) conducted an epidemiological study of Protein

Table 1-Distribution of study subjects according to age and gender.

Sociodemographic factors	URBAN N (%)	RURAL N (%)	TOTAL N (%)
AGE (MONTHS)			
0-11 months	35(17.50)	38(19.00)	73(18.25)
12-35 months	92(46.00)	88(44.00)	180(45.00)
36-59 months	62(31.00)	59(29.50)	121(30.25)
60-71 months	11(05.50)	15(07.50)	26(06.50)
GENDER			
Boys	104(52.00)	104(52.00)	208(52.00)
Girls	96(48.00)	96(48.00)	192(48.00)
Total	200(100)	200(100)	400(100)

Table 2- Distribution of study subjects by nutritional status. (n=400)

NUTRITIONAL STATUS	URBAN N=(%)	RURAL N=(%)	TOTAL N=(%)
NORMAL	85 (42.50)	101(50.50)	186(46.50)
MALNOURISHED	115(57.50)	99(49.50)	214(53.50)
OVERWEIGHT	74(37.00)	56(28.00)	130(37.50)
OVERWEIGHT	02(01.00)	02(01.00)	04(01.00)
OBESEITY	02(01.00)	00(00)	02(00.50)
STUNTING	85(42.50)	69(34.50)	154(38.50)
WASTING	37(18.50)	34(17.00)	71(17.75)

Energy Malnutrition (PEM) among 1-6 years children in rural Lucknow, Uttar Pradesh, India.

There was also an insignificant difference (p=0.402) was found between PEM in children and utilization of Anganwadi services by them and majority (56.3%) of children were malnourished who were not having complementary food from Anganwadi Centre. Statistically a significant association (p<0.001) was found between PEM and condition of housing and environmental sanitation. Nearly three fourth (72.6%) children were affected with PEM who were living in poor conditions of housing and environmental sanitation. [16]

Gondikar A, et al (2017) conducted anthropometric assessment of nutritional status of children attending anganwadi in urban slums of Miraj city, Maharashtra.

147 (71.7%) children were attending Anganwadi regularly and taking supplementary nutrition, while 58 (28.3%) were not attending the Anganwadi regularly. Out of 58 children not attending Anganwadi, the major reason was not having an attendant to bring i.e. 47%, while 19% parents were found ignorant. [17]

Priyanka R, et al (2016) conducted an assessment of the nutritional status of under-five children in a rural area of Thrissur district, Kerala, India. Majority of children, 280 (77.8%) utilized anganwadi services. [18]

CONCLUSIONS

Malnutrition was more when ICDS scheme participation in anganwadi, vitamin A supplementation and deworming were low.

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