Nutritional Status Among Under Five Children in Urban, Rural Anganwadis

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ABSTRACT The nutritional status of children clearly has an impact on their health and development- physical, mental and social. Assessment of nutritional status helps to find out the magnitude of malnutrition among under five children. The present study was conducted to assess the nutritional status among under five children in selected urban and rural Anganwadis of Bhopal city. The comparative descriptive design was used. Totally 50 samples from urban and 50 from rural Anganwadis were selected by using convenient sampling technique. Result: In urban Anganwadis 2% of under five children had normal nutritional status , 20% had I degree malnutrition, 40% had II degree malnutrition, 26% had third degree of malnutrition and 12% of children had IV degree malnutrition. In rural Anganwadis none of the children had normal nutritional status, 2% had I degree malnutrition, 22% had II degree malnutrition, 60 % had III degree malnutrition and 16% of children had IV degree malnutrition. On association with demographic variables, no significant association was found between the under five children coming from urban and rural Anganwadis.

INTRODUCTION

Children are the wealth of tomorrow. A nation's wealth depends on its healthy citizens. A healthy adult emerges from a healthy child. Malnutrition is one of the serious health problem which is widespread all over the country. It is prevalent among young children in the age group of 0-5 years.Globally, 10-11 million under five deaths occur each year out of which around 60 % are due to malnutrition.[1] [2]

As many as 43% of the children in the developing world have low height for age and 9% of children have low weight for height. The incidence of PEM in India in preschool children is about 1-2 %. The great majority of cases of PEM , nearly 80% are the mild and moderate cases which frequently unrecognized.In India ,2.5 million under fives die each year. The major cause of death of underfive is malnutrition. [3] [4]

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The prevalence of stunting among under five is 48% and wasting is 19.8% and with an underweight prevalence of 42.5%, it is the highest in India. The prevelance of child wasting in India (20%) is twice as high as the average prevelance of child wasting in Sub Saharan Africa (9%) and ten times higher in Latin America (2%). The prevalence of child stunting in India (48%) is more than four times than the prevelance of stunting in China (11%). [4]

Growth and development of any country is reflected by the growth and development of children. In country like India , children constitute a major bulk of the population, i.e. 32.4% of the children are aged less than 14 years. A child's growth is the most important indicator of health, which is influenced and measured by adequate intakes of food and nutrients and a decreased susceptibility of disease. Height and weight measurements are used as determinants of normal child growth.[6]

Integrated Child Development Scheme services are provided through a vast network of ICDS centers, better known as Anganwadis. The term 'Anganwadi' is developed from the idea that a good early child care and development center could be run with low cost local materials even when located in an 'Angan' or courtyard. The local Anganwadis are the corner stone of the ICDS programme.[7]

According to IAP, for children to be well nourished they need energy from variety of nutrients to lead a healthy and happy life. While adequate food is important throughout childhood, it is crucial during the first five years of child's life.Approximately 790

million people in the developing world subsist on diets that are deficient in energy. About 200 million children suffer from malnutrition and 2 billion people suffer from a variety of micronutrient deficiencies. The vast majority of food insecure, whether their malnutrition is due to deficiencies in energy or in micronutrients, in low income developing countries and mainly in the poorest areas of those.[1]

According to the records of children in India 2012, a statistical appraisal by the union ministry of statistics and programme implementation, acute malnutrition, as evidenced by wasting, result in a child beginning too thin for his/her height. While 19.8% of children, under 5 year of age, are wasted in the country, which indicates that one out of every 5 children in India is wasted, 43% of children under 5 years of age are under weight for their age.[8]

Nearly half of India's children approximately 60 million are under weight, 45% have stunted growth(too short for their age, 20% are wasted too thin for their height indicating acute malnutrition), 75% are anaemic and 75% are deficient in vitamin A.[9]

According to statistics of ministry of statistics and programme implementation, the report further says that during the period between NFHS 2 (1998-1999) and NFHS 3 (2005-2006), a decline has been observed in case of standard growth and under weight among children under five years of age whereas the percentage case of acute malnutrition, children too thin for their height has increased. The percentage of under weight girls under five year of age is higher than boys under five years of age, while in case of stunted growth and acute malnutrition, girls are in a better condition. The NFHS 3 (2005-2006) result indicate the malnutrition is more prevalent among children in the higher birth order category.[10]

In M.P. the mortality rate for rural children under five is higher than state and national averages, with higher rural and female infant mortality rates. According to NFHS3 (2005-2006), about 60% of children under five years of age are under weight and 50% suffer from chronic under nutrition(stunting). An estimated 12.6% of children aged 0-59 months old (about 1 million children) are severely wasted while institutional deliveries make up more than 80% of child birth in M.P, initiation of breast feeding is still only 66.8% (AHS-11-12) and exclusive breast feeding for the first 6 months is even lower at 41.5%.[11]

MATERIALS AND METHODS

A rural and urban anganwadi based comparative study to assess the nutritional status among under five children was carried out in rural (Gondharmau) and urban (B sector Piplani) anganwadi of Bhopal city.Research design adopted for the present

study was non experimental descriptive comparative design and sampling technique used was convenient sampling technique. Theoretical framework based on modified Health Belief Model. [12]

The data was collected from 50 children of urban anganwadi and from 50 children of rural anganwadi. Urban and rural Anganwadis which is the courtyard shelter in urban areas to combat child hunger and malnutrition among children below five years of age.

The tool was organized under two sections Section A:Demographic data consists of questionnaires about demographic variables to elicit the background information. It consisted of 14 items to find out the information related to age of the child, sex, religion, mother's education ,mother's occupation, father's education, father's occupation, type of family, family income, dietary pattern, birth order of the child and age of enrollment in Anganwadis and history of any congenital/nutritional disorders. Section Bdivided into two parts Part A(dealt with information related to weight, height, and mid arm circumference of under five children in selected urban and rural Anganwadis) and Part B (dealt with an observational check list on nutritional status of under five children. It consisted of physical examination of the under five children to assess their nutritional status. Total number of items were 14).

Pilot study was conducted on 26th March 2015 in urban Anganwadiof B sector Piplani and on 27th March 2015 in rural Anganwadi of Gondharmau of Bhopal city. Day hours were used for assessing demographic data, anthropometric measurements and nutritional status of under five children in urban and rural Anganwadis. The pilot study was done with 20 samples from each of urban and rural Anganwadis.

The researcher obtained the written permission from the concerned authorities and consent from the urban and rural Anganwadi workers was taken .The purpose of the study was explained to Anganwadi workers and confidentiality was assured to the entire subject to get their cooperation. A total of 50 samples from Urban and 50 samples from rural anganwadi were selected for the study. The actual data collection period was from 1st April to 8th April 2015.

The researcher assessed the demographic data, anthropometric measurements and nutritional status among under five children of urbanAnganwadi from 1st April to 3rd April 2015 and rural Anganwadi from 6th April to 8th April 2015 with the same data collection tools.

RESULTS

In urban Anganwadis 2% of under five children had normal nutritional status , 20% had I degree malnutrition, 40% had II degree malnutrition, 26% had third degree of malnutrition and 12% of children had IV degree malnutrition. In rural Anganwadis none of the children had normal nutritional status, 2% had I degree malnutrition, 22% had II degree malnutrition, 60 % had III degree malnutrition and 16% of children had IV degree malnutrition.

Table 1: DESCRIPTION OF SOCIO DEMOGRAPHIC VARIABLES IN URBAN AND RURAL ANGANWADIS

Sl.No	Demographic Variables	Urban Anganwadi	Rural Anganwadi
1.	Age group		
	0-1 year	6%	10%
	1-2 year	8%	16%
	2-3 year	28%	14%
	3-4 year	26%	22%
	4-5 year	32%	38%
2.	Sex		
	Male	56%	52%
	Female	44%	48%
3.	Religion		
	Hindu	96%	98%
	Muslim	2%	2%
	Sikh	0%	0%
	Christian	2%	0%
	Others	0%	0%
4.	Mother's Occupation		
	Labourer	16%	2%
	Home maker	80%	94%
	Private employee	4%	4%
	Govt. employee	0%	0%
5.	Mother's Education		
	Illiterate	32%	16%
	Primary school	40%	48%
	High school	20%	36%
	Higher secondary school	8%	0%
	Graduate/post graduate	0%	0%
6.	Father's occupation		
	Farmer	4%	34%
	Private employee	92%	66%
	Govt.employee	4%	0%
7.	**Father's education**		
	Illiterate	16%	6%
	Primary school	40%	46%
	High school	28%	38%
	Higher secondary school	12%	0%
	Graduate/post graduate	4%	10%
8.	Type of family		
	Nuclear	70%	48%
	Joint	28%	52%
	Extended	2%	0%
9.	Family monthly income		
	5000-10000	72%	68%
	10000-15000	26%	30%
	15000-20000	2%	2%
	Above 20000	0%	0%
10.	Dietary pattern		
	Vegetarian	42%	70%
	Non vegetarian	56%	30%
	Egetarian	2%	0%
11.	Birth order		
	1	36%	38%
	2	48%	34%
	3	10%	28%
	Above 3	6%	0%

Table 1 shows that ,(32%) children in urban anganwadi and (38%) in rural anganwadi are from the age between 4-5 year. (56%) male children in urbananganwadiand(52%) male in rural anganwadi on the other hand , in ruralanganwadifemale children are more(48%) than the urbananganwadi (44%),

Majority belongs to Hindu religion both urban (96%) and rural (98%)Anganwadis. A large majority of mother of under five children were home maker in both urban (80%) and rural (94%)anganwadis. Majority of children's monthly income of family were not satisfactory in urban (72%) and in rural (68%) , which ranges between 5000-10,000 Rs./month.

Non vegetarians (56%) in urban anganwadi and (30%) in rural anganwadi were found,similarly (42%) vegetarian in urban anganwadi and maximum (70%) vegetarian in rural anganwadi.In

urban anganwadi near about (48%) were 2nd child in home and in rural anganwadiatleast (38%) were 1st child.

Table 2 shows that in urban areas under five children's height, weight and mid arm circumference were comparatively lesser than rural under five children and the degree of malnutrition was found to be more among urban children.

Sl.No	Anthropometric Measurements	Under five children in urban Anganwadis (Mean)	(S.D)	Under five children in rural Anganwadis (Mean)	(S.D)
1	Height for age	91.59	0.78	99.46	0.0424
2	Weight for age	76.07	21.21	84.51	12.49
3	Weight for height	0.76	0.21	1.65	0.1202
4	Mid arm circumference	15.38	0.71	14.15	2.12

Table 2: Mean and standard deviation of anthropometric measurements among children attending urban and rural Anganwadis

Fig 2 shows that in urban Anganwadis 2% of under five children had normal nutritional status , 20% had I degree malnutrition, 40% had II degree malnutrition, 26% had third degree of malnutrition and 12% of children had IV degree malnutrition. In rural Anganwadis none of the children had normal nutritional status, 2% had I degree malnutrition, 22% had II degree malnutrition, 60 % had III degree malnutrition and 16% of children had IV degree malnutrition.
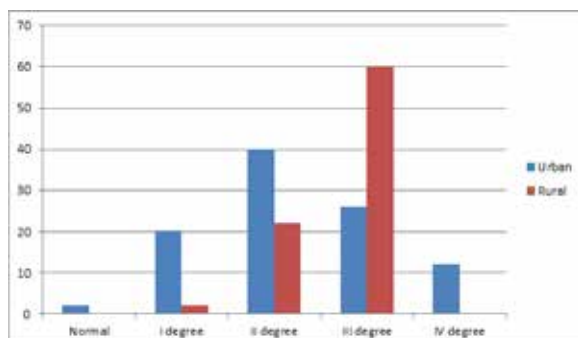

Fig 2: Bar diagram showing percentage distribution on degree of malnutrition among under five children attending urban and rural Anganwadis.

DISCUSSION

Assessment of nutritional status and comparison between rural and urban Anganwadisspecially in under five children is very important to assess and improve the nutritional status of the children not only in urban but also in rural areas.

Totally 50 samples from urban and 50 from rural Anganwadis were selected by using convenient sampling technique. In urban Anganwadis 2% of under five children had normal nutritional status , 20% had I degree malnutrition, 40% had II degree malnutrition, 26% had III degree of malnutrition and 12% of children had IV degree malnutrition. In rural Anganwadis none of the children had normal nutritional status, 2% had I degree malnutrition, 22% had II degree malnutrition, 60 % had III degree malnutrition and 16% of children had IV degree malnutrition. In another study done by Subha.Swhich revealed that in urban Anganwadis (74.4%) underfive children had normal nutritional status, 2 % had Ist degree malnutrition and none of the children had IIIrd degree malnutrition and in rural Anganwadis (34.7%) had I st degree, (10 %) of children IInd degree and (1.3%) had IIIrd degree malnutrition.[13]In another study , B. Padmavathi reported the prevalence of severe PEM ranged between 5-6% and

mild PEM about 40% .[14]

According to the records of children in India 2012, a statistical appraisal by the union ministry of statistics and programme implementation, acute malnutrition, as evidenced by wasting, result in a child beginning too thin for his/her height. While 19.8% of children, under 5 year of age, are wasted in the country, which indicates that one out of every 5 children in India is wasted, 43% of children under 5 years of age are under weight for their age.[10]

In present study,32% children in urban anganwadi and 38% in rural anganwadi are from the age between 4-5 year. In another study done by Ram Milan prasotfoundthat out of 400 children (1-6 yrs) prevalence of PEM was (54.8%), children age group 1-3 yrs (71.2%) were more malnourished as compared to 3-6 yrs age group(46.6%).Malechildren (56%) in urbananganwadiand(52%) in rural anganwadi,on the other hand , in ruralanganwadifemale children are more(48%) than the urbananganwadi (44%).Ram Milan prasotreportedRegarding the sex , girls (61.8%) were significantly more malnourished in all grades of PEM as compared to the boys(48.6).[11]

Majority belongs to Hindu religion both urban (96%) and rural (98%)Anganwadis. A large majority of mother of under five children were home maker in both urban (80%) and rural (94%) anganwadis .

Majority of children's monthly income of family were not satisfactory in urban (72%) and in rural (68%) , which ranges between 5000-10,000 Rs./month.KebedeMengistureportedthat 47.6%,30.9% and 16.7% children were stunted , underweight and wasted, respectively. The main associated factors were child age , family monthly income.[15]

Non vegetarians (56%) in urban anganwadi and (30%) in rural anganwadi were found,similarly (42%) vegetarian in urban anganwadi and maximum (70%) vegetarian in rural anganwadi .In urban anganwadi near about (48%) were 2nd child in home and in rural anganwadiatleast (38%) were 1stchild.Where by the another study by NFHS 3 (2005-2006) result indicate that the malnutrition is more prevalent among children in the higher birth order category.[16]

On association with demographic variables, no significant association was found between the under five children coming from urban and rural Anganwadis.

CONCLUSION
Table 3: Comparison of the degree of malnutrition among under five children attending urban and rural Anganwadis

Sl. No.	Grades of malnutrition	Under five children in urban Anganwadis(%)	Under five children in rural Anganwadis(%)
1	Normal	2	-
2	I degree	20	2
3	II degree	40	22
4	III degree	26	60
5	IV degree	12	16

In urban Anganwadis 2% of under five children had normal nutritional status , 20% had I degree malnutrition, 40% had II degree malnutrition, 26% had third degree of malnutrition and 12% of children had IV degree malnutrition. In rural Anganwadis none of the children had normal nutritional status, 2% had I degree malnutrition, 22% had II degree malnutrition, 60 % had III degree malnutrition and 16% of children had IV degree malnutrition.

On the basis of findings, it has been concluded that there is a difference between the nutritional status of under five children

in degrees of malnutrition in rural and urban Anganwadis. In urban areas under five children's height, weight, mid arm circumference were comparatively lesser than rural under five children and the degree of malnutrition was found to be more among urban children.

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