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Research Article

A COMPARATIVE STUDY TO ASSESS THE NUTRITIONAL STATUS OF URBAN AND RURAL UNDER-FIVE CHILDREN

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ABSTRACT

Malnutrition is the main cause for mortality and morbidity among under five children in India. The aim of study was to assess and compare the nutritional status of under-five children among urban community (Peetalnagri) and rural community (Bagarpur) by using MUAC i.e., mid upper arm circumference in selected community at Moradabad. A quantitative research approach was used and research design adopted for the study was Non-experimental (comparative) research design. A total of 120 under-five children were selected by purposive sampling technique. The structured questionnaire was prepared to collect the data regarding demographic variables and the technique used for data collection was biophysical measurement (mid-arm circumference). Researcher found that majority of children in both groups i.e., urban community 48.33% (29) and rural community 70% (42) have mild malnutrition. Percentage of severe malnutrition in both groups is nil. Result revealed that rural area is having more number of malnourished under-five children as compared to urban area. In comparison, the researcher found that rural area has 25% more malnourished children as compared to urban area.

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INTRODUCTION

Children are the future of a country and precious resources of sustainable development of the human society. Improving nutrition and health status of children is the basis for realization of the comprehensive development of country. Malnutrition during infancy and toddler stage can lead to irreversible delay in growth and cognitive development that negatively affects intelligence potentials, impairs learning abilities and productivity in the later life and increases the risks of Obesity, Hypertension, Coronary heart disease, Diabetes, and other chronic diseases during adulthood.

Good nutrition is essential not only for normal physical growth and development but also for development of mental health. Health of an individual depends on the intake of food. It is necessary for growth and repair of tissues. Nutritionally deprived child do not gain height and weight. Nutritional status of children is of vital importance in their growth and development. In the promotion and maintenance of health, in the prevention of disease & in the restoration of health following illness or injury. If nutrition is inadequate during growth and development period physical or mental retardation may result.

Al-Jassir MS *et.al*, (2004), conducted the study on anthropometric measurements of infants and under five children in Riyadh City. The measurements showed that there had been no obvious change in the weights and heights of children during the past 13 years. There is a need for more comprehensive nutritional health education among the local population.

The proportion of under nutrition is higher in female-headed households. Shortage of farmland, lack of irrigation, dispossession of livestock, shortage of non-farm employment options, parental illiteracy, high number of children, water inadequacy, food taboos and wrong eating habits of families, poor child feeding practices, deprivation of health nutrition education as well as maternal attributes such as young motherhood, low body mass index and short stature of mothers influenced the nutritional status of the children (Haidar J *et.al*, 2005)

Singh MB *et.al*, (2006), conducted the study on the nutritional status of children aged 0-5 years in a drought-affected desert area of western Rajasthan, India. The results revealed that the extent of malnutrition was significantly higher in girls than boys. PEM, vitamin A and B complex deficiencies and

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anaemia, along with dietary deficits of energy and protein, were observed to be higher than in non-desert areas.

The nutritional parameters showed a significant association with parental education, socio-economic status, family size, environmental conditions, & episodes of common diseases (Bhanderi D *et.al*, 2006)

The predominance of stunting in older children indicates failure in growth and development during the first two years of life. Tackling childhood stunting is a high priority, and there should be fostered efforts to ensure that malnutrition-prevention strategies include the urban poor (Olack B *et.al*, 2011)

MATERIAL AND METHODS

Location of study and sample

The study was conducted at Peetalnagri as urban community and Bagarpur as rural community at Moradabad. A total of 120 under-five children were selected by using purposive sampling technique. Out of 120 under-five children, 60 children were from Peetalnagri (urban area) and 60 children were from Bagarpur (rural area).

Research design and approach

A quantitative research approach was used for this study. Research design adopted for the study was non-experimental comparative research design.

Procedure

Data was collected after getting permission from Parshad of Peetalnagri (urban area) and Gram Pradhan of Bagarpur (rural area). Tool selected for the study was structured questionnaire for demographic data and Inchtape to measure mid upper arm circumference. Technique used was bio-physical measurement. The questionnaire comprised of two parts: 1) Demographic data of under-five children 2) Space for entering mid upper arm circumference Nutritional assessment was done on the basis of Arnold's classification of malnutrition:

Nutritional status	MUAC range
Mild malnutrition	13.5 cm – 16 cm
Moderate malnutrition	12.5 cm – 13.5 cm
Severe malnutrition	< 12.4 cm

Statistical analysis

Analysis was done by using descriptive measures (frequency and percentage, Mean, Median and Standard deviation) and inferential statistics by Chi-square. 't'-value was calculated to determine the difference in nutritional status of under five children in urban and rural community.

RESULT

Demographic variable description

Table 1 Frequency and percentage distribution of children according to demographic variables of under-five children.

N=120 (60+60)

Demographic variables	Urban		Rural		Combined		
	N	%	N	%	N	%	
Age	1-2 yrs	9	15	12	23.33	21	17.5
	2-3 yrs	23	38.33	14	25	37	30.83

Sex	3-4 yrs	18	30	21	40	39	29.16
	4-5 yrs	10	16.67	13	33.33	23	19.16
	Male	33	55	34	56.67	67	55.83
Religion	Female	27	45	26	43.33	53	44.16
	Hindu	53	88.33	56	93.33	109	90.83
	Muslim	7	11.66	4	6.66	11	9.16
	Christian	0	0	0	0	0	0
	Others	0	0	0	0	0	0
Maternal education	Illiterate	16	26.67	23	38.33	39	32.5
	Primary	10	16.67	16	26.67	26	21.67
	Matric	22	36.67	12	20	34	28.33
Monthly Family income (In Rs.)	Graduation	12	20	9	15	21	17.5
	< 1000	0	0	0	0	0	0
	1000-5000	22	36.67	44	73.33	66	55
Birth order	5000-10,000	29	48.33	16	26.67	45	37.5
	>10,000	9	15	0	0	9	7.5
	First	16	26.67	24	40	40	33.33
	Second	21	35	19	31.67	40	33.33
	Third	13	21.67	11	18.33	24	20
	More	10	16.67	6	10	16	13.33

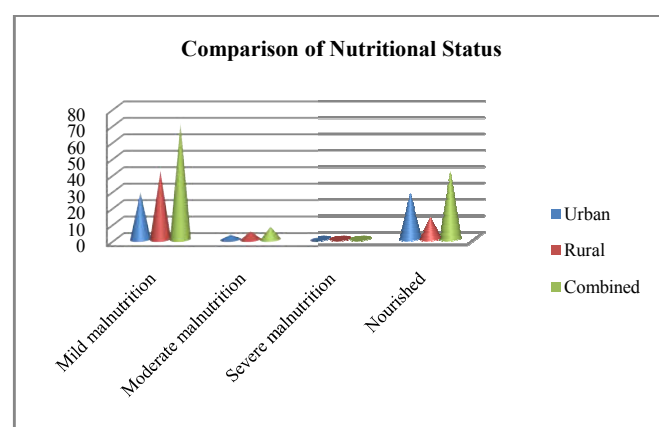


Figure 1 Comparison of nutritional status between urban and rural under-five children

N=120 (60+60)

Figure 1 Depicts majority of children in both groups i.e. urban community 48.33% (29) and rural community 70% (42) have mild malnutrition. Whereas 5% (3) from urban community and 6.67% (5) from rural community have moderate malnutrition. Percentage of severe malnutrition in both groups is nil. Percentage of malnourished under-five children in rural area is more as compared to urban under-five children.

Table 2 Association of nutritional status of urban under-five children with their demographic variables

N=120 (60+60)

Demographic data	Nutritional status				df	Table value	Chi calculated value
	Mild	Moderate	Severe	Nourished			
Age (in years)	1-2	4	1	0	5	6	12.59
	2-3	10	2	0	6		
	3-4	13	0	0	10		
	4-5	2	0	0	7		
Sex	Male	17	1	0	15	2	5.99
	Female	12	2	0	13		
	Hindu	26	3	0	24		
Religion	Muslim	3	0	0	4	2	5.99
	Christian	0	0	0	0		
	Others	0	0	0	0		
	Illiterate	8	3	0	5		
Maternal education	Primary	5	0	0	5	6	12.59
	Matric	9	0	0	13		
	Graduate	7	0	0	5		
Monthly income	Less than 1000	0	0	0	0	4	9.49
	1000-5000	11	2	0	9		

	5000-10,000	13	1	0	15			
	>10,000	5	0	0	4			
Birth order of child	First	7	0	0	9			
	Second	8	2	0	11	6	12.59	5.775 NS
	Third	9	0	0	4			
	More	5	1	0	4			

Nutritional status of urban and rural under-five children was compared by using inferential statistics. At 5% level of significance with 'p' value of 0.05 and 't' value of 2.439, researcher found a significant difference in nutritional status of under-five children between urban and rural communities. The age of children was found significantly associated (at 5% level of significance) with nutritional status of under-five children in both the communities.

Table 2 Depicts that at 0.05 level of significance, age of the children demonstrated a significant association with the under-five children's nutritional status in urban community.

Table 3 Association of nutritional status of rural under-five children with their demographic variables

N=120 (60+60)

Demographic data	Nutritional status				df	Chi table value	Chi calculated value	
	Mild	Moderate	Severe	Nourished				
Age of child (in years)	1-2	8	2	0	2	6	12.59	16.733 S*
	2-3	10	3	0	1			
	3-4	18	0	0	3			
	4-5	6	0	0	7			
Sex	Male	25	1	0	8	2	5.99	2.99 NS
	Female	17	4	0	5			
Religion	Hindu	39	5	0	12	2	5.99	0.388 NS
	Muslim	3	0	0	1			
	Christian	0	0	0	0			
	Others	0	0	0	0			
Maternal education	Illiterate	16	2	0	5	6	12.59	2.835 NS
	Primary	12	2	0	2			
	Matric	7	1	0	4			
	Graduate	7	0	0	2			
Monthly income	Less than 1000	0	0	0	0	2	5.99	2 NS
	1000-5000	30	5	0	9			
	5000-10,000	12	0	0	4			
	More than 10,000	0	0	0	0			
Birth order of child	First	16	2	0	6	6	12.59	2.669 NS
	Second	14	1	0	4			
	Third	9	1	0	1			
	More	3	1	0	2			

Table 3 Depicts that at 0.05 level of significance, age of the children demonstrated a significant association with the under-five children's nutritional status in urban community.

DISCUSSION

The data collected were grouped and analyzed by using descriptive and inferential statistical methods. Tables and figures were used to explain the demographic variables of under-five children with their nutritional status in urban and rural community. Result revealed that majority of children were in the age group of 2-3 years (38.33%) in urban area and in age group of 3-4 years (40%) in rural area. Respectively male children were more in both urban (55%) and rural area (56.67%) in comparison to female children. The majority of children belongs to Hindu religion in both urban (88.33%) and rural area (93.33%). It was found that mothers of most of the children were educated up to Matric level (36.67%) in urban area whereas a maximum of mothers were illiterate in rural area (38.33%). The family monthly family income in urban area is Rs.5000-10,000 (48.33%) which is more than the families of rural area at Rs.1000-5000 (73.33%).

The maximum samples in urban area were second in their birth order (35%) whereas in rural area first birth order children participated in the study (40%) which is higher than the urban samples.

CONCLUSION

The major conclusion of the study drawn on the basis of the findings of the study was that majority of children from both the communities were mildly malnourished and age of the children in both urban and rural community was significantly associated with the under-five children's nutritional status. Researcher found a significant difference between the nutritional status of under five children in urban and rural community i.e., percentage of malnourished children in rural community is 25% more as compared to urban community.

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