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To Compare the Nutritional Status among under 5 Children in Anganwadi Center of Urban and Rural Area

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Nursing Student's Perception and their Future Intentions

Abstract:
Background: Nutritional assessment is important in every country which serves appropriate data in gathering processes to enable accurate planning and implementation of health- care services to reduce morbidity and mortality associated with malnutrition.[4]

Anganwadi is a special school for preschool children, which are mainly launched with the intention of mother and child care with nutritional supplements under Integrated Child Development Scheme in 1975. It also has a role in teaching, recreational activities and growth monitoring of preschool children.[2]

ICDS scheme has expanded remarkably in its scope and coverage providing a well-integrated package of services through a network of community level Anganwadi Centers (AWCs). The ICDS programme today covers 8.4 crore children out of 16.45 crore children of below 5 years.[8] The term 'Anganwadi' is developed from the idea that a good early child care and development center, run with low cost local ingredients. The local Anganwadis are the corner stone of the ICDS Programme.[4]

According to IAP, for children to be well nourished, they need adequate amount of energy from variety of nutrients to lead a healthy life. We know that adequate amount of food is important throughout childhood but first five years of childhood is very crucial period.[4]

India constitutes 40% of the world's severely malnourished under-5 children and one in every third children in India are malnourished. Daily more than 6000 under- five children die due to malnutrition in India.[9] 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 the food-insecure, whether their malnutrition is due to deficiencies in energy or in micronutrients, live in low-income developing countries and mainly in the poorest areas.[4]

I. INTRODUCTION

Nutrition plays an important role in growth and development of children.[13] Adequate nutrition is essential in early childhood to ensure healthy growth, proper organ formation and function, and also for strong immune system, neurological and cognitive development.[14] Inadequate nutrition may leads to malnutrition, growth retardation, decreased working capacity and slow mental and social development.[13] In addition, it is estimated that more than one-third of under-five deaths are attributable to under nutrition.[14]

Overall under nutrition represents the single largest killer of under-5 children, being responsible for 3.1 million child deaths each year (45% of the total under 5 years' deaths). In 2013, 52 million children under 5 (10% of global population) were wasted. Other 165 million children in the world, a quarter of the world's under 5 population, were too short for their age, or stunted, which can impact the child's physical and mental development.[13]

The 4th National Family Health Survey (NFHS-4) showed that the under 5 mortality rate in India is 32. NFHS-4 reported that the percentage of children under 5 years who are stunted (height for age) and who are under weight (weight for age) are 32.5 and 31.5 respectively. The percentage of children under 5 years who are wasted (weight for height) and severely wasted are 20.3 and 6.5 respectively.[15]

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 underweight among children under 5 years of age whereas the percentage case of acute malnutrition, children too thin for their height has increased. The percentage of underweight girls under 5 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.[16]

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II. OBJECTIVES

- To assess the nutritional status among under 5 children in Anganwadi center of urban area.
- To assess the nutritional status among under 5 children in Anganwadi center of rural area.
- To compare the nutritional status among under 5 children in Anganwadi center of urban and rural area.
- To find out the association between the nutritional status of under 5 children of urban area with their demographic variables.
- To find out the association between the nutritional status of under 5 children of rural area with their demographic variables.

III. ASSUMPTIONS

- There may be difference between the nutritional status of under 5 children attending Anganwadi center of urban and rural area, Agartala.
- There may be association between the nutritional status of under 5 children urban and rural area with their demographic variables.

IV. HYPOTHESIS

- **H01:** There is no significant difference between the nutritional status of under 5 children attending Anganwadi center of urban and rural area, Agartala at $p<0.05$ significant level.
- **H02:** There is no significant association between nutritional status of under 5 children of urban area with their demographic variables at $p<0.05$ significant level.
- **H03:** There is no significant association between nutritional status of under5 children of rural area with their demographic variables at $p<0.05$ significant level.

V. METHODS

- **Research approach**: Quantitative research approach.
- **Research design:** Non-experimental comparative descriptive design.
- **Variables of the study:**
  - **Research variable:** Nutritional status among under 5 children.
  - **Demographic variables:** Age of children, Sex, religion, mother's education, marital status of mother, mother's occupation, type of family, family income per month, dietary pattern of family, order of birth, no. of children in family, utilization of Anganwadi services.
- **Setting of the study:**
  - **For pilot study:** Usha-Bazaar Anganwadi Center (rural) and East Sibnagar Anganwadi Center, Dhaleawar (urban).
  - **For main study:** Nutanpalli Anganwadi Center, Narsingarh (rural) and Srilankabasti Anganwadi Center (urban).
- Criteria for selecting setting were as follows:
  - Availability of the study sample.
  - Feasibility of conducting the study.
  - Co-operation for conducting the study.
- **Population:** Under 5 children attending Anganwadi center.
- **Sample & sampling technique:**
  - **Sample:** Under 5 children attending Anganwadi center.
  - **Sample technique:** Non-probability purposive sampling technique.
  - **Sample size:** In the present study, total sample size 100 numbers of under 5 children, where 50 sample will collect from urban & 50 sample will collect from rural selected Anganwadi centre.
  - Sampling criteria:
  - **Inclusion criteria:** The study includes the under 5 children – who are available at the time of data collection.

VI. RESULTS

The analysis report is organized under following sections: Section I: Analysis of demographic variables of under 5 chilren.

- Section II: Assessment of nutritional status among under 5 children in Anganwadi center of urban area.
- Section III: Assessment of nutritional status among under 5 children in Anganwadi center of rural area.
- Section IV: Compare the nutritional status among under 5 children in Anganwadi center of urban and rural area.
- Section V: Association between nutritional statuses of under 5 children of urban area with their demographic variables.
- Section VI: Association between nutritional statuses of under 5 children of rural area with their demographic variables.

n=50+50

Sl. No	Demographic variables	Urban Anganwadi center		Rural Anganwadi center	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1.	Age:				
	2years1 month – 3 years	15	30%	18	36%
	3years1 month – 4 years	19	38%	14	28%
	4years1 month – 5 years	16	32%	18	36%
2.	Sex:				
	Male	24	48%	26	52%
	Female	26	52%	24	48%
3.	Religion:				
	Hindu	10	100%	10	100%
	Muslim	-	-	-	-
	Christian	-	-	-	-
	Buddhist	-	-	-	-

Table 1: The frequency and percentage distribution of demographic variable with respect to age, sex and religion

This table 1 represents the demographic variable with respect to age, sex and religion.

In terms of age, in urban area, maximum number 19 (38%) under 5 children are between the age group of 3 years 1 month – 4 years, 16 (32%) of them are between the age group of 4 years 1 month – 5 years, and 15 (30%) of them are between the age, group of 2years 1 month – 3 years. In rural area, maximum number 18 (38%) under 5 children are between the age group of 2 years 1 month – 3 years and 4 years 1 month – 5 years, and 14 (28%) of them are between the age group of 3years 1 month – 4 years.

In terms of sex, in urban area, maximum number 26 (52%) under 5 children are female and 24 (48%) are male. In rural area, maximum number 26 (52%) under 5 children are male and 24 (48%) are female.

In terms of religion, 50 (100%) under 5 children are Hindu both in urban and rural area.

To find out the association between nutritional statuses of under 5 children of urban area with their demographic variables.

H02: There is no significant association between nutritional status of under 5 children of urban area with their demographic variables.

Sl No.	Demographic variables	Category	Chi square value $\chi 2$	Degree of freedom df	Tabulated chi square value $\chi 2$	Remarks
1.	Age	2years 1month –3years 3years 1month –4years 4years 1month – 5years	0.11	2	5.99	S
2.	Sex	Male Female	0.81	1	3.84	S
3.	Religion	Hindu Muslim Christian Buddhist	0	1	3.84	S
4.	Mother's education	Illiterate Primary Secondary Graduate and above	0.85	2	5.99	S
5.	Marital status of the mother	a. Married b. Divorced c. Widow	0	1	3.84	S

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6.	Mother's occupation	a. Housewife b. Govt. employee c. Self-employee d. Private employee	0.38	1	3.84	S
7.	Type of family	a. Nuclear b. Joint c. Extended family	0.08	1	3.84	S
8.	Family income per month	a. Rs.<3000/- b. Rs.3001 –Rs.5000/- c. Rs.5001 –Rs.7000/- d. Rs.7001 – Rs.10,000/- e. Rs.>10,000/-	0.96	2	5.99	S
9.	Dietary pattern of family	a. Vegetarian b. Non-vegetarian	0	1	3.84	S
10.	Order of birth	a. First b. Second c. Third d. More than third	0.89	1	3.84	S
11.	No. of children in family	a. One b. Two c. Three d. More than three	0.89	1	3.84	S
12.	Utilization of Anganwadi services	a. Yes b. No	0	1	3.84	S

Table 6: Description of calculated chi square value, degree of freedom, tabulated chi square value of urban area. n=50+50

S= Significance at 5% level ($p<0.05$ level).

This table 6 represents the association between nutritional status of under 5 children of urban area with their demographic variables.

In terms of age, the calculated value is 0.11 which is less than tabulated value with df 2. Hence there is significant difference between nutritional status with age.

In terms of sex, the calculated value is 0.81 which is less than tabulated value with df 1. Hence there is significant difference between nutritional status with sex.

In regards to religion, the calculated value is 0 which is less than tabulated value with df 1. Hence there is significant difference between nutritional status with religion.

In regards to mother's education, the calculated value is 0.85 which is less than tabulated value with df 2. Hence there is significant difference between nutritional status with mother's education.

In terms of marital status of mother, the calculated value is 0 which is less than tabulated value with df 1. Hence there is significant difference between nutritional status with marital status of mother.

In regards to mother's occupation, the calculated value is 0.38 which is less than tabulated value with df 1. Hence there is significant difference between nutritional status with mother's occupation.

In terms of type of family, the calculated value is 0.08 which is less than tabulated value with df 1. Hence there is significant difference between nutritional status with type of family.

In terms of family income per month, the calculated value is 0.96 which is less than tabulated value with df 2. Hence there is significant difference between nutritional status with family income per month.

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In regards to dietary pattern of family, the calculated value is 0 which is less than tabulated value with df 1. Hence there is significant difference between nutritional status with dietary pattern.

In terms of order of birth, the calculated value is 0.89 which is less than tabulated value with df 1. Hence there is significant difference between nutritional status with order of birth.

In regards to no. of children in family, the calculated value is 0.89 which is less than tabulated value with df 1. Hence there is significant difference between nutritional status with no. of children in family.

In regards to utilization of Anganwadi services, the calculated value is 0 which is less than tabulated value with df 1. Hence there is significant difference between nutritional status with utilization of Anganwadi services.

The above data shows that there is significant association between the nutritional status of under 5 children of urban area with their demographic variables. Hence the null hypothesis (H02) is rejected and accepted the research hypothesis.

VII. CONCLUSION

The following conclusions are drawn from the present study:

- On the basis of findings, it has been concluded that there is significant difference between the nutritional status of under 5 children in Anganwadi center of urban and rural area is significant at $p<0.05$ level.
- In rural area, under 5 children height and weight were comparatively lesser than urban under 5 children.
- In rural area, total number of well-nourished under 5 children were lesser than urban under 5 children.
- On the basis of findings, it has been concluded that there is significant association between the nutritional status of under 5 children in Anganwadi center of urban and rural area with their demographic variables.

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