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Research Article

# A Study on Association of Sociodemographic Factors with Nutritional Status of Under-Five Age Group in Rural Area of Barabanki District

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## Abstract

**Introduction:** More than half of global deaths in children younger than 5 years of age are attributable to under-nutrition in India. Managing the burden of malnutrition is a major priority in most states of the country. In order to initiate action and monitor progress, WHO Global Nutrition Targets were established for six malnutrition indicators to be achieved by 2025 and targets were set by the UN Sustainable Development Goals (SDGs) with the primary aim of eliminating malnutrition by 2030. Focus on the joint efforts towards reducing malnutrition worldwide, was strengthened by declaring 2016-25 as the Decade of Action on Nutrition by the United Nations (UN) (India State-Level Disease Burden Initiative Malnutrition Collaborators, 2019).

According to NFHS-5 data, in India children under-five who were stunted were 35.5%, wasted were 19.3%, severely wasted were 7.7%, underweight 32.1. In Uttar Pradesh children under-five who were stunted were 39.7%, wasted were 17.3%, severely wasted were 7.3%, underweight 32.1 (NFHS 2020-21).

**Objectives:** This study aimed to assess association of sociodemographic factors with nutritional status of under-five age group in rural area of Barabanki.

**Materials and methods:** A Community based Cross Sectional study was conducted among under-five children under field practice area of Rural Health Training Centre (RHTC), Satrikh. Data was collected on structured pretested questionnaire. A predesigned and pretested semi-structured questionnaire was used. Data were collected through house-to-house survey by interviewing mothers of under five children. Total 180 under- five children were covered. The data was analysed using statistical software SPSS trial version 26.0.

**Results:** Nutritional status of under-five children were found to be significantly (p =0.035) associated with category of children. Nutritional status of under-five children was found to be significantly (0.025) associated immunization status of children. In present study, nutritional status of under-five (According to IAP classification of malnutrition). 33.3% were normal, 28.3% were mild malnourished, 16.7% were moderate malnourished, 12.2% were severe malnourished, 9.4% were very severely malnourished.

**Conclusion:** Nutritional status of under-five children was found to be significantly (p =0.035) associated with category of children. Nutritional status of under-five children was found to be significantly (0.025) associated immunization status of children.

**Keywords: WHO; NFHS; POSHAN**

## Introduction

More than half of global deaths in children younger than 5 years of age are attributable to under-nutrition in India. Managing the burden of malnutrition is a major priority in most states of the country. In order to initiate action and monitor progress, WHO Global Nutrition Targets were established for six malnutrition indicators to be achieved by 2025 and targets were set by the UN Sustainable Development Goals (SDGs) with the primary aim of eliminating malnutrition by 2030. Focus on the joint efforts towards reducing malnutrition worldwide, was strengthened by declaring 2016-25 as the Decade of Action on Nutrition by the United Nations (UN) [1].

According to NFHS-5 data, in India children under-five who were stunted were 35.5%, wasted were 19.3%, severely wasted were 7.7%, underweight 32.1. In Uttar Pradesh children under-five who were stunted were 39.7%, wasted were 17.3%, severely wasted were 7.3%, underweight 32.1 [2].

Ambitious targets have been set for POSHAN Abhiyaan to reduce stunting (2%), underweight (2%), and anemia (3%) among young children, women and adolescent girls and reduce low birth weight (2%) per annum. Also, the National Health Mission (NHM) includes programmatic components such as health system strengthening, Reproductive-Maternal-Neonatal-Child and Adolescent Health (RMNCH+A), and prevention and treatment of communicable and non-communicable diseases. The NHM envisages achievement of universal access to equitable, affordable & quality health care services that are accountable and responsive to people's health and wellbeing [3].

### Objectives

This study aimed to assess association of sociodemographic factors with nutritional status of under-five age group in rural area of Barabanki.

- To assess the nutritional status among under-five-year children.
- To enumerate environmental and socioeconomic risk factors associated with under nutrition in rural population.

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- To recommend suitable diet for fulfilling the nutritional requirements of the child.

## Materials and Methods

A Community based Cross Sectional study was conducted among under-five children under field practice area of Rural Health Training Centre (RHTC), Satrikh from September 2021 to November 2022.

Sample size was calculated by 4 $pq/L^2$. p denotes prevalence, q denotes 1-p, L-Precision= 7.5%, p was taken as 37% (Prevalence of underweight CNNS 2016-18). Considering a nonresponse rate of 10% the sample size came out to be 180.

### Sampling technique

Multistage sampling was done

- Stage 1- Simple Random sampling was used for selecting the block in District Barabanki.
- Out of 15 blocks of district Barabanki, 2 blocks Harakh and Banki were chosen by Lottery method.
- Stage 2- Simple random sampling was done for selecting villages.
- Out of 16 villages, 8 villages were selected by simple random sampling (Lottery method). Line listing-under five children.
- Stage 3- Systematic random sampling was done for selecting Household (nth house is selected). From household under five children were selected for the study.
- Door to door survey was done under-five children were questioned with the help of pretested questionnaire (Figure 1).

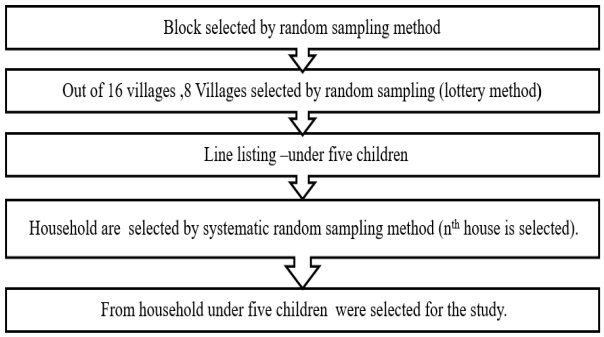


**Figure 1**: Sampling technique.

### Statistical analysis

For descriptive statistics detailed tables, pie charts, bar charts and column charts were prepared. Statistical tests of significance i.e., Chi Square was used to predict the association between the independent and dependent variables. The data was analysed using statistical software SPSS trial version 26.0. Value of $p<0.05$ was considered to be statistically significant.

## Results

The distribution of under-five children to their sociodemographic characteristics Age of Respondents, Education of Respondents, Occupation of Respondents, Type of Family, Religion, Caste, Age of Child, Sex of Child (Table 1).

Out of 180 study participants, 36 (20.0%) of respondent were less than 25 years of age, 96 (53.3%) were between 25 and 29 years, 48 (26.7%) were more than 30 years of age. Regarding education of respondent, out of total study participants, 44 (24.4%) were illiterate, 91 (50.6%) had primary education, Middle school educated were 17(9.4%), High school and above educated were 28 (15.6%). In the study participants, Occupation of respondents, homemakers were 164 (91.1%), whereas workings were 16(8.9%). Out of 180 participants, 55(30.6%) belonged to nuclear family, 125(69.4%) belonged to Joint family.

In the present study, distribution as per religion, Hindus were 139(77.2%) and Muslim were 41(22.8). 47 (26.1%) belonged to general category, 68 (37.8%) belonged to OBC, 65 (36.1%) belonged

**Table 1:** Background Profile of the Study (n=180).

| Background Characteristics | No. | Percentage |
|---|---|---|
| **Age of Respondents** | | |
| <25 | 36 | 20 |
| 25-29 | 96 | 53.3 |
| ≥30 | 48 | 26.7 |
| **Education of Respondents** | | |
| Primary | 91 | 50.6 |
| Middle | 17 | 9.4 |
| high School and Above | 28 | 15.6 |
| Illiterate | 44 | 24.4 |
| Occupation of Respondents | | |
| Working | 16 | 8.9 |
| Not Working | 164 | 91.1 |
| Type of Family | | |
| Nuclear | 55 | 30.6 |
| Joint | 125 | 69.4 |
| **Religion** | | |
| Muslim | 41 | 22.8 |
| Hindu | 139 | 77.2 |
| **Caste** | | |
| Gen | 47 | 26.1 |
| OBC | 68 | 37.8 |
| SC/ST | 65 | 36.1 |
| **Age of Child** | | |
| Less Than One Year | 16 | 8.9 |
| One Year | 19 | 10.6 |
| Two Year | 27 | 15 |
| Three Year | 45 | 25 |
| Four Year | 51 | 28.3 |
| Five Year | 22 | 12.2 |
| **Sex of Child** | | |
| Male | 101 | 56.1 |
| Female | 79 | 43.9 |
| **Immunization** | | |
| Fully Immunized | 138 | 76.6 |
| Partially Immunized | 42 | 23.4 |
| **Type of House** | | |
| Pucca | 43 | 23.9 |
| Kachha | 63 | 35 |
| Semi-Pucca | 74 | 41.1 |
| **Sex of Child** | | |
| Male | 101 | 56.1 |
| Female | 79 | 43.9 |
| **Complimentary Feeding** | | |
| Yes | 138 | 76.7 |
| No | 42 | 23.3 |
| **Socioeconomic class** | | |
| Upper Class (I) | 14 | 7.8 |
| Upper Middle Class (II) | 41 | 22.8 |
| Middle Class (III) | 21 | 11.7 |
| Upper Middle Class (IV) | 21 | 11.7 |
| Lower Class (V) | 83 | 46 |
| **Total** | 180 | 100 |

to SC/ST. Among the total study subjects, children less than one year of age were 16(8.9%), children of one year of age were 19 (10.6%), children of Two year of age were 27 (15.0%), children Three year of age were 45 (25.0%), children Four year of age were 51 (28.3%), children Five year of age were 22 (12.2%). In the present study, 79 (43.9%) were female children, 101 (56.1%) were male children. In our study population, nutritional status of under-five children in relation to sociodemographic characteristics Table 2.

Nutritional status of under-five children was found to be significantly (p=0.035) associated with category of children. Nutritional status of under-five children was found to be significantly (0.025) associated immunization status of children (Figure 2).

## Discussion

In our study 20% of respondent were less than 25 years of age, 53.3% respondent was between 25 and 29, 26.7% were more than and equals to 30 years of age. In other study conducted by Murakar et al. [4] in which total 2929 mothers and their 3671 under five children were covered. Almost 80.1% women were in the age group between 20 and 29 years. The mean age of mothers was 24.25 years (± SD6.37). About 56.55% of mothers had education up-to high school.

In our study, 24.4% respondents were illiterate, 50.6% respondents were primary school, 9.4% respondents were Middle school, 15.6% respondents were high school and above.

In other study conducted by Santhakumaran et al. [5] in which out of 1048 children (4 fathers expired) 513 fathers have acquired high school and above qualification. Two hundred and twenty four of 513 children (43.7%) were malnourished. But when the father's educational status was primary (535 fathers) 311 children (58%) were malnourished. Out of 5 children with very severe malnutrition, 4 were children of fathers with poor literacy. Regarding maternal education 441 mothers have obtained high school and above qualification and the prevalence of malnutrition among these literate mothers was 44.4% (245 children out of 441). But when the mother's educational status was primary or less the prevalence of malnutrition was 56% (343 out of 611 children).

In present study male children were 56.1% and female children were 43.9%. However, study conducted by Moluguri et al. [6] in which the females (53.5%) were more compared to boys (46.5%), out of the total sample surveyed.

In other study conducted by Jain et al. [7] in this study Moderate under-nutrition was present in 16.8% children. Under-nutrition was present among 9.9% male and 24.2% female children. In our study significant association of immunization was found with education of respondent and caste in which prevalence of higher immunization status found in high school and above educated population (92.9%) and lower in middle school (76.5%). Similarly higher immunization was found in general category (93.6%) and lower in OBC (83.8%).

However, study conducted by study conducted by Moluguri et al. [6]. In this study 87.6% were completely immunized and 12.4% were partially immunized. In present study on nutritional status of under-five 33.3% were normal, 28.3% were mild malnourished, 16.7% were moderate malnourished, 12.2% were severe malnourished, 9.4% were very severely malnourished. In other study conducted by Vasudevan et al. [8] in which Proportion of moderate and severe underweight and wasting was highest in the age group of 11-23 months while proportion of moderate and severe stunting was highest in the age group of 48-59 months.

## Conclusion and Recommendations

In present study, nutritional status of under-five (According to IAP classification of malnutrition). 33.3% were normal, 28.3% were mild malnourished, 16.7% were moderate malnourished, 12.2% were severe malnourished, 9.4% were very severely malnourished. Immunization status was found to be significantly (p=0.029) associated with education of respondent. It was observed to be 26 (92.9%) children were completely immunized, whose respondent were educated from high school and above. Immunization status was found

**Table 2:** Distribution of Nutritional Status by Socio-demographic characteristics.

| Socio-demographic characteristics | Nutritional Status | | | | | p value of $\chi^2$ |
|---|---|---|---|---|---|---|
| | Normal | Mild | Moderate | Severe | Very Severe | |
| **Type of House** | | | | | | |
| Pucca | 0.407 | 0.305 | 0.153 | 0.051 | 0.085 | 0.087 |
| Kachha | 0.441 | 0.206 | 0.059 | 0.206 | 0.088 | |
| Semi-Pucca | 0.241 | 0.299 | 0.218 | 0.138 | 0.103 | |
| **Education of Respondents** | | | | | | |
| Primary | 0.297 | 0.297 | 0.198 | 0.121 | 0.088 | 0.872 |
| Middle | 0.471 | 0.235 | 0.059 | 0.118 | 0.118 | |
| High School and Above | 0.321 | 0.357 | 0.179 | 0.107 | 0.036 | |
| Illiterate | 0.364 | 0.227 | 0.136 | 0.136 | 0.136 | |
| **Sex of the Child** | | | | | | |
| Male | 0.318 | 0.29 | 0.14 | 0.14 | 0.112 | 0.573 |
| Female | 0.356 | 0.274 | 0.205 | 0.096 | 0.068 | |
| **Religion** | | | | | | |
| Hindu | 0.317 | 0.281 | 0.18 | 0.129 | 0.094 | 0.837 |
| Muslim | 0.39 | 0.293 | 0.122 | 0.098 | 0.098 | |
| **Category** | | | | | | |
| General | 0.213 | 0.34 | 0.17 | 0.17 | 0.106 | 0.035* |
| OBC | 0.294 | 0.294 | 0.191 | 0.132 | 0.088 | |
| SC/ST | 0.462 | 0.231 | 0.138 | 0.077 | 0.092 | |
| **Immunization** | | | | | | |
| Fully Immunized | 0.435 | 0.217 | 0.13 | 0.087 | 0.13 | 0.025* |
| Partially immunized | 0.318 | 0.293 | 0.172 | 0.127 | 0.089 | |
| **Complimentary Feeding** | | | | | | |
| Yes | 0.359 | 0.294 | 0.157 | 0.111 | 0.078 | 0.058 |
| No | 0.185 | 0.222 | 0.222 | 0.185 | 0.185 | |

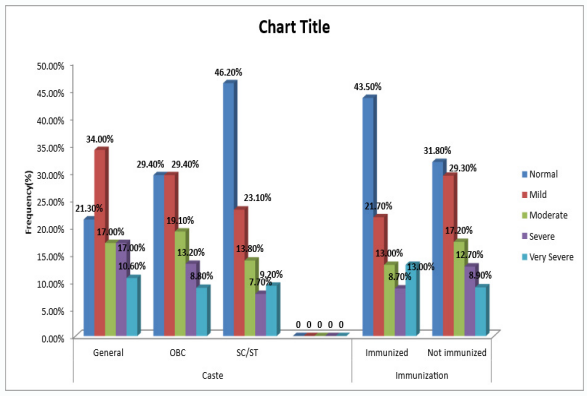


**Figure 2**: Chart title.

to be significantly (p=0.20) associated with occupation of respondent. It was observed that 11 (68.8%) children were immunized, whose respondent were working and 146 (89.0) children were immunized in not working respondent.

People can be educated on nutritional quantity of common foods. People can be educated on importance and nutritional quality of various locally available and culturally accepted low-cost foods.

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