

A Study to Assess the Nutritional Status of Under-Fives Children in Selected Rural Area at Gwalior

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INTRODUCTION:

BACKGROUND OF THE STUDY:

Food is an important and basic biological need of man. It is essential for life, growth and repair of the human body, regulation of body mechanisms and production of energy for work. The nutrition of people on a global level is of great concern today particularly in developing nations. A fair section of the population does not get enough food to eat and their diets are deficient in calories also, the children in the developing countries suffer from malnutrition (Kasthuri Sundar Rao, 2023).

Food is any substance consumed by an organism for nutritional support. Food is usually of plant, animal, or fungal origin and contains essential nutrients such as carbohydrates, fats, proteins, vitamins, or minerals. The substance is ingested by an organism and assimilated by the organism's cells to provide energy, maintain life, or stimulate growth. Different species of animals have different feeding behaviors that satisfy the needs of their metabolisms and have evolved to fill a specific ecological niche within specific geographical contexts.

Nutritional assessment in India in 2025 involves monitoring and addressing malnutrition, particularly among children and women,

through various initiatives and programs. Key efforts include the Poshan Abhiyan, which utilizes technology like Poshan Tracker for real-time monitoring. The focus remains on the first 1,000 days of a child's life, a critical period for development.

Gupta, Aakriti Pramod (June 2025) Undernourishment among adults living with HIV (ALHIV) over the age of 18 years has been estimated to be as high as 40% in India. Increased resting energy expenditure (10% in the asymptomatic phase and 20%–30% in the symptomatic phase) and metabolic demands of ALHIV predispose them to undernutrition. Undernutrition is further worsened as a consequence of reduced appetite due to side effects of medications, depression, anxiety, and oral lesions. Weight loss in ALHIV is also made worse by nutrient malabsorption, persistent diarrhea, and increased energy requirements during secondary bacterial and/or systemic opportunistic infections.

The nutritional status of children is important as it determines their health, physical growth and development, academic performance and progress in life. Under nutrition and poor health from preventable

causes disproportionately affect the well-being of millions of people in the developing world. Factors at individual, household and community level, or a combination of these factors, may contribute to poor nutrition and health status. In particular, malnutrition among women is likely to have a major impact on their own health as well as their children. More than 3.5 million women and children under age five in developing countries die each year due to the underlying cause of under nutrition.

Need for Study:

A Studying the nutritional status of children under five years old is crucial due to its direct impact on their health, development, and overall well-being. Malnutrition, in both under- and over-nutrition forms, is a significant public health concern globally, affecting millions of children and carrying long-term consequences according to a study in PLOS Global Public Health.

Swaroop Kumar Sahu, S Ganesh Kumar, B Vishnu Bhat, K C Premarajan, Sonali Sarkar, Gautam Roy (2021 Jan-Jun) Malnutrition among under-five children is a major public health problem

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in India. This is reflected by the fact that the prevalence of under-weight children in India is among the highest in the world, and is nearly double that of Sub-Saharan Africa. It is also observed that the malnutrition problem in India is a concentrated phenomenon that is, a relatively small number of states, districts, and villages account for a large share of the malnutrition burden — only 5 states and 50% of villages account for about 80% of the malnutrition burden. Each year approximately 2.3 million deaths among 6-60 months aged children in developing countries are associated with malnutrition, which is about 41% of the total deaths in this age group.

Worldwide, approximately 1.9 billion adults are overweight, while 462 million are underweight. Overweight or obese children under the age of five years are estimated to number 41 million, with 159 million stunted and 50 million wasted. Undernourished children have a higher risk of death and are more likely to contract childhood illness. They are prone to be cognitively impaired, perform worse in school, have lower earning potential, and are at a higher risk of developing non-communicable diseases later in life. The consequences of poor nutrition begin in utero and last for generations.

As per the **WHO estimates, by 2025**, the number of stunted children worldwide will reach 131 million (27 million above the expected 40% reduction in the target number of stunted children), while the prevalence of wasting will remain well above the 5% target. The majority of the global burden of childhood under-nutrition remains concentrated in low-income and lower-middle-income countries. In India, according to the National Family Health Survey 5 (NFHS-5), in 2019-2020, 32.1% of children under five years of age were found to be underweight, 19.3% were wasted, and 35.5% were stunted. As per the NFHS-5 data, the prevalence of underweight and stunting in Delhi was 21.2% and 30%, respectively. The current under-five mortality rate in India is 28/1000, and under-nutrition is one of the significant contributors to under-five mortality in India.

Statement of The Problem:

“A study to assess the nutritional status of under-fives Children in selected Rural area at Gwalior”

Objectives:

1. To assess the nutritional status of under five year of age children.
2. To find out association between demographic variables and nutritional status of under-fives children.
3. To assess the health and nutritional status of under 5 year children in the rural areas of Gwalior.

Hypothesis:

H1: - There will be a significant relationship between demographic variables and nutritional status of under-fives children.

Ho: - There will be no relationship between demographic variables and nutritional status of under-fives children.

Operational Definitions:

- **Assess-** Statistical measurement of height and weight and grading them into degree of malnutrition as per the ICMR standards, WHO standards, BMI index, etc.
- **Nutritional status-** It is operationalized as degree of malnutrition as per the ICMR standards.
- **Under 5 year of age children-** The children above 1 year 6 months to below 5 year 6 months of age.

Review of Literature:

1. Review of Literature related to Importance of nutrition for growth and development of under-fives children.

Huiling Shi, Yi Ren, Yanping Jia 2023 May, Child malnutrition is a global problem. It has attracted the attention of policymakers and politicians due to its serious effects on the nation's health and economy. Malnourished children are more susceptible to infections, which leads to higher morbidity and mortality among children from certain diseases. Reasonable dietary nutrition for children is the basis for their healthy growth. It will directly determine the physical and mental health of children in the future. In the long term, it will also affect a country's economic development and overall national strength.

According to the World Health Organization (WHO) 2023, the initiation of healthy dietary practices, commencing with breastfeeding from an early age, not only fosters optimal physical growth but also plays a crucial role in enhancing cognitive development. This cognitive development is considered a pivotal aspect in ensuring the overall well-being of an individual as they mature.

2. Review of Literature related to Incidence and prevalence of under-fives children with malnutrition.

Selvandran Rangiah 2021 Sep Malnutrition is the most severe consequence of food insecurity amongst children under the age of 5 years. Acute malnutrition can lead to morbidity, mortality and disability, as well as impaired cognitive and physical development with an increased risk of concurrent infections. Physical and mental health development is a fundamental right of a child, and their optimum level of health can be

accessed with good nutritional support. demonstrates the consequences of malnutrition under the age of 5 years.

Indiran Govender 2024 Nov Despite the ample support from the United Nations International Children's Emergency Fund (UNICEF), World Health Organization (WHO) and World Bank towards achieving nutritional freedom, we are still far from the world without malnutrition.¹⁴ The WHO report published in March 2020 revealed insufficient progress towards the World Health Assembly targets set for 2025 and the SDG set for 2030

3. Review of Literature related to Effects of malnutrition on health of children.

World Health Organization (WHO) 1 March 2024 Malnutrition, in all its forms, includes under nutrition (wasting, stunting, and underweight), inadequate vitamins or minerals, overweight, obesity, and resulting diet-related non-communicable diseases. In 2022, 2.5 billion adults were overweight, including 890 million who were living with obesity, while 390 million were underweight. Globally in 2022, 149 million children under 5 were estimated to be stunted (too short for age), 45 million were estimated to be wasted (too thin for height), and 37 million were overweight or living with obesity.

Bedir Tekinerdogan September 2024 The WHO has declared healthy aging a priority of its work on aging between 2016 and 2030 and has come up with a global strategy and action plan related to aging and health from 2016 to 2030. Malnutrition is a critical and global concern that requires continuous intervention strategy.

4. Review of Literature related to Factors related to under-fives malnutrition.

The World Health Organization 2024 Jan defines malnutrition as deficiencies, excesses or imbalances in a person's intake of energy and/or nutrients.⁴ It covers 2 broad categories of conditions: under nutrition (which includes stunting, wasting, underweight, and micronutrient deficiencies), and other overweight, obesity, and diet-related non-communicable diseases (NCD) like heart disease, stroke, diabetes, and cancer.

William Wilberforce Amoah & Atinyagrika Bernard Adugbire 2024 Jan Malnutrition or micronutrient deficiencies continue to be a major health burden in developing countries. It is globally the most important risk factor for morbidity and mortality, with millions of children under 5 years of age affected. Apart from wasting, stunting, marasmus, and kwashiorkor, deficiencies in iron, iodine, vitamin

A, and zinc are also manifestations of malnutrition in developing countries.

Research Methodology:

Research methodology includes research approach, research design, setting, population, sample, and criteria for sample selection & method of sample selection, description of tool, validity, reliability, and procedure for data collection & plan for data analysis.

Setting of Study - According to Polit and Beck (2018) setting is the physical location and condition in which data collection takes place in a study. The present study was conducted in Rairu Village, District Gwalior (M.P.)

Population- Polit and Beck (2022) describe population as an entire set of the individuals or object having some common characteristics, and are of interest to the researcher. The population of the present study includes children under-fives years (0-5 years) who are residing in Rairu Village.

Sampling—According to **Chowdhary Sunanda S. Ray (2021)** describe “sampling as a process by which a sample, which is the representative unit of the population under the research study, is selected, who represent the entire target population.”

Sample- According to **Chowdhary Sunanda S. Ray (2024)** states that, “sample is a portion or a part or a subset of population which is selected from the population that is under the research study & which possesses similar characteristics or qualities or attributes of the entire population.

The sample for the present study comprised of children under-fives years of age, living in Rairu village, District Gwalior.

Sample Size—Sample size Consist all children of under-fives year of age living in Rairu village, Gwalior.

Criteria for Sample Selection.

Inclusion Criteria-

1. Children under 5 years 6 month of age.
2. Parents willing to participate in the study.
3. Available during data collection period.

Exclusion criteria-

1. Children who were suffered from congenital abnormalities or any chronic and systemic disorders.

SAMPLING TECHNIQUE – Convenient sampling technique was used to select sample for the study. The study was conducted in Rairu village, Gwalior. All the children who fulfill the inclusion criteria were selected by using convenient sampling technique.

Data Collection Tools and Techniques:

According to Chowdhary Sunanda S. Ray (2025) states that “Data collection instrument or tool is a written device or technique that is either prepared or obtained by the researcher which the researcher usage to gather data such as questionnaire, observation schedule. For the present study aimed at assessing the nutritional status of under-fives children, the following data collection instrument is constructed in order to obtain data.

Data Analysis and Interpretation:

A descriptive design was used to collect the data from 149 children of under 5 year of age in selected village of urban Gwalior selected by using random sampling

to find out nutritional status of under 5 year of age children. Collected data were coded, tabulated and analyzed under the following headings based on objectives of the study.

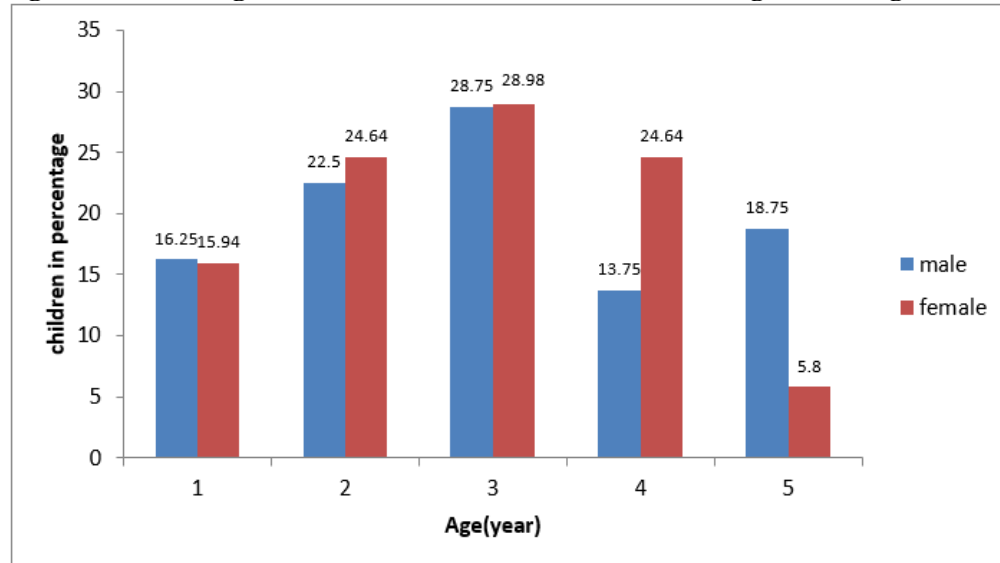
Section 1-Distribution of children according to demographic variables

Section 2- Comparison of nutritional status of children with demographic variables

Section 3 - comparison of nutritional status of children with various standards

Section 4- Association between nutritional status (Degree of malnutrition) of children with their demographic variable.

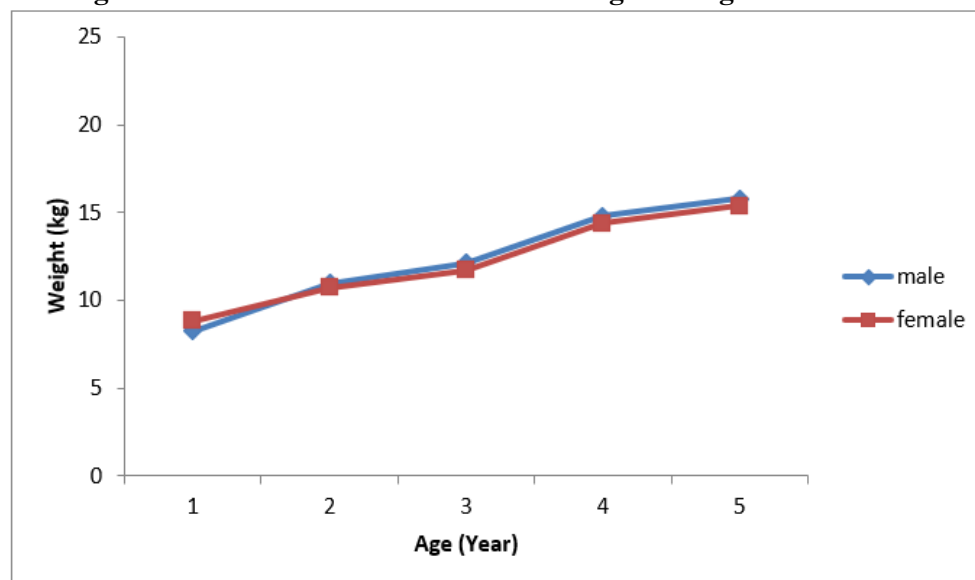
Figure 1-Percentage wise distribution of children according to their age and sex



Percentage wise distribution of children according to age and sex shows that highest percentage of boys and girls (28.75% & 28.98%) in the age group of 3 years respective and more or less similar.

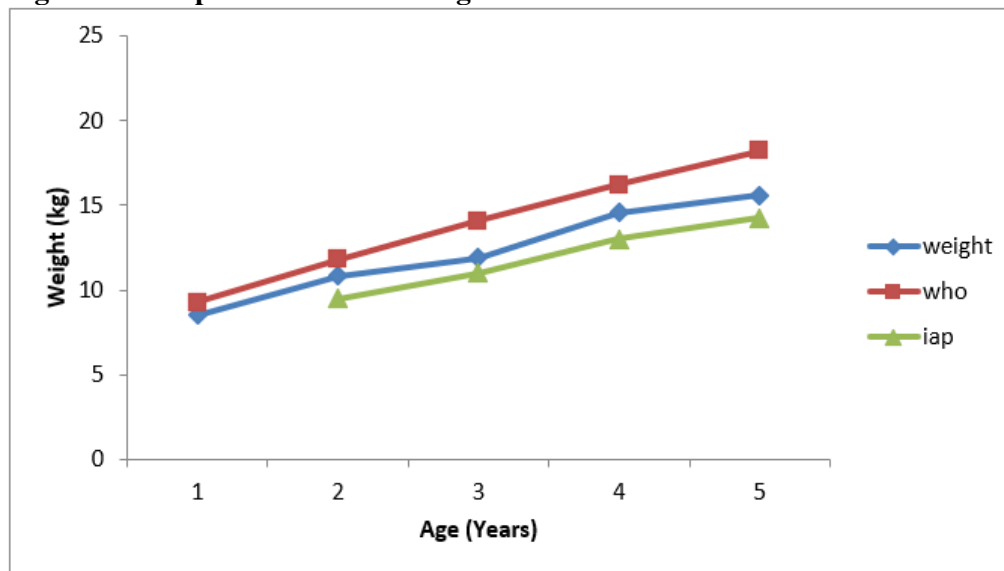
However female children more in the age group of 4 years (24.64%) that compared to boys (13.75%). Whereas the male children higher (18.75%) in the age group of 5 year that compared to female children were only (5.8%)

Figure 2 – Age and sex wise distribution of mean weight for age for under-fives children.



Age & sex wise distribution of children according to their mean weight shows that as age increases weight also increases for both male and female children. Comparison between male & female children weight shows that female children weight was higher at 1 year of age. However, it is higher for male children at 3, 4 and 5 year of age but the difference is very less.

Figure 3- Comparison of Mean weight of children with WHO & IAP standard.



Comparison of Mean of weight of children with WHO & IAP standard shows that children weight was higher than IAP standard and lower than WHO standard for all age groups.

Table 1- Association between nutritional status (Degree of malnutrition) of children with their demographic variable.

Variables	χ^2	Level of significance
Age	20.07	NS
Sex	4.96	NS
Birth Order	8.63	NS
Type of family	2.97	NS

Discussion:

The purpose of the study was to assess the Nutritional status of under-fives children in selected village of urban Gwalior. Many studies have been done to assess the Knowledge of mother's regarding malnutrition with only a limited number of studies especially pertaining assessment of nutritional status of under-fives children.

- Description of the socio-demographic variables of under-fives children.
- Assessment of nutritional status of under-fives children regarding malnutrition.

Summary:

The study was proposed to explore and describe the nutritional status of under-fives children in selected village of urban, Gwalior.

The theoretical framework adopted for the study is based on Roger's conceptual system (1970). A descriptive research approach was adopted for the study. The population consisted of 149 under-fives children in selected village of urban Gwalior. The tool was developed and adopted after reviewing the

relevant literature. Data has been collected by demographic questionnaire. The collected data was calculated and analyzed using both descriptive and inferential statistics based on the objectives of the study. The study tested and rejected the hypothesis that there is no significant relationship between demographic variable and degree of malnutrition. The data collected were statistically analyzed and represented as tables and graphs in the previous chapter.

Conclusions:

This study was conducted to determine nutritional status of under-fives children in selected village of urban Gwalior, Madhya Pradesh, where a descriptive survey study was conducted in this research. The main purpose of research was to identify nutritional status of under-fives children. The result of the study revealed that the majority of the children under five year of age were normal. The data collection was achieved by taking height and weight of children.

It found that among the children of under-fives, 73.15% children were normal, 19.47% had 1⁰

malnutrition, 6.04% had 2⁰ malnutrition, 0.67% Children had 3⁰ malnutrition & 0.67% had 4⁰ malnutrition.

The variable of this study were socio demographic factors include sex, age, birth order, type of family, actual weight and actual weight.

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