Prevalence and Factors Affecting Anaemia Among Children Under Five in India: Evidence from NFHS-5

Vaishnavi Anilkumar

Abstract: *Anaemia remains a serious public health challenge in India, particularly among children under five years of age. Using nationally representative data from the National Family Health Survey (NFHS-5, 2019-2021), this study examines the prevalence and sociodemographic determinants of anaemia among children aged 6-59 months. The analysis is based on a weighted sample of 201, 464 children. Descriptive statistics, chi-square tests, and multivariable logistic regression models were employed. The overall prevalence of anaemia was 60.8%, with higher risk observed among children aged 12-23 months and those residing in eastern India. Household wealth, maternal education, and nutritional practices were significant predictors. The findings highlight the need for age-specific and regionally targeted nutritional interventions to reduce childhood anaemia in India.*

Keywords: Anaemia; Under-five children; NFHS-5; India; Logistic regression

1. Introduction

Anaemia is one of the most widespread nutritional deficiencies globally and remains a major public health concern in low- and middle-income countries. Children under five years of age are particularly vulnerable due to rapid growth, increased nutritional requirements, and frequent exposure to infectious diseases. Iron deficiency is recognised as the most common cause of childhood anaemia, although deficiencies of other micronutrients, recurrent infections, and inadequate access to healthcare services also play important roles (Sarna et al., 2020; Natekar et al., 2022).

In India, successive rounds of the National Family Health Survey (NFHS) have documented persistently high levels of anaemia among children, despite the implementation of multiple nutrition-specific and nutrition-sensitive programmes. Anaemia during early childhood has long-term consequences, including impaired cognitive development, reduced immunity, increased morbidity, and lower educational and economic outcomes later in life. Identifying the factors associated with childhood anaemia is therefore essential for effective policy formulation.

Using data from NFHS-5 (2019-2021), this study aims to estimate the prevalence of anaemia among children aged 6-59 months across different sociodemographic groups and regions of India, and to identify the key factors associated with anaemia using multivariable regression techniques.

2. Data and Methods

2.1 Data Source

The study uses secondary data from the National Family Health Survey (NFHS-5), conducted during 2019-2021. NFHS-5 is a nationally representative household survey covering all states and union territories of India.

2.2 Study Sample

The analytical sample consists of 201, 464 children aged 6-59 months with valid haemoglobin measurements. Haemoglobin concentration was measured using a portable HemoCue analyser. Children were classified as anaemic according to World Health Organization cut-off values.

2.3 Variables

The outcome variable is childhood anaemia status (anaemic vs. non-anaemic). Explanatory variables include child age, sex, place of residence, region, caste, household wealth index, mother's education, maternal body mass index (BMI), iron supplementation, consumption of fortified baby food, and mosquito bed net use.

2.4 Statistical Analysis

Descriptive statistics were used to summarise sample characteristics. Chi-square tests were applied to examine bivariate associations. Multivariable logistic regression analysis was employed to estimate adjusted odds ratios for factors associated with anaemia. All analyses were conducted using SPSS, accounting for survey weights.
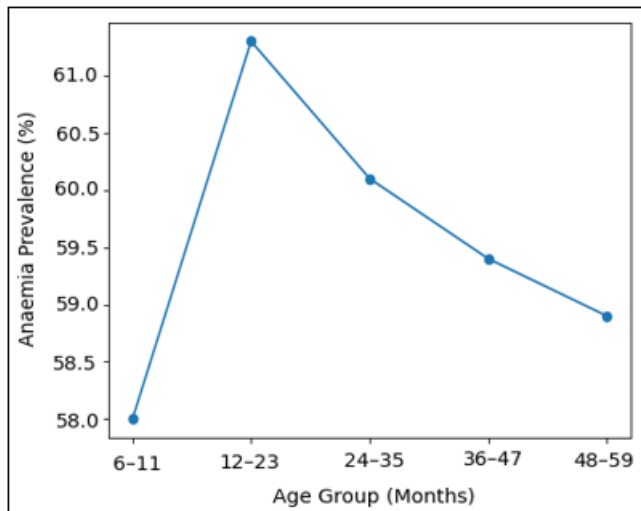
3. Results

3.1 Sample Characteristics

The sample is evenly distributed across age groups, with a slightly higher proportion of children aged 48-59 months. More than three-fourths of the children reside in rural areas. Over half of the mothers have attained secondary education, while approximately one-fourth of the children belong to the poorest wealth quintile.

Table 1: Distribution of Children by Age Group

Age Group (Months)	Percentage (%)
6-11	10.7
12-23	21.6
24-35	22.0
36-47	22.3
48-59	23.4

Figure 1: Anaemia Prevalence by Age Group

4. Discussion

The findings demonstrate that anaemia remains highly prevalent among under-five children in India. The particularly high prevalence among children aged 12-23 months highlights the vulnerability associated with the transition to complementary feeding. Regional disparities, especially the elevated burden in eastern India, may reflect socioeconomic disadvantage and uneven implementation of nutrition programmes.

The observed higher odds of anaemia among children from the 'poorer' wealth group compared to the 'poorest' may reflect differences in dietary patterns, intra-household food allocation, or differential access to public nutrition schemes. Similar patterns have been reported in previous NFHS-based studies.

5. Conclusion and Policy Implications

Anaemia among children under five years of age continues to be a major public health challenge in India. Strengthening iron and folic acid supplementation, promoting fortified complementary foods, improving maternal nutrition, and enhancing female education are critical strategies. Region-specific interventions targeting the second year of life are likely to yield substantial reductions in childhood anaemia.

References

[1] Ghosh, P. (2023). Determinants and transition of anaemia among under-five children from different social groups in India. National Library of Medicine.

[2] Natekar, P., Deshmukh, C., Limaye, D., Ramanathan, V., & Pawar, A. (2022). A micro review of nutritional public health challenges: Iron deficiency anaemia in India. Clinical Epidemiology and Global Health.

[3] Sarna, A., et al. (2020). Characterisation of the type of anaemia prevalent among children and adolescents in India. The Lancet Child & Adolescent Health.

Volume 14 Issue 12, December 2025
Fully Refereed | Open Access | Double Blind Peer Reviewed Journal
www.ijsr.net

Paper ID: SR251218214809   DOI: https://dx.doi.org/10.21275/SR251218214809   1607