Print ISSN: 0976-2876 Online ISSN: 2250-0138

Available online at: http://www.ijsr.in

INDIAN JOURNAL OF SCIENTIFIC RESEARCH

DOI:10.32606/IJSR.V16.I1.00023

Received: 14-03-2025 Accepted: 18-06-2025 Publication: 31-08-2025

Indian J.Sci.Res. 16 (1): 147-150, 2025 Review Article

CURRENT SCENARIO OF ANEMIA IN FEMALE OF NORTH BIHAR: A REVIEW

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ABSTRACT

Anemia is a deficiency disease affecting human population worldwide. Its prevalence in developing countries is more due to higher population and lower socioeconomic conditions. According to the guidelines of World Health Organization, when the hemoglobin content in blood is less than 11g/dL, this physiological condition is referred to as anemia. The India is also one of the developing countries, about 57% of women of 15-49 years of age and 67.1% of children of the age of 6-59 months in India are facing hemoglobin deficiency. The cases of anemia in the females of the North Bihar region are about 64% which is more than the National- average 57%. Even after several control measures, and drives implemented by the central and the state governments in North Bihar Region such as, Anemia Mukta Bharat Abhiyan, Mid-Day-Meal Scheme, Mission Saksham Anganwadi and Poshan 2.0 etc., the present scenario is still severe and critical for our society. We should take massive awareness program, fix and remove the causes which reduce the effectiveness of the ongoing control measure programs.

KEYWORDS: Anemia, North Bihar, Socioeconomic, Deficiency Disease, Female

Anemia is defined as low level of hemoglobin in blood, in case of anemia either RBC count or its oxygen carrying capacity is low, both the parameters mentioned above depend upon age, sex, pregnancy, altitude, nutrition and feeding habit of the individuals (Turner *et al.*, 2023). Generally, the deficiency of certain micronutrients in the diet, which are essential for the formation of RBCs, results in anemia, these are Vitamin A (retinoic acid), Vitamin C (ascorbic acid), Vitamin B2 (riboflavin), Vitamin B9 (folic acid) and B12 (cobalamin) (Dreyfuss *et al.*, 2000; Stevens *et al.*, 2013). Anemia is a global health issue due to dietary deficiency of iron (Turawa *et al.*, 2021). The anemia due to iron deficiency affects the mental and physical growth of children and reduces the efficiency of work in adults, as stated by World Health Organization (Turner *et al.*, 2023; Turawa *et al.*, 2021). The major symptoms of anemia commonly include weakness, tiredness, short of breath, headache and lower ability to exercise, other symptoms like confusion, lack of consciousness and increase in thirst are seen in acute anemia (Janz *et al.*, 2013). The anemia is also classified based on the size of the red blood cells, the size is measured in mean corpuscular volume (MCV), they are: - microcytic, macrocytic and normocytic anemia. When MCV is <80 fl (femtolitre), it is called microcytic anemia and occurs due to iron deficiency or chronic diseases, macrocytic or megaloblastic anemia, it occurs due to deficiency of B12, folic acid or both and MCV is >100 while normocytic anemia is the case when MCV is between 80-100fl, here size of RBCs is normal but the amount of hemoglobin decreases (Long & Koyfman, 2018).

The guidelines given by the World Health Organization (WHO) for determining anemia in pregnant female are – Hemoglobin less than 11 g/dL is anemic, in case of mild, moderate and severe anemia the amount of hemoglobin is 10-10.9g/dL, 7-9.9g/dL and less than 7g/dL respectively. The global scenario of anemia in the females states that 30.7% women, 35.5% pregnant women, 30.5% non-pregnant women of 15-49 years of age group and 39.8% children of 6-59 months to are anemic (World Health Organization, 2024). In case of India, 57% of women of 15-49 years of age, 59.1% adolescent girls and 67.1% children of 6-59 months are anemic as per the survey report of National Family Health Survey conducted by Ministry of Health and Family Welfare of the Union Government of India (International Institute for Population Sciences [IIPS] & ICF, 2021). Folic acid and iron tablets are distributed to the target pregnant women at Primary Health Center (PHC) and Anganwadi Kendra, to combat the current situation of anemia, but the situation is not improving because they either do not consume the given tablets or do not revisit for successive does; it is due to illiteracy and lack of proper awareness. It results into persistent anemia in pregnant mothers which causes impaired department of babies, birth of anemic babies, premature birth and death of mother or baby or both at the time of birth.

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CURRENT SCENARIOS OF ANEMIA IN NORTH BIHAR

Prevalence

As the facts highlighted by the recent studies, up to 69% of children below 5 years of age and 64% women, both pregnant and non-pregnant of the age group 15-49 years are anemic, as per the report of NFHS-5(2019-21) (IIPS & ICF, 2021). It is higher than the previous report of NFHS- 4 (2015-16) (International Institute for Population Sciences (IIPS) & ICF, 2017), according to which 60.3% of females and 63.5% of children of the same age group were anemic. (Table 1)

Regional Variation

Bihar is divided into North and South Bihar by the Ganga River. North Bihar includes all districts north of the Ganga, they are Saran, Siwan, Gopalganj, East and West Champaran, Sheohar, Sitamarhi, Muzaffarpur, Vaishali, Madhubani, Darbhanga, Samastipur, Begusarai, Katihar, Khagaria, Saharsa, Supaul, Madhepura, Araria, Purnea and Kishanganj (Development Commissioner, Micro, Small & Medium Enterprises [DCMSME], 2017). There is much variation in the cases of anemia in the different parts of Bihar, the rate of anemia is found higher in North Bihar districts such as Darbhanga, Koshi, and Bhagalpur. The children of Darbhanga are more affected by anemia which is about 65% (Ajmer, 2020). The prevalence of anemia in pregnant women is more critical, as it is obvious from the study of Katihar, a rural north Bihar district, where case of anemia is as high as 81.6%. The severity of anemia was -42% mild, 38% moderate and nearly 1% severe anemia (Pandey, 2023).

Vulnerable Group

The children particularly female ones, mothers and women with lower educational background and from poor socioeconomic status are at the greater risk, such mothers have higher birth rate and little gap between successive births. The adolescent girls are also victims of anemia. The females and children of schedule castes and schedule tribes are also sufferer of anemia (Ajmer, 2020; Kumar, 1999).

Causes

The prime of anemia is nutritional deficiency of iron and some other dietary deficiency like vitamin A, C, B12, folic acid and riboflavin (Chaudhary *et al.*, 2022; Daru *et al.*, 2018). Along with these, some chronic and other diseases like malaria, tuberculosis, worm infection etc. are also responsible for anemia in the North Bihar region. The occurrence is also intensified due to lack of proper awareness, lower education and poverty which deprive the vulnerable people to have good nutrition and proper health care facilities (Chaudhary *et al.*, 2022).

Impacts

Anemia during pregnancy causes poor development of the embryo and creates a difficult condition at the time of birth, as it causes direct or indirect mother's mortality, which is about 20% in India, with Bihar contributing a significant proportion (NFSH-5) (IIPS & ICF, 2021). The common complications in pregnant anemic women include premature birth, lower weight of babies at birth, higher neonatal and perinatal deaths (Daru *et al.*, 2018; (Haas & Brownlie, 2001). The babies of anemic mothers born with lower Hb. and hence higher risk of anemia (Finkelstein *et al.*, 2020). It also causes weakness impaired physical and mental growth in children and hence stunt and retarded adults with lower productivity (WHO). It also increases susceptibility to infections.

Table 1: Anemia Prevalence in North Bihar Region of India

Group	Prevalence %	Notes
Women	~63	Higher in rural and marginal areas
Pregnant women	~58-80	Coverage for intervention varies
Children below 5 years	~69	Higher in north Bihar districts

DISCUSSION

The review shows the severity of anemia in the predominantly affected group of society. The state and the union government together started various programs to minimize anemia, such as, Mid-Day Meal Program in schools up to class 8th to provide nutritional requirements to the growing children and hence minimizing anemia. Other programs like Pradhan Mantri Matru Vandan Yojna, Anemia Mukt Bharat Abhiyan, Mission Saksham Anganwadi and Poshan2.0 are also contributing to the development of the human capital of our country, to address the challenges of malnutrition, to promote nutrition awareness and good eating habits for well-being. Despite, all the above programs the problem is a little maximizing instead of minimizing.

CONCLUSION

Anemia remains a critical health issue in North Bihar with persistently high rate among women and children. It is caused by socioeconomic disadvantages, malnutrition, poverty, lack of awareness among rural

populations and ignorance among the literate urban population as well, limited health care facilities and lack of proper nutrition. This leads to serious health issue, poor development of newborn babies, and socioeconomic consequences, perpetuating the causes which reduce the effectiveness of the ongoing control measure programs.

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