

Depression and anemia: Missing link



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Anemia has been a significant public health concern in India, especially among women and children.¹ The National Family Health Survey (NFHS) is one of the primary sources of health-related data in India. The NFHS-4, conducted in 2015–2016, reported that around 53% of women aged 15–49 in India were anemic.² The symptoms of depression, a serious psychiatric condition, include low mood, energy loss, low self-esteem, and both physical and psychological sluggishness. According to the 2019 Global Burden of Disease Study, depression is one of the most incapacitating mental diseases.³ Depression and related psychological illnesses and physical discomfort have an impact on the health and quality of life. Although seems disconnected, there are some potential molecular links between depression and anemia. Both depression and anemia are associated with inflammation.^{4,5} Chronic inflammation has the potential to impact the generation and operation of red blood cells in anemia, as well as play a role in neuroinflammation that affects neurotransmitter systems linked to depression, such as serotonin and dopamine pathways.⁶ Depression is often associated with irregularities in neurotransmitters such as serotonin, dopamine, and norepinephrine, which not only influence mood but also have implications for erythropoiesis and iron metabolism.^{7,8} The dysregulation of the HPA axis in depression can result in heightened cortisol levels and changes in stress response, affecting erythropoiesis and iron metabolism, thus contributing to anemia.⁹ Nutritional deficiencies, particularly in Vitamins B12 and folate, can also lead to both anemia and mood disturbances, including symptoms of depression, as these nutrients are crucial for proper erythropoiesis and neurotransmitter synthesis.¹⁰ We, however, need to note that not all cases of depression or anemia are directly linked in every individual. The relationship between these conditions can be complex and multifactorial, influenced by various genetic, environmental, and physiological factors. What is more important is that there are real possibilities of a potential cross-talk between the two. Managing anemia in women is therefore of prime importance both for health issues as well as for mood and psychological well-being.

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Ruby Dhar¹, Arun Kumar², Subhradip Karmakar³

¹Scientist, Room 3020, ³Additional Professor, Department of Biochemistry, All India Institute of Medical Sciences, New Delhi, ²Professor, Department of Biochemistry, Narayan Medical College, Gopal Narayan Singh University, Sasaram, Bihar, India

Address for Correspondence:

Dr. Subhradip Karmakar, Additional Professor, Department of Biochemistry, All India Institute of Medical Sciences, New Delhi, India. **Mobile:** +91-9999612564.

E-mail: subhradipaimis@gmail.com

Dr. Arun Kumar, Professor, Department of Biochemistry, Narayan Medical College, Gopal Narayan Singh University, Sasaram, Bihar, India. **Mobile:** +91-7584089886.

E-mail: profdrarunk@gnsu.ac.in

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RD, AK and SK- Contributed equally toward scripting of this editorial.

Work attributed to:

Department of Biochemistry, All India Institute of Medical Sciences, New Delhi, India and Department of Biochemistry, Narayan Medical College, Gopal Narayan Singh University, Sasaram, Bihar, India.

Orcid ID:

Dr. Ruby Dhar - <https://orcid.org/0000-0003-3600-6554>

Dr. Arun Kumar - <https://orcid.org/0000-0002-8800-0296>

Dr. Subhradip Karmakar - <https://orcid.org/0000-0002-4757-8729>

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