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The silent epidemic: Iron-deficiency anemia and global health.

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Introduction

Iron-deficiency anemia (IDA) is the most common nutritional disorder in the world, affecting an estimated two billion people. Despite its prevalence, IDA often goes unnoticed—earning its reputation as a "silent epidemic." It disproportionately impacts women, children, and individuals in low- and middle-income countries, undermining physical health, cognitive development, and economic productivity. As global health systems strive to combat infectious diseases and chronic conditions, IDA remains a persistent and under-addressed challenge [1].

Aims to reduce anemia by 50% in women of reproductive age by 2025. Programs in countries like India provide iron supplements and nutrition education. Iron supplementation and deworming in schools improve attendance and performance. Raising awareness about anemia and promoting dietary diversity. Iron-deficiency anemia occurs when the body lacks sufficient iron to produce hemoglobin, the protein in red blood cells responsible for transporting oxygen. Without adequate hemoglobin, tissues and organs receive less oxygen, leading to fatigue, weakness, and impaired function. The condition develops gradually and may remain asymptomatic in early stages. In children, IDA can impair growth, learning, and behavior. In pregnant women, it increases the risk of preterm birth, low birth weight, and maternal mortality [2].

Despite these initiatives, progress has been slow, and anemia remains a stubborn public health challenge. Breeding crops like iron-rich beans and pearl millet to improve dietary iron intake. Portable devices for rapid anemia screening in remote areas. Using mobile apps and community health workers to improve adherence and education. Aligning anemia reduction with broader goals in maternal and child health, education, and poverty alleviation. Collaboration between governments, NGOs, and international agencies is essential to scale these innovations. IDA is a global health concern, but its burden is unevenly distributed: Low- and middle-income countries bear the brunt, with high prevalence in South Asia, Sub-Saharan Africa, and parts of Latin America. Women of reproductive age are particularly vulnerable due to menstruation, pregnancy, and lactation. Children under five face developmental risks due to rapid growth and inadequate dietary intake. Adolescents experience increased iron demands during puberty, often unmet due to poor nutrition [3].

According to the World Health Organization (WHO), anemia affects 42% of children under five and 40% of pregnant women globally. In India alone, over 50% of women and children are anemic. Iron deficiency can result from several factors: Diets low in iron-rich foods such as meat, legumes, and leafy greens. Conditions like celiac disease or Helicobacter pylori infection can impair iron absorption. Pregnancy, growth spurts, and physical exertion increase iron requirements. Menstruation, gastrointestinal bleeding, or parasitic infections like hookworm contribute to iron loss [4].

Screening is especially important in high-risk populations. However, limited access to diagnostic tools in resource-poor settings often delays detection and treatment. Iron is essential for brain development. Deficiency in early life can lead to irreversible cognitive deficits. Adults with IDA experience fatigue and decreased productivity, affecting economic output. Anemic children perform poorly in school, perpetuating cycles of poverty and inequality [5].

Conclusion

IDA contributes to complications during childbirth and poor neonatal outcomes. These ripple effects

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make IDA not just a medical issue but a developmental and economic concern. Managing IDA involves addressing both the deficiency and its underlying causes: Oral iron tablets are the first line of treatment. Intravenous iron may be used in severe cases or when absorption is impaired. Encouraging consumption of iron-rich foods and enhancers like vitamin C, while reducing inhibitors like tea and coffee. Adding iron to staple foods such as flour, rice, and salt has proven effective in population-wide interventions. Treating parasitic infections and managing chronic diseases that contribute to iron loss. Adherence to treatment can be challenging due to side effects like gastrointestinal discomfort, cultural beliefs, and lack of awareness.

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