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Beyond nutrition: rethinking iron deficiency anemia in children

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Abstract

Iron deficiency anemia (IDA) in children is often narrowly viewed through the lens of poor dietary intake, but emerging evidence reveals a complex web of hidden risk factors that demand a broader clinical perspective. Rethinking IDA means challenging the conventional paradigms, discovering the silent drivers, and highlighting the necessity of multifactorial screening, and focus oriented intervention strategies that go beyond supplementation.

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Introduction

In the bustling clinics of Dhaka, the remote health posts of Uganda, and the densely packed slums of Mumbai, the silent epidemic named IDA continues to rob millions of children of their futures. IDA is the world's most widespread nutritional disorder- yet remains shockingly under-addressed in the developing countries. The cost? An entire generation held back before it ever takes its first step. Here is an opinion regarding the most overlooked aspect of IDA.

Methodology

A narrative review approach was used to explore the multifactorial dimensions of iron deficiency anemia (IDA) in children and adolescents. Relevant publications up to September 20, 2025 were identified through searches in PubMed, Medline, Web of Science, ScienceDirect, Scopus, and Google Scholar. Search terms included combinations of *iron deficiency anemia, children, adolescents, nutritional deficiencies, parasitic infestations, scabies, pediculosis,* and *hygiene.*

Priority was given to studies published between 2018 and 2025, with earlier landmark papers and WHO reports included where relevant. The review focused on evidence of prevalence, risk factors, interventions, and the associations between IDA, infestations, and hygiene. This review is not exhaustive, but it brings together key evidence to highlight the often-overlooked dimensions of IDA beyond nutrition.

The unseen facts about adolescents

The global burden of nutritional deficiencies among children has declined since the last decade of the 20th century; yet this is a substantial concern for the developing countries like Asia and Africa.[1] While the impact of IDA on children under five often dominates the conversation, the equally vital adolescents, who represents a crucial stage of development defined by intense physical, mental, and emotional growth, rarely receives the attention it deserves.[2] These lower IQ, poor school performance in the adolescents represent futures dimmed before they've had a chance to shine.

Iron and infestations: a lost link

The potential relationship between IDA and common infestations in the developing countries like intestinal parasite, scabies or pediculosis is a matter of urgent concern.[3,4] In Bangladesh, 31.7% of children are affected by helminthiasis and 34% by scabies; figures that reflect more than just statistics rather highlight a serious public health crisis.[5,6] In today's knowledge-based economy, ignoring this information isn't merely a matter of public health, it carries serious economic consequences.

Why are we still struggling?

Despite decades of research and interventions, progress has been sluggish in the core regions of underdeveloped countries. Women of reproductive age in the WHO African and South-East Asia regions

collectively represent over 60% of the global anaemia burden (Figure 1). These undernourished mothers frequently experience premature births, a trend reflected in the global statistic of WHO (2019) that 39.8% of children aged 6 to 59 months were affected by anaemia[7]

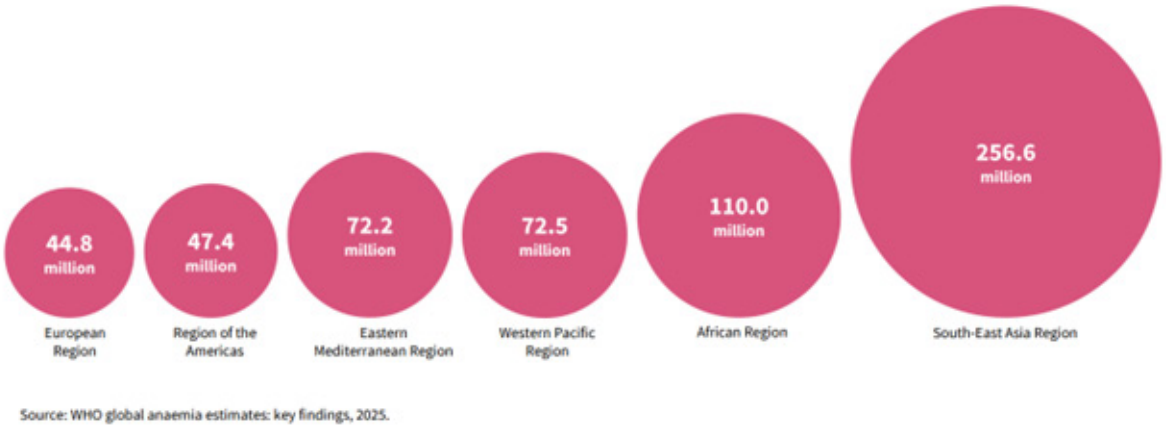

Figure 1 Number of women of reproductive age (15-49 years) with anaemia in 2023, by WHO region.

In the developing countries, food fortification efforts being tried with great enthusiasm, but often falter due to poor coverage or inadequate adherence. Nevertheless, a mass population covering pubertal age is often ignored which continues as anaemia in the reproductive age. While the COVID-19 pandemic spotlighted hygiene like never before, the ongoing epidemic of skin and intestinal infestations remains largely underscored. Yet, simple hygiene and mass education could be powerful tools to battle these infestations and in turn, reduce the burden of IDA. Let's take the hygiene momentum beyond the pandemic and into the daily fight for our children's health.

A call to action

We must accelerate the proactive preventive pathways as follows-

- **Universal screening** for anemia in early childhood and adolescents.
- **Universal screening** for infestations among underprivileged community.
- **Fortification of staple foods** focusing the core nutritional gaps.
- **Community-based awareness programs** on personal hygiene.
- **Context-sensitive preventive programs** against intestinal and skin infestations.

Above all, we need a holistic approach involving local government, non-govt. foreign organizations, and sustained investment to mitigate this burden of IDA.

Conclusion

Iron matters for the child who struggles to concentrate in class, for the mother who watches her child failing to thrive, and for the nation that dreams to pursue a bright future. Rethinking IDA means broadening our lens to include the hidden risk factors. If we continue to treat IDA as merely a nutritional hiccup, we risk masking the true burden. It's time to confront the challenges, and rethink what it truly means to care for our children's wellbeing.

Acknowledgments

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