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India's Dual Burden of Overweight/Obesity and Anemia: A Viewpoint on Trends, Determinants, and Policy Implications

View Point

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Abstract

India is facing a unique public health crisis characterized by the simultaneous prevalence of overweight/obesity and anemia, especially among women, children, and adolescents. This dual burden of malnutrition poses significant challenges to health systems, as it affects both communicable and non-communicable diseases. The National Family Health Survey (NFHS), National Health Profile (NHP), and National Institute of Nutrition (NIN) reports indicate that while overweight and obesity rates have risen, anemia remains widespread. This viewpoint explores the trends, gender and age-wise comparisons, and underlying determinants of these two conditions. It also discusses government interventions such as Anemia Mukt Bharat (AMB) and POSHAN Abhiyaan. Finally, the paper offers recommendations focused on integrated health and nutrition strategies, multisectoral coordination, and community-based interventions to address this dual burden effectively.

Keywords: Obesity; Anemia; India; Public Health; Malnutrition

Introduction

India is undergoing a complex nutrition transition, shifting from undernutrition to a dual burden of overnutrition and micronutrient deficiencies. This dual burden manifests as rising obesity alongside persistently high anemia rates, especially among women of reproductive age, adolescents, and children. The co-occurrence of these conditions exacerbates both communicable and non-communicable disease burdens. This viewpoint article examines the magnitude, determinants, and policy response to the dual burden of obesity and anemia in India.

Magnitude and Trends

Determinants of the Dual Burden

Dietary Transition: India's nutritional landscape is characterized by a shift towards calorie-dense, nutrient-poor diets. A decrease in consumption of iron-rich foods—such as green leafy vegetables, legumes, and animal sources—alongside increased intake of processed and fried foods has contributed to both obesity and iron-deficiency anemia (Misra et al., 2019) [1].

Physical Inactivity

Rapid urbanization and sedentary lifestyles, particularly among youth and working adults, have led to a significant decrease in physical activity, exacerbating overweight and obesity rates.

Iron Metabolism and Obesity-Related Inflammation

Recent studies emphasize that obesity induces chronic low-grade inflammation, impairing iron metabolism through the hepcidin pathway. Hepcidin, produced in response to inflammation, reduces dietary iron absorption and impairs iron release from stores, leading to functional iron deficiency despite adequate intake (Cepeda-Lopez et al., 2019; Zhao et al., 2019; Qin et al., 2023) [2-4].

Gender and Socioeconomic Inequities

Women and adolescent girls in lower socioeconomic groups face

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Table 1: Trends in Overweight/Obesity and Anemia in India (Based on NFHS Surveys)

Population Group	NFHS-3 (2005–06)	NFHS-4 (2015–16)	NFHS-5 (2019–21)	Trend
Women (15–49 years) overweight/obese	13.00%	20.60%	24.00%	↑
Men (15–49 years) overweight/obese	9.30%	18.90%	22.90%	↑
Women (15–49 years) with anaemia	55.30%	53.10%	57.00%	↑
Men (15–49 years) with anaemia	NA	22.70%	25.00%	↑
Children (6–59 months) with anaemia	69.50%	58.60%	67.10%	↑
Adolescent girls (15–19 years) with anaemia	NA	54.10%	59.10%	↑
Adolescent boys (15–19 years) with anaemia	NA	29.20%	31.10%	↑

Source: NFHS-3, NFHS-4, NFHS-5

greater risks due to gender-based dietary restrictions, menstruation, early pregnancies, and poor healthcare access. Boys, though less affected, also show a rising anemia prevalence.

Scientific Evidence on the Obesity-Anemia Link

Emerging evidence supports a bidirectional link between obesity and anemia. Miao et al. (2022) [5] reported that overweight individuals are more likely to consume nutrient-deficient foods, displacing iron-rich sources. Wang et al. (2020) [6] found that obese adolescent girls were more prone to iron deficiency anemia, likely due to chronic inflammation and irregular dietary patterns. Meta-analyses by Qin et al. (2023) [4] further affirm the role of obesity-induced inflammation and impaired iron homeostasis across age groups.

Government Interventions and Their Evaluation

Anemia Mukt Bharat (AMB): AMB was launched in 2018 with a target to reduce anemia in women, children, and adolescents by 3% per year. Despite interventions like IFA supplementation and deworming, NFHS-5 data show increasing anemia prevalence in several target groups. Evaluation studies indicate challenges in IFA compliance, irregular supply chains, and lack of awareness (MoHFW, 2021) [7-11].

POSHAN Abhiyaan: POSHAN Abhiyaan targets undernutrition through cross-sector convergence. Though it promotes food fortification and improved health delivery, it lacks a robust focus on obesity or double-duty actions. Monitoring indicators remain more undernutrition-centric.

Challenges in Implementation

- **Logistical Barriers:** Supply chain inefficiencies limit IFA tablet availability.
- **Program Fragmentation:** Multiple schemes operate in silos, reducing synergy.
- **Obesity Neglect:** No major policy yet addresses adolescent or adult obesity systematically.
- **Monitoring Gaps:** Weak program data limits real-time correction and planning.

Implications of the Dual Burden

- **Increased NCD Risk:** Obese individuals with anemia have higher risks of metabolic syndrome and cardiovascular disease.
- **Maternal and Child Health:** Anemia and obesity during pregnancy increase complications, including gestational diabetes and poor fetal growth.
- **Economic Cost:** Productivity loss, healthcare expenditure, and morbidity together impose significant economic burdens.

Recommendations

1. Promote Double-Duty Actions

Design nutrition programs that concurrently address both anemia and obesity. Example strategies include fortifying low-calorie staple foods with iron and incentivizing physical activity in schools.

2. Reform Existing Programs

Update AMB and POSHAN Abhiyaan to include obesity surveillance and control measures. Integrate nutrition and lifestyle counseling into school health programs and urban health missions.

3. Policy Reforms

Regulate marketing of high-fat, high-sugar foods. Introduce front-of-pack labelling and strengthen FSSAI's food fortification and labelling mandates. Revamp the Public Distribution System (PDS) to include fortified staples and reduce overdependence on refined grains.

4. Enhance Multisectoral Convergence

Encourage coordination among the Ministries of Health, Women and Child Development, and Education. Deploy common indicators for monitoring anemia and obesity under shared platforms.

5. Community-Level Approaches

Strengthen peer education, adolescent-friendly clinics, and school-based deworming and nutrition programs. Mobilize frontline workers (ASHA, AWWs) to conduct lifestyle counselling and nutrition education.

Conclusion

India's public health landscape is at a crossroads, with undernutrition and overnutrition coexisting dangerously. The rising prevalence of both anemia and obesity—especially among women and children—requires urgent, evidence-based, and multisectoral action. Existing programs must be realigned to adopt double-duty strategies and strengthen community delivery mechanisms. Long-term improvement in public health outcomes depends on sustained investment in nutrition-sensitive interventions, proactive policymaking, and community engagement.

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