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**Characterisation of the types of anaemia prevalent among children and adolescents aged 1-19 years in India: a population-based study**

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**Abstract**

**Background:**Anaemia is a serious public health concern in India. However, national estimates for its prevalence are not available for the 5-14 years age group, nor are estimates available for the types of anaemia among children and adolescents (1-19 years). We aimed to assess the prevalence of anaemia among children and adolescents in India and to categorise types of anaemia on the basis of micronutrient deficiencies.

**Methods:**We assessed the prevalence of anaemia among children (1-4 years and 5-9 years) and adolescents (10-19 years) using nationally representative data from the Comprehensive National Nutrition Survey. Anaemia was classified on the basis of age and sex-specific WHO cutoffs and serum ferritin, soluble transferrin receptor, folate, cyanocobalamin, and C-reactive protein concentrations as iron deficiency anaemia, folate or vitamin B12 deficiency anaemia, dimorphic anaemia (iron deficiency anaemia and folate or vitamin B12 deficiency anaemia), anaemia of other causes (anaemia not classified as iron deficiency anaemia and folate or vitamin B12 deficiency anaemia), and anaemia of inflammation.

**Findings:**We included 26 765 children (11 624 aged 1-4 years and 15 141 aged 5-9 years) and 14 669 adolescents. In the weighted sample, anaemia prevalence was 40·5% (4553 of 11 233) among 1-4 year-olds, 23·4% (3439 of 14 664) among 5-9 year-olds, and 28·4% (4064 of 14 300) among adolescents. Among 2862 children aged 1-4 years, iron deficiency anaemia (1045 [36·5%]) was the most prevalent type, followed by anaemia of other causes (702 [24·5%]), folate or vitamin B12 deficiency anaemia (542 [18·9%]), dimorphic anaemia (387 [13·5%]), and anaemia of inflammation (186 [6·5%]). Among 2261 children aged 5-9 years, anaemia of other causes was the most common (986 [43·6%]), followed by folate or vitamin B12 deficiency anaemia (558 [24·6%]), iron deficiency anaemia (353 [15·6%]), dimorphic anaemia (242 [10·7%]), and anaemia of inflammation (122 [5·4%]). 861 (31·4%) of 2740 adolescents had anaemia of other causes, 703 (25·6%) had folate or vitamin B12 deficiency anaemia, 584 (21·3%) had iron deficiency anaemia, 498 (18·2%) and dimorphic anaemia, and 94 (3·4%) had anaemia of inflammation.

**Interpretation:**Iron deficiency anaemia is the most common form of anaemia among younger children and anaemia of other causes among 5-9-year-old children and adolescents. Folate or vitamin B12 deficiency anaemia accounts for more than a third of anaemia prevalence. Anaemia prevention efforts should focus on strengthening the existing iron and folate supplementation programmes and prevention of folate or vitamin B12 deficiency anaemia.

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