

RESEARCH PAPER

## Effect of iron deficiency anemia on cognitive development

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### ABSTRACT

Anemia is a major public health problem affecting 1.62 billion people globally. Iron deficiency anemia is the most widespread micronutrient deficiency affecting all age groups irrespective of gender, cast, creed and religion. Iron deficiency affects 20 to 50 per cent of the World's population, making it the most common nutritional deficiency. It is prevalent in most of the developing world and it is probably the only micronutrient deficiency of public health relevance in developed countries. Numerous intervention studies have been performed across the world with varying success and it is clear that in nearly all situations it is a preventable disease with preventable consequences. One such consequence is alteration in cognition that occurs in iron deficient individuals during the early parts of their life cycle. Even short term nutritional deprivation, hunger, or skipping a meal can adversely affect cognitive development and performance. Impaired cognitive function is one of the several potential outcomes of deficiencies of iron and zinc

**Key Words :** Anemia, Cognitive development

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Nutritional anemia is a worldwide problem, particularly in the developing countries where nearly two billion individuals are affected, with a significant proportion being constituted by children and women of child bearing age (WHO, 2001). Adequate iron nutrition in infants and children is necessary for optimal health and growth and to provide a foundation for school and lifelong learning. The costs of iron deficiency anemia are high. Children who are slow to learn may limit the ability of teachers to fulfill their tasks and hold back their classmates, they may need special schools, and they may have increased infection rates and, therefore, increase the load on the health system.

Senderowitz (1998), termed anemia, a critical health concern as it affects growth and energy level. It is a serious world wide problem especially in developing countries. World Health Organization (WHO) has estimated 27 per cent of adolescents as anemic.

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billion people globally. Although the prevalence of anemia is estimated at 9 per cent in countries with high development, in countries with low development the prevalence is 43 per cent (Mc lean *et al.*, 2009). Children and women of reproductive age are most at risk, with global anemia prevalence estimates of 47 per cent in children younger than 5 years, 42 per cent in pregnant women, and 30 per cent in non-pregnant women aged 15–49 years, and with Africa and Asia accounting for more than 85 per cent of the absolute anemia burden in high risk groups. Anemia is estimated to contribute to more than 1,15,000 maternal deaths and 5,91,000 peri-natal deaths globally per year (Ezzati *et al.*, 2004). The consequences of morbidity associated with chronic anemia extend to loss of productivity from impaired work capacity, cognitive impairment, and increased susceptibility to infection (Hass and Brownlie, 2001), which also exerts a substantial economic burden (Horton and Ross, 2003).

Determinants of the prevalence and distribution of anemia

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