

RISK FACTORS ASSOCIATED WITH ANEMIA, IRON DEFICIENCY AND IRON DEFICIENCY ANEMIA IN RURAL NEPALI PREGNANT WOMEN

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Abstract. We conducted a cross sectional study to investigate risk factors associated with severe anemia [hemoglobin (Hb) < 8.0 g dl⁻¹] and poor iron status among Nepali pregnant women. Socio-demographic, anthropometric, health and dietary data were collected from 3,531 women living in the southeastern plains of Nepal. Stool samples were analyzed for intestinal helminthes. Dark adaptation was assessed using the Night Vision Threshold Test (NVTT). Hb levels were measured in all subjects to detect anemia and the soluble transferrin receptor (sTfR) was measured among a subsample of 479 women. The iron status categories were: 1) normal (Hb≥11.0 g/dl and sTfR≤8.5 mg/l); 2) anemia without iron deficiency (Hb<11.0 g/dl and sTfR≤8.5 mg/l); 3) iron deficiency without anemia (Hb≥11.0 g/dl and sTfR>8.5 mg/l); and 4) iron deficiency anemia (IDA): (Hb<11.0 g/dl and sTfR>8.5 mg/l). Factors associated with severe anemia and poor iron status were determined using logistic regression. Hookworm infection increased the risk for developing severe anemia [adjusted odds ratio (AOR): 4.26; 95% CI 1.67-10.89; *p*<0.01] and IDA [relative risk ratio (RRR): 2.18; 95% CI 1.14-4.16; *p*<0.05]. Impaired dark adaptation was a common risk factor for iron deficiency with and without anemia. Intake of iron supplements as tablets and/or tonic was protective against severe anemia, anemia without iron deficiency and IDA. Dietary heme iron was significantly associated with iron deficiency without anemia (RRR: 0.1; 95% CI 0.02-0.47; *p*<0.01). These results indicate the risk factors varied by classification and multiple approaches are needed to reduce anemia and associated nutrient deficiencies.

Keywords: anemia, iron deficiency, pregnant women, Nepal

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