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**Prevalence of iron-deficiency anaemia and risk factors in 1010 adolescent girls from rural Maharashtra, India: a cross-sectional survey**

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**Free article**

**Abstract**

**Objective:**Iron-deficiency anaemia (IDA) is the most common nutritional disorder observed in adolescent girls in India. Our aim was to investigate the prevalence and risk factors associated with IDA in rural Maharashtra, India, to address current evidence gaps.

**Study design:**Cross-sectional survey.

**Methods:**The study recruited 13- to 17-year-old adolescent girls living in 34 villages of Osmanabad district. Data were collected on individual health, dietary, sociodemographic factors, and anthropometric measurements were taken. Haemoglobin (Hb) levels were measured using Sahli's haemometer. Logistic and linear regressions were used to identify risk factors associated with IDA and Hb levels, respectively.

**Results:**Among 1010 adolescent girls (response rate 97.5%), the mean Hb was 10.1 g/dl (standard deviation = 1.3), and 87% had anaemia (Hb < 12 g/dl). The prevalence of mild (11.0-11.9 g/dl), moderate (8.0-10.9 g/dl) and severe (Hb ≤ 7.9 g/dl) anaemia was 17%, 65% and 5%, respectively. Anaemia likelihood increased significantly with age (odds ratio (OR): 1.41 per year, 95% confidence interval (CI): 1.17-1.70). Factors associated with decreased anaemia risk were mid-upper arm circumference (MUAC) ≥22 cm (OR: 0.51, 95% CI: 0.31-0.82), ≥3 days/week consumption of fruit (OR: 0.35, 95% CI: 0.23-0.54) or rice (OR: 0.39, 95% CI: 0.17-0.91), and incomplete schooling (OR: 0.47, 95% CI: 0.24-0.91). In the final model lower age, MUAC and fruit consumption were significantly associated with Hb level.

**Conclusion:**Anaemia prevalence was extremely high among adolescent girls in rural areas of Maharashtra. Whilst we identified risk factors that could be used for targeting interventions, there is urgent need of comprehensive preventative interventions for the whole adolescent girl population.

**Keywords:**Adolescent; Anaemia; Haemoglobin; India; Iron deficiency; Maharashtra.

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