

Impact of *Moringa oleifera*-fortified school lunches on haemoglobin concentrations in adolescent girls in Zinder, Niger

a six-month intervention study

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ABSTRACT

Background: Adolescent girls in the Sahel region are at high risk of iron deficiency anaemia, which impairs cognitive development and educational outcomes. School feeding programmes are a key intervention platform, yet often lack micronutrient density.

Purpose and objectives: This brief report evaluates the efficacy of integrating locally sourced *Moringa oleifera* leaf powder, a nutrient-dense food source, into standard school lunches to improve haemoglobin concentrations in adolescent girls.

Keywords: *Moringa oleifera*, iron deficiency anaemia, school feeding programme, haemoglobin concentration, adolescent health, Sahel region, nutritional intervention

Article Highlights

- A six-month intervention with *Moringa*-fortified lunches improved haemoglobin levels in adolescent girls.
- The adjusted mean haemoglobin difference was 0.82 g/dL compared to the control group.
- The study demonstrates a practical, locally sustainable strategy for combating iron deficiency.
- Findings support integrating *Moringa* into national school feeding programme guidelines.

Core Finding

Daily fortification with 5g of dried *Moringa oleifera* leaf powder in school lunches led to a clinically significant improvement in haemoglobin status among participants in a resource-limited setting.

This study presents evidence for a scalable nutritional intervention within existing school feeding platforms.

ABSTRACT-ONLY PUBLICATION

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