

Feasibility of Iron Ingot use in a Resource-Limited Caribbean community: findings from a survey to guide anemia prevention

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Abstract

Background

Universal iron supplementation is recommended for children in areas with a prevalence of iron deficiency anemia $\geq 40\%$. Implementation of this recommendation is challenged by cost, logistical barriers, poor palatability and side effects of liquid oral iron supplementation. Cooking with a reusable iron ingot can supplement common foods with bioavailable iron and may provide a sustainable and cost-effective solution.

Aims

To examine the resources and cooking practices of families with young children in a low-income Dominican community, known to have iron-deficiency anemia rates exceeding 50% at 12 months of age, to determine the feasibility of cooking with an iron ingot for sustainable iron fortification.

Methods

Mothers with infants under 12 months of age were administered a questionnaire about household cooking practices and resources to determine the frequency of boiling staple foods and the availability and use of acidifying agents necessary for release of bioavailable iron from the ingot during boiling.

Results

Of the 210 respondents, the vast majority (96.2%) boil water at least 3 times per week, and 86.27% boil water daily for cooking. Nearly all (99.0%) respondents have year-round access to an edible acidifying agent. Only 36.7% of all participants cook with an acidifying agent daily, and less than 40% do so at least three times per week.

Conclusions

The feasibility of using an iron ingot for supplementation of foods is supported by the frequency of boiling water and access to edible acidifying agents. However, changes in cooking practices will be necessary before the iron ingot can be a sustainable source of iron fortification in this context.