THE EFFECTS OF A MULTI-MICRONUTRIENT FORTIFIED JUICE DRINK ON THE HEMOGLOBIN LEVELS OF FILIPINO SCHOOLCHILDREN

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BACKGROUND

Nutritional anemia can be caused by different micronutrient deficiencies like folate, riboflavin, vitamin A and cobalamine but iron is the major contributor. Food fortification is the most cost effective approach in reaching large populations at risk of iron deficiency anemia.

OBJECTIVE

The study evaluated the dose-response of a multi-micronutrient fortified juice drink on hemoglobin level (Hb) of schoolchildren.

MATERIALS AND METHODS

Hb levels of 2423 children aged 6 to 9-years old in six public schools were collected. All anemic children (246) were randomly allocated into groups to receive different doses of fortified drink during a supervised 120-day feeding period: Group 1: daily dose (HD), Group 2: 5X/week (MD), Group 3: 3X/week (LD) and Group 4: unfortified (Control). Pre- and post-measurements of iron biomarkers and food intake were collected using standard methods.

RESULTS

At the start of the study, prevalence of anemia was 10%. Complete data from 228 children was observed. At baseline, mean Hb was significantly lower in the Control than in the intervention groups. At endpoint significant Hb increases were observed within time periods in all groups but no significant difference was found between groups. Consequently, there was a significant reduction in anemia prevalence in all groups from 100% at baseline to 36% (Control), 30% (LD), 23% (MD) and 26% (HD) at endpoint. At endpoint, the proportion of children meeting the Estimated Average Requirement for iron was: Control (29%), LD (54%), MD (48%) and HD (62%) with the juice drink contributing to 23%, 35% and 42% to the intake in the LD, MD and HD, respectively.

CONCLUSION

At endpoint, no dose response effect was observed in hemoglobin in this population. This can be related to the low amount of iron in the juice and limited duration of consumption that can show significant improvement in Hb among the selected anemic population especially where the prevalence of IDA was low.