



EFFECTIVENESS OF LOW-IRON MULTIPLE MICRONUTRIENT POWDERS FOR INFANT AND YOUNG CHILD FEEDING IN TWO REGIONS OF ETHIOPIA

Micronutrient Initiative, Ethiopia

The Challenge

Inadequate infant and young child feeding (IYCF) practices continue to drive high rates of malnutrition, including iron deficiency. In turn, malnutrition can lead to increased rates of infectious disease. In countries such as Ethiopia, 44% of children under age five are stunted, and 44% suffer from anaemia.¹ Fortification and supplementation are recommended means of enriching the nutrient levels of foods consumed by young children. This is especially vital as infants are transitioned from breastfeeding to complementary feeding to ensure they are receiving all the necessary nutrients.

The Intervention

Micronutrient Initiative, in collaboration with the Ethiopian Public Health Institute and Wagegingen University, conducted a study to assess whether low-dose iron multiple micronutrient powders (MNP) would improve the micronutrient content of the complementary food diet of infants in Ethiopia. The MNP intervention was embedded in a UNICEF-led programme where households with children aged 6 to 23 months were offered locally produced complementary food rations. Households received sachets of MNP containing 15 micronutrients with instructions on how to add them to infants' complementary food on alternate days. Health extension workers provided enhanced IYCF counselling and growth monitoring and promotion and disseminated IYCF messaging to communities.

The Evaluation

This quasi-experimental, matched-control cluster study was conducted in the Oromiya and South Nation, Nationalities and Peoples regions in Ethiopia over a period of 18 months. MNP supplements



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were provided for eight months and children were followed longitudinally. Seventeen intervention villages were selected, and matched with eighteen comparison villages. The target population was children aged 6 to 11 months and their caretakers. The study aimed to investigate the impact of MNPs on infant feeding practices, child growth and iron status as well as disease outcomes in young children. Additionally, the research team conducted a knowledge, attitudes and practices questionnaire to monitor the perceptions, acceptability and use of MNPs. Data was collected using standardised questionnaires and health visit measurements.

The Results

A total of 2,356 children were enrolled into the study. Haemoglobin concentrations also increased in the intervention infants (+0.25 g/dL), whereas the comparison infants' concentrations decreased (-0.08g/dL). By the end of the intervention, the prevalence of anaemia seemed to decrease in the intervention group (37.1% to 24%) and not in the comparison group (26.4% to 29.7%). Stunting increased in both groups.

However, intervention infants experienced lower increases in stunting (12.2% to 22.1%) compared to the comparison infants (17.8% to 42.2%). Findings suggest that infants in the intervention villages experienced higher rates of diarrhoea, but the difference was small and decreased over time. However, there were no differences in number of visits to the clinic as a proxy for severe disease. Overall, the MNPs were well accepted and mothers reported positive effects on activity and appetite for their children.

The Lessons Learnt

This study was implemented within a complex pilot programme, which involved many stakeholders. Partnership building took a lot of time and resources and caused delays in the onset of the intervention. Additionally, MNPs were a new commodity in Ethiopia, and the registration, import and distribution took more time than anticipated causing a delay in their introduction.

Looking Ahead

This study demonstrates that MNPs are generally well accepted by mothers and children, and combining MNP and complementary food distribution with IYCF education for caretakers has the potential to improve iron status in young children. These findings suggest that: 1) future scaling-up of interventions introducing MNPs in the context of an integrated IYCF intervention in Ethiopia is recommended; 2) MNPs containing 6 milligrams iron, given every other day is mildly efficacious and safe; and 3) future MNP/IYCF programmes should ensure adequate prevention and control of diarrhoea in addition to adequate measures to diagnose, prevent and control malaria, as recommended by the World Health Organization.

References

¹ Ethiopian Public Health Institute. *Ethiopian National Micronutrient Survey Report*. Addis Ababa, Ethiopia: Ethiopian Public Health Institute; 2016. Available at https://www.ephi.gov.et/images/pictures/download2009/National_MNS_report.pdf.

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For more information, contact: Saskia Osendarp, Wageningen University, saskia.osendarp@osendarnutrition.com and Luz Maria De-Regil, Nutrition International, lderegil@nutritionintl.org.

