THE EFFICACY OF MULTI-MICRONUTRIENT GROWTH MIX WITH HIGH CALORIE DENSE FOODS ON THE NUTRITIONAL STATUS OF CHILDREN AGED 4-5 YEARS OLD

Imelda Angeles-Agdeppa, Ph.D., Marcela C. Saises, Ren Annaliz P. Garingo, Jackie Lyn Arevalo, Ma. Adela D. Rubio, Christine B. Espiritu, Diorella Marie M. Tria, and Melvin A. Sareno

BACKGROUND

Fortification of staple foods with micronutrients may be insufficient to improve physical growth because the total proportion of macronutrients is still inadequate. To answer this problem, newly developed Multi-micronutrient Growth Mix (MGM) was combined into high calorie dense snacks.

OBJECTIVE

This study evaluated the effects of multi-micronutrient growth mix (MGM) added to high calorie snacks in improving the nutritional status and hemoglobin levels of children aged 4 to 5 years old over a 120 day feeding period.

MATERIALS AND METHODS

This study was conducted in 19 selected schools in Tanauan (10 schools) and Talisay (9 schools), Batangas. Using a randomized, double blind placebo controlled design, 247 children ages 4-5 years old were grouped into anemic (fortified n=38, non-fortified n=40), anemic underweight (fortified n=24, non-fortified n=26), and underweight (fortified n=59, non-fortified n=60) children. These groups participated and completed the 120-day feeding intervention period. Children were fed with either high calorie snacks plus placebo or with high calorie snacks plus MGM in the school feeding centers. Weight and height were measured and blood samples were collected for the analysis of hemoglobin.

RESULTS

Results showed that significant increase in hemoglobin (Hb) concentration was observed in both groups between baseline and endline among anemic (p<0.001) and anemic underweight (p<0.001) children but no significant increase was observed between groups. Mean weight increased in all groups between time periods but no significant difference was observed between groups. Significant increase in height was also observed in all groups.

CONCLUSION AND RECOMMENDATIONS

Children with low micronutrient and anthropometric status had better response to both interventions - MGM plus high calorie dense snacks and high calorie dense snacks alone. It is recommended that MGM plus high calorie dense foods be used as an intervention snacks to help reduce both micronutrient deficiency and undernutrition.