

Abstract

Oral Nutritional Supplementation Combined with Dietary Counselling Promotes Growth and Nutritional Adequacy, and Is Well Accepted in Toddlers Experiencing Growth Concerns [†]

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Abstract: Background and objectives: Adequate nutrition is a key determinant of growth in children, and Oral Nutritional Supplement (ONS) represents an important strategy to improve growth and nutritional adequacy in nutritionally at-risk children. We aimed to assess the effect of ONS combined with dietary counselling (DC) on the growth and nutritional adequacy in 1–3-year-old children \leq 25th weight-for-length percentile. Methods: In this prospective single-arm, open-label intervention study (N = 108), children received 2 servings/day of ONS plus DC for 16 weeks. The ONS was energy and nutrient dense, with increased levels of vitamin A, iron, and zinc (growth-limiting micronutrients), as well as DHA and phospholipids, including sphingomyelin. Anthropometric assessments were performed at baseline and weeks 3, 6, 9, 12, and 16. Change scores from baseline to week 16 were analyzed by a mixed model adjusted for age, sex, and baseline, and was corrected for regression to mean. Nutrient intake was assessed using three-day food intake diaries at baseline, week 6, and week 16. Nutritional adequacy was estimated by comparing against the Estimated Average Requirements, based on the Philippines Dietary Reference Intakes. Acceptance of the ONS was assessed using a toddler milk satisfaction questionnaire. Results: The children's mean age at baseline was 21.3 ± 6.6 months and 44.4% were male. Weight (0.740 kg) and height (3.02 cm) significantly increased ($p < 0.001$) from baseline to week 16 including at weeks 3, 6, 9, and 12. There was a significant increase in change score for weight-for-height (0.188 SD), weight-for-age (0.146 SD), height-for-age (0.062 SD), and BMI-for-age (0.163 SD) Z scores, and intakes of energy, protein, and critical micronutrients, such as zinc, iron, selenium, and vitamins A, B1, B3, B6, B9, B12, C, and D, all significantly increased from baseline to week 16 ($p < 0.05$ for all). The percentage of children achieving nutrient adequacy increased ($p < 0.05$) and reached close to 100% for iron, zinc, calcium, and vitamins A, B1, B3, B6, B9, B12, and C. Compliance to the ONS intake was high (86%) and 99% reported their overall opinion on the product to be good, very good, or excellent. Conclusion: ONS combined with DC promotes growth and nutritional adequacy, and is well accepted in toddlers with growth concerns.

Keywords: Oral Nutritional Supplementation; growth; nutrient intakes; nutritional adequacy; toddlers



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