

Title: Daily dietary intake of zinc is positively associated with Height-for-Age Z-score (HAZ) among Ethiopian children 6-35 months of age

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Objective: In Ethiopia, 44% of children under five years-of-age are stunted (i.e., height-for-age (HAZ) below -2SD). This is considered a major public health concern by the Ethiopian Ministry of Health's National Nutrition Plan. Future efforts to reduce stunting depend largely on understanding the local determinants of stunting. Zinc deficiency is a recognized risk factor for stunting in this age group and we hypothesized this was also true in Ethiopia. Our objectives were to determine the association between daily dietary zinc intake (DDZI) and HAZ and to also identify determinants of DDZI among children 6-35 months of age.

Methodology: We used regionally representative data from the 2011 Ethiopian National Food Consumption Survey, weighted for relative population sizes (N=6752 children). Univariate general linear models served to assess the association between HAZ and DDZI and to identify determinants of DDZI. Models included potential socioeconomic, demographic and physiological confounders.

Results: DDZI was positively associated with HAZ ($p < 0.0001$). Socio-economic status, maternal education, and maternal age were positively associated with DDZI, while the number of children under 5 years-of-age in a household was negatively associated with DDZI ($p < 0.0001$). Children from the Amhara and SNNPR regions, and those reportedly sick in the previous 2 weeks were most likely to report low DDZI ($p < 0.0001$).

Conclusion: Low height-for-age remains a major public health problem in Ethiopia. Our findings suggest that height-for-age is associated with low zinc intake in Ethiopia, providing evidence for Ethiopia's National Nutrition Plan to emphasize increased consumption of zinc rich foods in young children.