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*Abstract*

# Socio-Economic Variables Are Associated with Mean Adequacy Ratio in Nigerian Children †

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**Abstract:** Background and objectives: Diet quality is critical for child growth and development. We previously identified a high prevalence of micronutrient inadequacies in Nigerian children's diets. The objective of this study was to identify socio-economic predictors (socio-economic status (SES), main caregivers' education, and household income) of the mean adequacy ratio (MAR), a proxy for diet quality, in this population. Methods: Data from the Ibadan Kids Nutrition and Health Study (I-KNHS) in Nigeria was used to calculate the Nutrient Adequacy Ratio (NAR) for 17 micronutrients. The MAR was calculated as the average of NARs in children aged both 4–8 years (y) ($n$ = 510) and 9–13 y old ($n$ = 434). Logistic regression was applied to examine the odds of having an MAR higher than the age group median. Results: The median (interquartile range (IQR)) MAR among 4–8 y old children was higher than that of the older children aged 9–13 y (0.67 (0.23) vs. 0.56 (0.24), $p < 0.0001$), which corresponds to a median of 67% and 56% of micronutrient requirements being met by younger and older children, respectively. Children aged 4–8 y in the highest SES tertile had higher (2.06 (95% CI 1.3–3.25)) odds of having a high MAR compared to the lowest SES tertile. However, this trend was the opposite in 9–13 y old children, with those in the highest SES tertile having lower (0.54 (0.33–0.89)) odds of having a high MAR compared to those in the lowest SES tertile. Higher main caregiver's education and household income were associated with higher MARs in 4–8 y old children, but not in older children. The 4–8 y old children in the highest tertile of household income and main caregiver's education had a higher MAR compared to those in the lowest tertile, with an OR of 1.85 (1.17–2.93) and 2.57 (1.46–4.52), respectively. Discussion: SES, main caregivers' education, and household income were predictors of diet quality. However, contrasting associations were observed between these socio-economic variables and the diet quality between age groups. The cause may be due to older children from the highest SES group having greater freedom to make independent food choices. These findings suggest that interventions to improve the diets of children in Nigeria should address those beyond the lower socio-economic groups.

**Keywords:** diet quality; children; Nigeria; socio-economic status



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**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** The data presented in this study are available on request from the corresponding author. The dataset is not publicly available due to ethical reasons.

**Conflicts of Interest:** L.O., L.-T.T., D.W., M.T. and M.A.Z. are employed by Nestlé Research Center, Switzerland, a member of Société des Produits Nestlé (SPN). SPN is a subsidiary of Nestlé S.A.