



The 65th ASH Annual Meeting Abstracts

POSTER ABSTRACTS

114. SICKLE CELL DISEASE, SICKLE CELL TRAIT AND OTHER HEMOGLOBINOPATHIES, EXCLUDING THALASSEMIA: CLINICAL AND EPIDEMIOLOGICAL**The Importance of Screening for Food Insecurity in Children with Sickle Cell Anemia: An Ancillary Study to the Severe Acute Malnutrition Feasibility Trial in Nigeria**

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Introduction

Household food insecurity—lacking access to, or having uncertain access to, food that meets a person's dietary needs—is a longstanding problem in Nigeria that has continued to worsen in recent years. One of its most severe consequences is malnutrition, particularly affecting children due to their high nutrient demand coupled with higher energy expenditure. Even in high-income countries, such as the United States, many children with sickle cell anemia have lower weights and heights than their healthy peers. Due to their elevated nutrient requirements, children with sickle cell anemia may be at an even greater risk of malnutrition when faced with limited access to adequate food. The relationship between childhood food insecurity and malnutrition has been previously studied in younger children in Nigeria, but rarely in older children, and to our knowledge, never in older children with sickle cell anemia. We tested the hypothesis that there is a direct association between increased food insecurity and more severe malnutrition (lower body mass index [BMI] z-score) in older children with sickle cell anemia in Nigeria.

Methods

This was a planned analysis of the data of children enrolled in a feasibility trial for managing severe acute malnutrition in older children with sickle cell anemia in Nigeria (SAMS trial; #NCT03634488). In this study, children 5–12 years old with sickle cell anemia and uncomplicated severe acute malnutrition (BMI z-score < -3.0) were randomly assigned to receive either supplemental ready-to-use therapeutic food (RUTF) only or RUTF combined with moderate fixed-dose hydroxyurea therapy for 12 weeks. Baseline anthropometric data were obtained for each participant. Upon enrollment in the trial, the participants' caregivers completed the US Household Food Security Survey Module (HFSSM). Using the eight questions in the childhood portion of this standardized survey, we categorized the participants into three food security statuses: food security (0–1), low food security (2–4), and very low food security (5–8). Childhood food security scores were also measured as a continuous variable on a scale of 0–8, with higher scores indicating greater food insecurity. We constructed a linear regression model to estimate the association between childhood food insecurity and baseline BMI z-score.

Results

Data were collected between August 2021 and May 2022. The median age of the 108 participants in the study was 10.3 years (IQR 8.8–11.5). Most participants had low (55%) or very low (34%) food security. BMI z-score was not associated with categorical food security status ($p=0.108$). However, higher food insecurity as a continuous variable was associated with a lower BMI z-score (Pearson correlation -0.23 , $p=0.015$; Figure 1). In a multivariable linear regression with sex, age at study

entry, total hemoglobin, employment status, and head of household educational status, the childhood food insecurity score was negatively associated with the BMI z-score (Beta coefficient = -0.05 , $p=0.047$).

Conclusions

Our study reveals a high prevalence of food insecurity among older children with sickle cell anemia in Nigeria. Moreover, children experiencing higher food insecurity also exhibited more severe malnutrition, as evidenced by their lower BMI z-scores. Based on these results, we have started implementing food insecurity assessment as routine medical care in children with sickle cell anemia at multiple clinics in northern Nigeria. Children experiencing higher levels of food insecurity are referred to nutritional counseling, where they receive guidance on locally available nutrient-dense foods and preparation strategies.

Figure 1. The predicted baseline body mass index z-score with 95% confidence intervals based on childhood food insecurity scores from a linear regression model of the participants in the SAMS trial.

Disclosures DeBaun: *Novartis Pharmaceuticals Corporation:* Other: Study steering committee member; *Global Blood Therapeutics:* Membership on an entity's Board of Directors or advisory committees, Research Funding; *Vertex/CRISPR:* Membership on an entity's Board of Directors or advisory committees; *FORMA:* Consultancy.

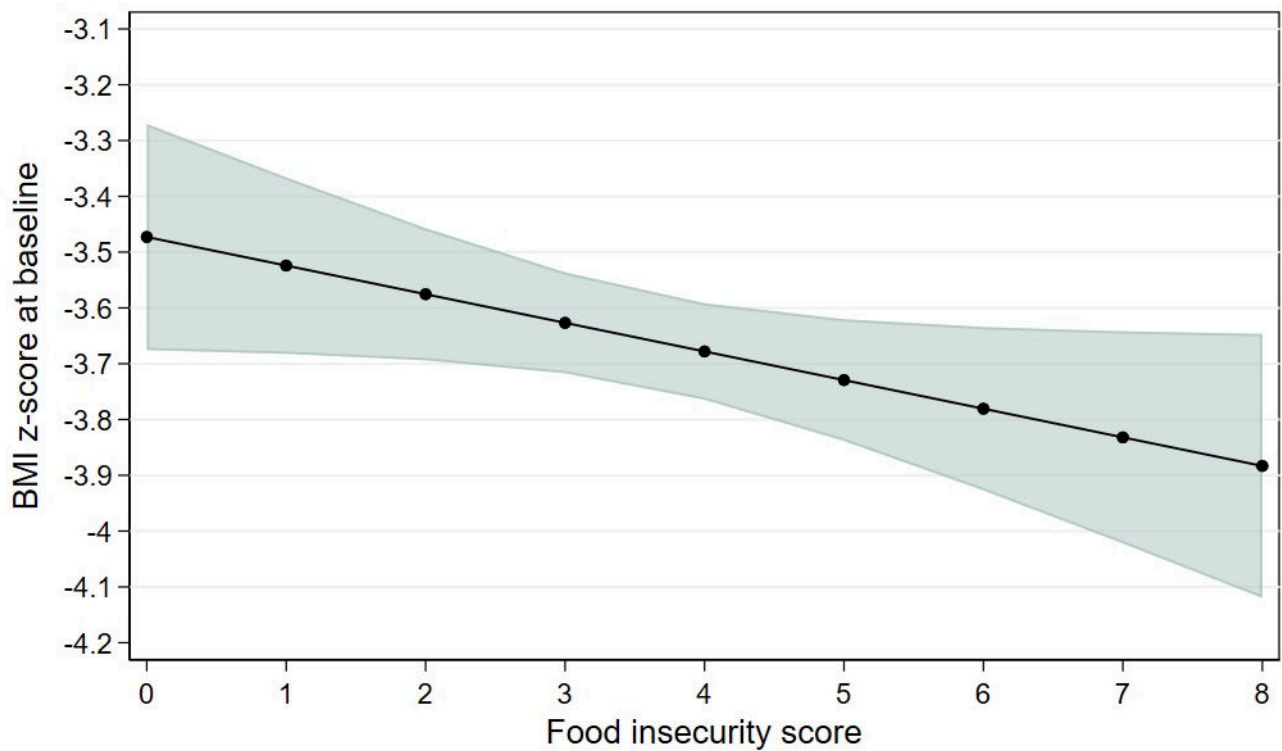


Figure 1

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