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The Rate of Food Insecurity among Households with Children with Sickle Cell Disease is Above National Average

Background: Despite multiple studies showing the negative impact of food-insecurity on overall health in children, little research has been done to assess the prevalence and sequelae of food-insecurity in children with sickle cell disease (SCD). We sought to assess the prevalence of food insecurity children with SCD in Nashville, Tennessee and examine associations between food insecurity and disease-severity.

Methods: Between May and November 2018, we conducted a single center cross-sectional study using the previously validated self-administered U.S. 18-item Household Food Security Survey and the 8-item Food Security Module for Youth Ages 12 to 17 years old completed by children when applicable, during regular outpatient clinic visits asking about food conditions at any time during the past 12 months in the house. We also collected demographic data, anthropometric measures, and clinical data including incidence rate of pain and acute chest syndrome in the past year.

Results: A total of 76 caregivers and 25 children with SCD completed the surveys. The median age of the pediatric participants was 10.7 years (interquartile range [IQR] 9.6), approximately half were male. The rate of household food insecurity was 23.7%. Within this group of households with food insecurity; 14.5% and 9.2% were classified as having *low* and *very low* food insecurity, respectively. In contrast, the self-reported child-level food insecurity rate was 48% (12/25); 32% (8/12) reported to be *low* and 12% (3/12) *very low* food insecure. A total of 75% (9/25) of the children indicated to be food-insecure when their caregivers indicated no food insecurity. No significant difference in anthropometric and laboratory measures were noted between the food-secure and insecure children. The incidence for pain and acute chest syndrome episodes was not statistically significant different between food-secure and insecure children (61.1 and 67.3 per 100 patient-years, and 11.1 and 9.1 per 100 patient-years, respectively). Most of the children in the food-insecure group had phenotype HbSS (72.2%), and all were on disease-modifying therapy (61.1% (11/18) on hydroxyurea and 11.1% (7/18) on regular blood transfusion therapy).

Conclusions: In a tertiary care medical center, based on parental reporting, one in four households with children with SCD is food-insecure, but when based on children reporting three in four children were food-insecure.