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Nutritional assessment of children with sickle cell diseases in Komfo Anokye Teaching Hospital

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Background: Sickle Cell Disease (SCD) is a long term hemolytic disease mostly associated with impaired growth, delayed maturation and poor nutrition status. It is also one of the major contributing factors for childhood mortality.

Objective: The study aimed to assess the nutritional status of children with sickle cell diseases using dietary intakes, anthropometric measurements and biochemical markers.

Methods: A cross sectional study was conducted on 100 children with sickle cell diseases aged 3-12 years at the Komfo Anokye Teaching Hospital. 24-hour dietary recall and food frequency questionnaire were used to assess dietary intake. Serum protein, albumin and ferritin as well as full blood count were used to assess biochemical status. Weight, height and Mid-Upper-Arm-Circumference were used to calculate Body Mass Index (BMI), weight-for-age (percentile), height-for-age (percentile), BMI-for-age (percentile) and MUAC-for-age (percentile).

Findings: The mean intake of iron was 5.9 ± 3.0 mg/d, zinc was 5.1 ± 3.0 mg/d and vitamin A was 107 ± 112.4 , while vitamin E was 4.2 ± 2.9 for the children with SCD. Calories were 852 ± 342.3 kcal while protein was 25.0 ± 10.7 g/d. Low BMI-for-age, MUAC-for-age, weight-for-age and height-for-age were observed in 40%, 37%, 22%, and 69% of the children, respectively.

Conclusion & Recommendation: There was significant association ($p=0.00$, $r=0.64$) between vitamin B12 and the red blood cell count. Thus, there was inadequate nutritional intake of the children that were assessed. It is therefore recommended that a longitudinal study be conducted on children with sickle cell diseases to assess the actual nutritional requirements of children with SCD.

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