

The Impact of Nutrition Education Intervention in Improving the Nutritional Status of Sickle Cell Patients

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Abstract : Sickle cell disease (SCD) is an inherited blood disorder that mostly affects individuals in sub-Saharan Africa. Nutritional deficiencies have been well established in SCD patients. In Ghana, studies have revealed the prevalence of malnutrition, especially amongst children with SCD and hence the need to develop an evidence-based comprehensive nutritional therapy for SCD to improve their nutritional status. The aim of the study was to develop and assess the effect of a nutrition education material on the nutritional status of SCD patients in Ghana. This was a pre-post interventional study. Patients between the ages of 2 to 60 years were recruited from the Tema General Hospital. Following a baseline nutrition knowledge (NK), beliefs, sanitary practice and dietary consumption pattern assessment, a twice-monthly nutrition education was carried out for 3 months, followed by a post-intervention assessment. Nutritional status of SCD patients was assessed using a 3-days dietary recall and anthropometric measurements. Nutrition education (NE) was given to SCD adults and caregivers of SCD children. Majority of the caregivers (69%) and SCD adult (82%) at baseline had low NK. The level of NK improved significantly in SCD adults (4.18 ± 1.83 vs. 10.00 ± 1.00 , $p < 0.001$) and caregivers (5.58 ± 2.25 vs. 10.44 ± 0.846 , $p < 0.001$) after NE. Increase in NK improved dietary intake and dietary consumption pattern of SCD patients. Significant increase in weight (23.2 ± 11.6 vs. 25.9 ± 12.1 , $p = 0.036$) and height (118.5 ± 21.9 vs. 123.5 ± 22.2 , $p = 0.011$) was observed in SCD children at post intervention. Stunting (10.5% vs. 8.6%, $p = 0.62$) and wasting (22.1% vs. 14.4%, $p = 0.30$) reduced in SCD children after NE although not statistically significant. Reduction (18.2% vs. 9.1%) in underweight and an increase (18.2% vs. 27.3%) in overweight SCD adults was recorded at post intervention. Fat mass remained the same while high muscle mass increased (18.2% vs. 27.3%) at post intervention in SCD adult. Anaemic status of SCD patients improved at post intervention and the improvement was statistically significant amongst SCD children. Nutrition education improved the NK of SCD caregivers and adults hence, improving the dietary consumption pattern and nutrient intake of SCD patients. Overall, NE improved the nutritional status of SCD patients. This study shows the potential of nutrition education in improving the nutritional knowledge, dietary consumption pattern, dietary intake and nutritional status of SCD patients, and should be further explored.

Keywords : sickle cell disease, nutrition education, dietary intake, nutritional status

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