



Introduction

Nutrition is the most environmental factor affecting health. It is necessary to sustain life, especially for children during the period of rapid growth and development. Good nutrition help in preventing acute and chronic illness as chronic renal failure (CRF) (*Lawrence, 2009*).

The human body has a remarkable ability to rid itself of unnecessary waste products, the kidney plays a vital role in this process. Because food and liquids are the sources of many of these waste products, diet modification plays a very important role when kidney function is diminished. Chronic kidney disease (CKD) can occur at any time of life however, its impact can be felt most significantly in children. Growth failure is commonly found between children with renal failure, the treatment efforts should be focused on normalizing growth and development (*Matumoto et al., 2008*).

Medical management in pediatric patients can include peritoneal dialysis and haemodialysis. The nutritional management of chronic kidney disease (CKD) is designed to maintain blood urea nitrogen (BUN) within acceptable ranges; regulate sodium, potassium and phosphorus levels; regulate fluid balance and prevent the wasting and malnutrition often associated with CKD. Specific nutrient recommendations depend on the degree and type of renal failure, clinical symptoms and treatment modalities. Hence, the nutritional state of children undergoing haemodialysis therapy should be assessed (*Bansal, 2009*).



The assessment of nutritional state of children undergoing haemodialysis therapy should be based on clinical assessment and biochemical parameters which include; history of weight loss, percent standard weight, body mass index, muscle mass, subcutaneous fat mass and plasma albumin, creatinine, bicarbonate and cholesterol values in blood. Malnutrition and high risk for growth failure are the main problems found when assessing the nutritional state of children undergoing haemodialysis therapy (*National Kidney Foundation, 2006*).

Dialysis is a lifesaving treatment for children with end stage renal disease (ESRD). The most common modalities of management is haemodialysis which involves the use of artificial kidney to remove waste products and excess water from the patient's blood (*Kjllstand et al., 2007*).

The blood is pumped from the body during the dialysis process through the machine dialyser that contains a semi-permeable membrane and then returned to the child dialyser. Urea, creatinine, phosphorus and potassium diffuse across this membrane and are removed in the dialysis fluid. Fluid is also removed from the blood by ultra-filtration through the semi-permeable membrane. Regulation of the ions in the dialysis fluid means that; normal levels of calcium, magnesium, sodium and chloride can be maintained. Dietary restrictions are necessary for children on haemodialysis to ensure that too high concentration of metabolites such as protein, urea, creatinine, phosphorus and potassium do not accumulate between dialyses and that the child does not become fluid overloaded (*Jerny, 2009*).

Nurses have major and several roles in preventing malnutrition for children undergoing haemodialysis therapy that causing loss of lean body



mass, through educating these children about healthy diet and follow up care, controlling symptoms, preventing complication, good observation of the physical state of these children, explain renal failure in terms that the children can understand, stressing the fact that it is a chronic disease and that adherence to treatment plan is necessary in order to delay or prevent complications and encourage children to participate in prescribed care (*Jakson, 2004 and Edwina, 2009*).

Significance of the problem:

It was observed from in the Hemodialysis Perdatric Unties in Benha University Hospital and Teaching Hospital that children a have lack of knowledge regarding good nutrition result in dangerous complication as that children high risk for growth failure and malnutrition. So it is important to conduct this study to assess child's knowledge about good nutrition and assessing nutritional status of these children.