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# PEDIATRIC NUTRITION, GASTROENTEROLOGY & CHILD DEVELOPMENT

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## Zinc status of under-five children of kanam local government area, plateau state, North-central Nigeria

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Nutritional deficiencies of trace elements are among the top ten causes of death in Sub Saharan Africa. In Kanam Local Government Area of Nigeria, the problem is compounded by high poverty levels and a high level of illiteracy. This study determined the zinc status of children less than five years of age in Kanam LGA by determining the levels of zinc in serum and in the staple foodstuffs consumed by these children. The area was broadly divided into two halves for the purpose of this research. Questionnaire on zinc-rich foods and foods rich in zinc inhibitors consumed by the children during the previous month was administered in a period of six months. Thereafter, samples of blood were taken from 66 children aged five years and below. Samples of foodstuffs making up the diet of the subjects were also collected at the same period. Food samples were wet-ashed according to the protocol of Hill et al. (1986). All samples were then analyzed, for their zinc content, on inductively coupled plasma -mass spectrometry, ICP-MS, (Perkin Elmer, Norwalk, CT, USA) using internal standardization with gallium in 2% HNO<sub>3</sub>. Data were analyzed using the student's t-test on SPSS Version 17.0. The results of the analysis showed that the average serum zinc levels were  $57.59 \pm 30.40 \mu\text{g/dl}$ . These were below the normal range of  $65-117 \mu\text{g/dl}$  for children less than 10 years. Based on the results, 59.09% of the children have serum zinc level below the cut-off point of  $61 \mu\text{g/dl}$ . Data from the questionnaire showed that 96.7% of the population studied relied on cereal-based diets. The results of this research showed that the studied population is at risk of zinc deficiency, and the risk is higher among male gender (63.33%) than in female (55.56%). The prevalence of low serum zinc, in this study (59.09%) is a first research and warrants a national level programme to consider further assessment to identify groups at elevated risk

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