



**University of Venda**

**THE PREVALENCE OF ZINC DEFICIENCY AMONG CHILDREN AGED 3-5 YEARS IN  
THE VHEMBE DISTRICT OF LIMPOPO PROVINCE**

The dissertation is submitted in fulfilment of the requirements of the degree of Master of Public Nutrition in the Department of Nutrition in the School of Health Sciences at the University of Venda.

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## ABSTRACT

**Background.** Children under five years constitute the most vulnerable group and their nutritional status is a sensitive indicator of community health and nutrition. Diet of many South Africans consists of porridge as staple food which is usually consumed with vegetables, legumes and a small amount of animal derived food. These animal derived food sources are not consumed extensively due to their high cost, limited supply and religious or cultural practices.

**Objective.** To determine the prevalence of zinc and iron deficiency among pre-school children aged 3-5 years in Vhembe district of the Limpopo province, South Africa.

**Methods.** This study was carried out on 400 pre-school children in Vhembe district, Limpopo province, South Africa. Municipalities were purposively selected and subjects were chosen by simple random sampling methods. Anthropometric measurements were made following standard techniques. Serum zinc, iron, ferritin, Tsaturation, transferrin and CRP levels were measured by atomic absorption spectrophotometer.

**Results.** Of the 400 children, 349 were included in the final analysis of results. The prevalence of wasting, stunting and underweight was 1.4%, 18.6% and 0.3% respectively while 20.9% of the children were overweight and 9.7% were obese. The prevalence of zinc deficiency was 42.6% and anaemia was 28%, both were significantly higher in females as compared to males. When using both serum ferritin and Tsaturation levels as markers of iron deficiency 7(2%) children were found to have IDA. Combined iron and zinc deficiencies using ferritin as a marker of iron deficiency was found in 8(2.3%) of the children while when using Tsaturation as a marker of iron 42(12%) of the children had combined iron and zinc deficiencies.

**Conclusion.** Zinc deficiency and anaemia are common in pre-school children of Vhembe district, Limpopo province. Iron and zinc deficiency in children is associated with poor growth development, alteration in neurological function, immunological response and behaviour changes.