

**PREVALENCE AND ASSOCIATED RISK FACTORS OF
ANAEMIA IN CHILDREN AGED SIX MONTHS TO FIFTEEN
YEARS ADMITTED AT THE UNIVERSITY TEACHING
HOSPITAL, LUSAKA**

By

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**A Dissertation submitted to the University of Zambia in partial fulfilment of the
requirements for the degree of Master of Medicine in Paediatrics and Child Health**

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2019

DECLARATION

I, Muleya Namukolo Inambao hereby declare that this dissertation represents my own work and has not been presented either wholly or in part for a degree at the University of Zambia or any other University.

Date.....

Candidate.....

APPROVAL

This Dissertation by Muleya Namukolo Inambao is approved as partial fulfilment of the the requirement for the award of the degree of Master of Medicine in Paediatrics and Child health by the University of Zambia.

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ABSTRACT

Anaemia is a public health problem globally affecting 293.1 million children and 28.5% of these children are in the sub Saharan Africa. The study was to determine the prevalence of anaemia and the associated risk factors of anaemia in children aged 6 months to 15 years admitted to the University Teaching Hospital. A cross sectional study was conducted from July 2016 to December 2016. A total of 351 children were studied; 45.9% (161/351) were females and 54.1% (190/351) were males ($p=0.5$). The prevalence of anaemia was (45.9%) 161/351. In terms of severity mild, moderate, severe anaemia were 47/161 (29%), 86/161 (53%) and 28/161 (17%) respectively. The age group 6 months to 5 years was the most affected with 25.9% mildly, 55.6% moderately and 18.5% severely anaemic. The associated risk factors studied were malaria, sickle cell disease, malnutrition and HIV infection. Logistic regression analysis revealed that undiagnosed sickle cell disease with haemoglobin-S was the only clinical characteristic independently associated with anaemia (CI-0.2-0.7), p value-0.001. Anaemia is a major health problem at UTH, and the under-five age group is the most affected. Previous undiagnosed sickle cell anaemia trait or disease was the significant clinical feature found to be associated with anaemia in this study. Therefore, improving on early screening for sickle cell disease and scaling up of deworming in the under five children and generally improving the diet of Zambian children should be advocated for. Preventative strategies including early screening of sickle cell disease, screening for anaemia, routine deworming must target all under-fives regardless of their clinical status or haemoglobin levels.

Key words: Anaemia, Prevalence, Risk factors, Zambia, Africa

DEDICATION

This work is dedicated to my son Seke M. E. Kazuma, my daughter Ngambo Lerato Kazuma and my husband Seke Kazuma M. E.

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ABBREVIATIONS

FBC	Full Blood Count
Hb	Haemoglobin
HIV	Human immunodeficiency virus
SCD	Sickle Cell Disease
MCH	Mean Corpuscular Haemoglobin
MCHC	Mean Corpuscular Haemoglobin Concentration
MCV	Mean Corpuscular Volume
RDT	Rapid Diagnostic Test
UTH	University Teaching Hospital
WHO	World Health Organization

DEFINITIONS

1. WHO definition of anaemia in children 6 months to 6 years

Mild anaemia: Hb 10 to 10.9g/dl
Moderate anaemia: Hb 7 to 9.9g/dl
Severe anaemia: Hb less than 7g/dl

2. WHO definition of anaemia in children 6 years to 11 years

Mild anaemia: Hb 10 to 11.4g/dl
Moderate anaemia: Hb 7 to 9.9g/dl
Severe anaemia: Hb less than 7 g/dl

3. WHO definition of anaemia in children 12 years to 14 years

Mild anaemia: Hb 10 to 11.9g/dl
Moderate anaemia: Hb 7 to 9.9g/dl
Severe anaemia: Hb less than 7g/dl

4. Normocytic-Red blood cell with normal amount of colour (80-95 femtoliter)

Mean Cell Volume (MCV): average volume of red blood cells (80-95femtoliter)
Normocytic anaemia: MCV within normal range,80-95 femtoliter
Microcytic anaemia: MCV below 80 femtoliter
Macrocytic anaemia; MCV above 95 femtoliter

5. Hypochromic: Red blood cell with reduced concentration of haemoglobin.

Mean Cell haemoglobin (MCH): mass of haemoglobin per red blood cell in a sample of blood, normal range(27-33picograms).

Mean cell haemoglobin concentration (MCHC): haemoglobin content within the volume of the cell. (33-36g/dl)

6. Malnutrition

Mild malnutrition: weight for height/length between median and -1SD

Moderate malnutrition: weight for height/length between -2SD and -3 SD

Severe malnutrition: presence of bilateral pitting oedema and/or weight for height/length of less than -3SD