

# **PREVALENCE OF HYPERTENSION AND ASSOCIATED FACTORS AMONG CHILDREN AGED 2 TO 5 YEARS ATTENDING OUTPATIENT CLINICS IN DAR ES SALAAM, TANZANIA**

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## **ABSTRACT**

**Background:** Hypertension in children has become a matter of concern and a growing problem around the world. In both developed and developing countries Paediatric hypertension has been underdiagnosed due to little attention even though the risk factors start early in life. This may be associated with late diagnosis and complications. In Tanzania, little data is available on hypertension in children below the age of five years.

**Objective:** To determine the prevalence of hypertension and associated factors among children aged 2 to 5 years attending outpatient clinics in Dar es Salaam.

**Methodology:** This was a hospital-based cross-sectional study design augmented by a brief follow-up period that was conducted among children aged 2 to 5 years from four health facilities in Dar es Salaam from June to July 2022. A structured questionnaire was used to collect socio-demographic characteristics, parental factors, children's factors, and anthropometric measurements. Among the study participants with high blood pressure, blood pressure measurements were taken on three separate occasions to confirm the diagnosis of hypertension. The blood pressure of each child was compared to the standard charts for age, height, and gender of the American Academy of Pediatrics 2017. Descriptive results were analyzed as percentages, means, or medians with standard deviations or interquartile ranges whenever appropriate. Binary logistic regression analysis was used to assess factors associated with hypertension. A  $p$ -value of equal or less than 0.05 was considered statistically significant.

**Results:** A total number 1131 of children who fulfilled eligibility criteria were enrolled in the study out of which 40 (65.4%) were from OPD and 391 (34.6%)

were from RCH. The median age was three years and 568 (50.2%) were males and 563 (49.8%) were females. Among 1131 children; 182 (16.01%) had elevated blood pressure (previously known as pre-hypertension); and 16(1.41%) had hypertension. Low and high birth weight, overweight/obesity, underweight, having a positive history of hypertension, and maternal gestational hypertension were significantly associated with elevated blood pressure { $p$  value= 0.013, 0.004, <0.0001,<0.0001and0.002} respectively. There was no significant gender difference observed among those with high blood pressure.

**Conclusions:** Prevalence of hypertension was found in all age groups of children between 2 to 5 years and in both sexes in this study. The main associated factors for developing hypertension among children were overweight/obesity, underweight, low- and

high-birth weight, maternal gestational hypertension, positive family history of hypertension, and Diabetic Mellitus. Dietary intake of food rich in protein, fruits, and vegetables is a protective factor against developing hypertension among children.

**Recommendations:** 1. Blood pressure should be routinely screened in children attending outpatient clinics and those at risk among the pediatric group (i.e. overweight/obesity, low birth weight, family history of hypertension, and Diabetic mellitus) for early diagnosis and management. 2. Further studies should be conducted using prospective cohort study designs to improve the findings on the risk of childhood hypertension and screen for more factors that were not looked at in this study such as genetic factors and dietary intake.