

## Body mass index and elevated blood pressure among rural South African children in Thohoyandou, South Africa

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**Background:** Whilst there seem to be available data on body mass index (BMI) and elevated blood pressure profiles of South African children, especially in urban areas, few data exist on rural children. The purpose of this study was to determine the relationship between BMI, overweight and blood pressure among rural South African children residing in Thohoyandou, Limpopo province.

**Methods:** Sample included 296 (134 boys and 135 girls) children aged 7-17 years. Body weight and height were measured using standard procedures. Overweight was defined by body mass index (BMI) for gender and age. Blood pressure was monitored in each child thrice using validated electronic devices (Omron HEM-705CP, Device, Tokyo, Japan). Hypertension was determined as the average of three separate blood pressure readings where the systolic or diastolic blood pressure was  $\geq$  90th percentile for age and sex.

**Results:** Overweight were higher in girls (4.7%) compared with the boys (3.9%). In both sexes, overweight increases with age, declining at age 10 in boys, whereas in the girls a decline in overweight was observable at age 12 years. Both systolic and diastolic pressures (SBP and DBP) increase with age in both sexes. The proportion of children with  $>90$ th percentile occur at only ages 12 and 13 years. The incidence of hypertension (SBP $>90$ th percentile) was 0.4% and 0.2% in boys and girls, respectively. The SBP and DBP pressures significantly ( $p<0.05$ ) correlate with age; body mass, height, and BMI.

**Conclusion:** Elevated blood pressure is prevalent among rural South African children residing in this region. Also, blood pressure increased with age in both boys and girls, and this positively correlates with age, body weight, height and BMI. Intervention strategies are needed to reduce overweight in children. There should be routine screening of body weight and blood pressure in children as part of the physical examinations of schoolchildren.

### Biography

Daniel Ter Goon has completed his Ph.D. from Tshwane University of Technology, Pretoria, South Africa. He is a Senior Lecturer, a Level II International Advancement of Kinanthropometry (ISAK) trained anthropometrist. He has published more than 60 papers in reputed journals both nationally and internationally. He is a reviewer of several journals. His research interests include obesity, growth and development.

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