

Reference Values for Blood Pressure of Healthy Sri Lankan Tamil Children in Jaffna District

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Background: Ethnic specific Blood Pressure (BP) values are important to diagnose hypertension in children.

Objective: To establish reference norms for BP of Sri Lankan Tamil children in Jaffna district.

Methods: This is a population based descriptive cross sectional study among 6 to 18 year participants. They were selected by cluster sampling of class rooms. Height, weight, BMI, waist circumference, hip circumference and BP were measured. Tanner scale was used to mark pubertal stage. Ethical clearance was obtained from ERC, Faculty of Medicine, Jaffna.

Results: Participants were 950 boys and 972 girls. Systolic Blood Pressure (SBP) and Diastolic Blood Pressure (DBP) of boys and girls increased from 98/70 and 99/70 to 107/73 and 107/73 until 10 years, decreased slightly up to 13 years (101/64 and 102/63) and increased until 18 years to 119/76 and 111/70. From the age of 15 years, boys had higher SBP and DBP than the girls ($p < 0.05$). The decline up to 13 years is difficult to explain. A normogram for BP was developed based on height percentiles. SBP had positive correlation with pubertal staging. All anthropometric parameters showed significant Pearson correlation ($P < 0.001$) with SBP. Mean SBP and DBP of boys and girls of 6 to 12 years (443 and 528) was $104 \pm 10/70 \pm 9$ and $104 \pm 10/71 \pm 9$ mm Hg respectively. The respective mean values for 13-18 year adolescents (507 and 444) were $111 \pm 13/69 \pm 10$ and $107 \pm 10/67 \pm 9$ mm Hg.

Conclusion: This study established reference values for BP of Sri Lankan Tamil children which can be used clinical practice.