

Prevalence and Determinants of Hypertension in Apparently Normal School children in India: A four-center study

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Introduction: There is increasing interest in blood pressure (BP) in children as it is likely to affect cardiovascular events in later life. Hypertension (HT) in children is often under recognized in developing countries.

Objectives: To study apparently healthy schoolchildren for BP distribution, prevalence of HT and factors determining these.

Methods: The study was conducted in schools located in Haryana (north), Gujarat (west), Manipur, (northeast) and Goa (southwest) states of India. BP of apparently healthy school children of ages 5 to 15 years were recorded in addition to their age, gender, anthropometric parameters, type of school and season of BP measurement. Type of school (government, government-aided or private) was taken as indicator of socio-economic status (SES). Modified recommendations of Fourth report on the diagnosis, evaluation, and treatment of high blood pressure in children and adolescents (Pediatrics 2004) were used for diagnosis of HT.

Results: A total of 14,959 children with mean (+/-SD) age of 10.8 (+/-2.83) years were included. 55.4% were males. Mean (+/-SD) BP was 108 mmHg (+/-12.3) systolic, and 68.6 mmHg (+/- 9.8) diastolic. The overall prevalence of HT (systolic, diastolic or both) was 23%. Systolic HT was present in 13.6%, diastolic HT in 15.3% and both systolic and diastolic HT was present in 5.9% children. Age, gender, weight (but not height), waist circumference, SES and season were predictors of presence of HT on both, univariate and multivariate analysis. HT was more prevalent in younger, female children with higher weight and waist circumference and in winters. HT was less common in children with government-aided (middle SES) schools (prevalence 10%) as compared with government (low SES) (20%) or private (high SES) schools (29%).

Conclusion: There is high prevalence of HT in apparently healthy schoolchildren in India. Regular monitoring of BP and lifestyle modification amongst children should be promoted in order to reduce this prevalence.