

Patterns and Predictors of Elevated Blood Pressure Among Primary School Children in Two Urban Settings in Kenya

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Objectives: We conducted a cross-sectional study to examine the prevalence of elevated blood pressure (BP) among primary school children of different socio-economic status in two urban settings in Kenya and explored the association between elevated BP and children's dietary behaviors and overweight/obesity status.

Methods: The research study was conducted in Nairobi and Kisumu cities in Kenya. Three public schools, catering to children from households at low, medium and high socio-economic status were purposively selected to participate in the study in each city. Data was collected among children within the ages of 10–12 years enrolled in grades 4–6 at each school. Certified clinicians read children's BP readings using an aneroid sphygmomanometer and age-appropriate child BP cuffs. Trained enumerators measured children's weights, heights, waist circumferences and skinfolds. We calculated children's

BP percentiles, BMI-for-age percentiles, waist circumference-for-height ratio (WHtR) and total skinfold values as recommended. Parents, with the help of their respective children, completed questionnaires on children's consumption of fruits, vegetables, red meats and processed meats, fries/crisps, fried/baked wheat products, confectioneries and beverages. Complete data were available for 390 children. We utilized prevalence ratio regression analysis to examine the association between children's BP and dietary practices and obesity.

Results: Over, 20% of the school children had pre-hypertension and 14% had hypertension, giving an overall elevated BP prevalence of 34%. Overweight and obese children were significantly more likely to have elevated BP and hypertension compared to children with healthy BMI-for-age percentiles. Children with WHtR > 0.5 and children with high total skinfold values were significantly more likely to have elevated BP and hypertension compared to children with lower waist circumference and skinfold values. Children who consumed high amounts of fries/crisps were significantly more likely to have elevated BP compared to children who consumed lower amounts.

Conclusions: This study increases our understanding BP patterns and determinants among school children in Kenya, and informs non-communicable disease prevention efforts.

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