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ABSTRACT | Originally Published 4 March 2015 |

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Abstract P167: Adult Stature Components and Systolic Blood Pressure in a Middle Income Country. Evidence from ELSA-Brasil.

Santiago Rodríguez López, Isabela M Bensenor, M. Carmen Molina, and Paulo A Lotufo | AUTHOR INFO & AFFILIATIONS

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Abstract

Introduction: Better childhood conditions -mainly inferred from height and leg length- are usually associated to lower levels of blood pressure during adulthood in high-income countries. However, evidence is mixed about the nature of these associations in low- and middle-income countries. Components of adult height as the total height, trunk and leg lengths, and leg-to-trunk ratio are important surrogate variables of early life conditions of growth and development of one individual.

Hypothesis: We assessed the hypothesis that early life conditions affect blood pressure during adulthood differently according to gender in the middle-income country like Brazil.

Methods: From 15105 participants aged 35-74 years enrolled in the Brazilian Longitudinal Study of Adult Health (ELSA-Brasil), we analyzed 13571 with information about components of height and systolic and diastolic blood pressures. Trained nurses performed all measures following a common protocol at each clinical research site with good reliability. Potential confounders were age, race, maternal education, participant education, waist circumference, weight change since age 20, smoking habit, alcohol consumption, physical activity, and use of anti-hypertensive medication. Multiple linear regression was applied for inference of associations among these variables. The results are from the full model of adjustment.

Results: Younger individuals were taller and had longer trunks and legs. White individuals have longer trunks and shorter legs compared to black participants. People whose mothers with lower education have shorter trunks and legs compared to those with a higher educational maternal background. For each 1-standard-deviation (1-SD) of total height, there was a decrease of systolic blood pressure (mm Hg) of -0.803 (-1.226 to -0.380) for men, and -0.983 (-1.335 to -0.631) for women. For leg length (1-SD) there was an inverse correlation of systolic diastolic blood (mm Hg) among men by -0.444 (-0.880 to -0.009) and -0.915 (-1.284 to -0.546) among women. Trunk length (1-SD) was inversely associated to systolic blood pressure (mm Hg) among men by -0.444 (-0.880 to -0.009) but not among women by -0.191 (-0.597 to 0.214). Leg-to-trunk ratio was inversely associated to systolic blood pressure among women, -0.669 (-1.014 to -0.324) but not among men, -0.182 (-0.583; 0.218). A "post-hoc" analysis revealed that the inverse association of height-systolic blood pressure was more pronounced for participants who are White, with a college degree and who had a mother with high educational background.

Conclusion: The protective effect of the components of height on adult blood pressure reported in high-income countries is also present in a middle-income country like Brazil with few variations according to gender.

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