

Publication

Practice Change Needed for the Identification of Pediatric Hypertension in Marginalized Populations: An Example From South Africa

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Author(s) Arnaiz, Patricia; Müller, Ivan; Seelig, Harald; Gerber, Markus; Bosma, Jacob; Dolley, Danielle; Adams, Larissa; Degen, Jan; Gall, Stefanie; Joubert, Nandi; Nienaber, Madeleine; Nqweniso, Siphesihle; Aerts, Ann; Steinmann, Peter; du Randt, R.; Walter, C.; Utzinger, Jürg; Pühse, Uwe

Author(s) at UniBasel [Arnaiz Jimenez, Patricia](#) ; [Müller, Ivan](#) ; [Seelig, Harald](#) ; [Gerber, Markus](#) ; [Degen, Jan](#) ; [Joubert, Nandi](#) ; [Pühse, Uwe](#) ; [Steinmann, Peter](#) ; [Utzinger, Jürg](#) ;

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Introduction: Hypertension in children has increased globally over the past 20 years; yet, little is known about this issue among disadvantaged communities from low- and middle-income countries. Age-, sex-, and height-adjusted normative tables are the "gold" standard for the diagnosis and estimation of pediatric hypertension worldwide, but it is unclear whether the use of international standards is appropriate for all contexts. The purpose of this study was to evaluate and compare different international references to identify hypertension among South African school-aged children from disadvantaged communities. Methods: Blood pressure, weight, and height were measured in a cohort of 897 children aged 8-16 years from eight peri-urban schools in the Eastern Cape of South Africa. Cross-sectional prevalence of hypertension was calculated according to American, German, and global normative tables, as well as pseudo-normative data from the own study population. Isolated systolic hypertension and body mass index (BMI) were considered markers for cardiovascular disease. Multinomial logistic regression was used to compare the likelihood of blood pressure categorization with increasing BMI levels. Results: Hypertension prevalence ranged from 11.4% with the pseudo-normative study tables to 28.8% based on the German reference. Global guidelines showed the highest agreement both among international standards (92.5% with American guidelines) and with the study reference (72.5%). While the global and the American references presented higher systolic over diastolic hypertension rates (23.6 vs. 10.6% and 24.2 vs. 14.7%, respectively), the American guidelines predicted the highest increased risk for hypertension stage 2 [odds ratio, 1.72 (95% confidence interval: 1.43-2.07)] with raising levels of BMI. Conclusion: Our results support the heterogeneity of blood pressure estimates found in the South African literature, and highlight the underrepresentation of African children in international guidelines. We call for caution in the use of international standards in different contexts and advocate for the development of normative tables that are representative of the South African pediatric population necessary to ensure an accurate identification of hypertension both from the clinical and epidemiological perspective.

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