

Hypertension in Indigenous Brazilians: A Rapidly Emerging Public Health Crisis

Allan K. N. Alencar¹

Department of Biomedical Engineering, Tulane University,¹ New Orleans, LA – USA

Short Editorial related to the article: Prevalence of Systemic Arterial Hypertension and Associated Factors in Indigenous Treated at a Specialized Outpatient Clinic in Southern Brazil

The increasing burden of systemic arterial hypertension among Brazil's Indigenous populations is a clear indicator of the country's ongoing epidemiological transition, marked by a shift from infectious diseases and malnutrition to non-communicable chronic diseases (NCDs) such as hypertension. In the recent study by Araújo et al.,¹ conducted in a specialized outpatient clinic for Indigenous health in Passo Fundo (RS), 26.0% of Indigenous adults were found to be hypertensive. This prevalence is consistent with previous reports from other Indigenous populations in Brazil, such as those from the Xingu Indigenous Park (26.7%) and the Upper Rio Negro region (29.0%),² suggesting that the findings reflect a broader national trend of increasing cardiovascular risk among Indigenous communities. Multiple studies highlight this transition, noting that Indigenous communities are experiencing rising rates of hypertension and other cardiometabolic conditions as a result of rapid cultural, economic, and lifestyle changes, including urbanization, dietary shifts, and increased interaction with non-Indigenous society.³⁻⁶ National surveys confirm the emergence of obesity, hypertension, and diabetes in a growing number of Indigenous communities across all regions of Brazil, further underscoring the epidemiological transition.^{7,8} Once considered virtually absent in these communities, hypertension is now emerging as a critical health concern, with prevalence rates approaching or even surpassing national averages.

The study by Araújo et al.¹ adds nuance to this epidemiological picture by identifying factors independently associated with hypertension: age ≥ 60 years, having a spouse, and diabetes mellitus. The finding that 58% of older individuals in this population are hypertensive is especially troubling when juxtaposed with demographic data showing that only 20.1% of Indigenous people in Rio Grande do Sul are over 60 years old.² This suggests a high disease burden among the elderly and reinforces the urgency of implementing age-specific preventive strategies.

An intriguing aspect of the study is the association between marital status and hypertension. Contrary to

conventional epidemiological literature, where marriage is often considered protective against cardiovascular disease via social support mechanisms,⁹ this study found that having a spouse was associated with a 1.61-fold higher prevalence of hypertension. This divergence may reflect unique sociocultural or economic pressures within Indigenous households that merit further qualitative investigation.

The strong link with diabetes mellitus (prevalence ratio = 2.33) also aligns with the growing body of evidence on the convergence of metabolic disorders among Indigenous populations.¹⁰⁻¹² Shared pathophysiological pathways, such as insulin resistance and chronic inflammation, may contribute to the heightened cardiovascular risk, particularly in the context of poor access to culturally competent primary care.

Beyond individual risk factors, structural and systemic determinants must also be addressed. Health inequalities affecting Indigenous communities in Brazil are deeply rooted in historical marginalization, geographic isolation, and under-resourced health services.¹³ The National Policy for Comprehensive Indigenous Health (PNASPI) has made strides in establishing differentiated care models, yet gaps remain in chronic disease prevention, screening, and continuity of care.¹⁴ Strengthening primary healthcare, through mobile clinics, community health agents, and integration of traditional healing practices, will be key to reversing these trends.¹⁵

The findings by Araújo et al.¹ further support the call for longitudinal and community-based studies to assess the true burden of hypertension and other NCDs in Indigenous populations. Future research should explore the influence of dietary sodium, psychosocial stress, and environmental degradation, including threats to traditional food systems and water access, as potential contributors to cardiovascular risk.²

In conclusion, hypertension is no longer an exception but a looming epidemic within Brazil's Indigenous populations. The study by Araújo et al.¹ makes it unmistakably clear: the epidemiological transition is not a distant forecast; it is already unfolding. What is now urgently required is a coordinated national response that integrates culturally tailored prevention, evidence-based clinical care, and sustained investment in Indigenous health infrastructure. Anything less risks deepening historical inequities and failing a population that can no longer wait.

Keywords

Health of Indigenous Peoples; Hypertension; Health Status Disparities; Heart Disease Risk Factors; Health Transition.

Mailing Address: Allan K. N. Alencar •

Department of Biomedical Engineering, Tulane University, 500 Lindy Boggs Center, New Orleans, LA, 70118 - SUA

E-mail: allankdc@gmail.com

Manuscript received August 07, 2025, revised manuscript August 13, 2025, accepted August 13, 2025

DOI: <https://doi.org/10.36660/abc.20250567i>

References

1. Araújo JM, Tuzzin L, Borges DT, Polettini J, Rabello RS, Acrani GO, et al. Prevalence of Systemic Arterial Hypertension and Associated Factors in Indigenous Treated at a Specialized Outpatient Clinic in Southern Brazil. *Arq Bras Cardiol*. 2025; 122(9):e20250269. doi: <https://doi.org/10.36660/abc.20250269i>.
2. Gimeno SG, Rodrigues D, Canó EN, Lima EE, Schaper M, Pagliaro H, et al. Cardiovascular Risk Factors Among Brazilian Karib Indigenous Peoples: Upper Xingu, Central Brazil, 2000-3. *J Epidemiol Community Health*. 2009;63(4):299-304. doi: [10.1136/jech.2008.077966](https://doi.org/10.1136/jech.2008.077966).
3. Souza ZA Filho, Ferreira AA, Santos J, Meira KC, Pierin AMG. Cardiovascular Risk Factors with an Emphasis on Hypertension in the Mura Indians from Amazonia. *BMC Public Health*. 2018;18(1):1251. doi: [10.1186/s12889-018-6160-8](https://doi.org/10.1186/s12889-018-6160-8).
4. Kramer CK, Leitão CB, Viana LV. The Impact of Urbanisation on the Cardiometabolic Health of Indigenous Brazilian Peoples: A Systematic Review and Meta-Analysis, and Data from the Brazilian Health Registry. *Lancet*. 2022;400(10368):2074-83. doi: [10.1016/S0140-6736\(22\)00625-0](https://doi.org/10.1016/S0140-6736(22)00625-0).
5. Souza ZA Filho, Ferreira AA, Santos BD, Pierin AM. Hypertension Prevalence Among Indigenous Populations in Brazil: A Systematic Review with Meta-Analysis. *Rev Esc Enferm USP*. 2015;49(6):1016-26. doi: [10.1590/S0080-623420150000600019](https://doi.org/10.1590/S0080-623420150000600019).
6. Baniwa EJE, Sacuena ERP, Noce RRD, Quaresma VB, Alencar TH, Lemes RB, et al. Fourteen-Year Trends in Overweight, General Obesity, and Abdominal Obesity in Amazonian Indigenous Peoples. *BMC Public Health*. 2024;24(1):1210. doi: [10.1186/s12889-024-18689-2](https://doi.org/10.1186/s12889-024-18689-2).
7. Coimbra CE Jr, Santos RV, Welch JR, Cardoso AM, Souza MC, Garnelo L, et al. The First National Survey of Indigenous People's Health and Nutrition in Brazil: Rationale, Methodology, and Overview of Results. *BMC Public Health*. 2013;13:52. doi: [10.1186/1471-2458-13-52](https://doi.org/10.1186/1471-2458-13-52).
8. Brasil. Ministério da Saúde. Perfil Demográfico e Epidemiológico dos Povos Indígenas no Brasil. Brasília: Ministério da Saúde; 2022.
9. Robles TF, Kiecolt-Glaser JK. The Physiology of Marriage: Pathways to Health. *Physiol Behav*. 2003;79(3):409-16. doi: [10.1016/s0031-9384\(03\)00160-4](https://doi.org/10.1016/s0031-9384(03)00160-4).
10. Mendoza-Caamal EC, Barajas-Olmos F, García-Ortiz H, Cicerón-Arellano I, Martínez-Hernández A, Córdova EJ, et al. Metabolic Syndrome in Indigenous Communities in Mexico: A Descriptive and Cross-Sectional Study. *BMC Public Health*. 2020;20(1):339. doi: [10.1186/s12889-020-8378-5](https://doi.org/10.1186/s12889-020-8378-5).
11. Godfrey TM, Cordova-Marks FM, Jones D, Melton F, Breathett K. Metabolic Syndrome among American Indian and Alaska Native Populations: Implications for Cardiovascular Health. *Curr Hypertens Rep*. 2022;24(5):107-14. doi: [10.1007/s11906-022-01178-5](https://doi.org/10.1007/s11906-022-01178-5).
12. McKay CD, O'Bryan E, Gubhaju L, McNamara B, Gibberd AJ, Azzopardi P, et al. Potential Determinants of Cardio-Metabolic Risk among Aboriginal and Torres Strait Islander Children and Adolescents: A Systematic Review. *Int J Environ Res Public Health*. 2022;19(15):9180. doi: [10.3390/ijerph19159180](https://doi.org/10.3390/ijerph19159180).
13. Montenegro RA, Stephens C. Indigenous Health in Latin America and the Caribbean. *Lancet*. 2006;367(9525):1859-69. doi: [10.1016/S0140-6736\(06\)68808-9](https://doi.org/10.1016/S0140-6736(06)68808-9).
14. Carlos EA Jr. Health and Indigenous Peoples in Brazil: Reflections Based on the First National Survey of Indigenous People's Health and Nutrition. *Cad Saude Publica*. 2014;30(4):855-9. doi: [10.1590/0102-311x00031214](https://doi.org/10.1590/0102-311x00031214).
15. Langdon EJ, Wiik FB. Anthropology, Health and Illness: An Introduction to the Concept of Culture Applied to the Health Sciences. *Rev Lat Am Enfermagem*. 2010;18(3):459-66. doi: [10.1590/s0104-11692010000300023](https://doi.org/10.1590/s0104-11692010000300023).



This is an open-access article distributed under the terms of the Creative Commons Attribution License