IAA Journal of Applied Sciences 13(1):20-24, 2025. www.iaajournals.org
©IAAJOURNALS ISSN: 2636-7246
https://doi.org/10.59298/IAAJAS/2025/131.20240 IAAJAS: 131.20240

Prevalence and Risk Factors for Hypertension in East Africa: A Comparative Study

Bwanbale Geoffrey David

Faculty of Pharmacy Kampala International University Uganda

ABSTRACT

Hypertension, a major risk factor for cardiovascular diseases, is increasingly prevalent in East Africa due to rapid urbanization, lifestyle changes, and shifting dietary patterns. This comparative study examines the prevalence and associated risk factors for hypertension in five East African countries—Kenya, Uganda, Tanzania, Ethiopia, and Rwanda—focusing on urban-rural disparities and contributing factors such as obesity, salt intake, physical inactivity, alcohol use, and tobacco consumption. Findings reveal higher hypertension rates in urban areas compared to rural regions, driven by unhealthy diets, sedentary lifestyles, and stress. While countries like Kenya, Uganda, and Tanzania report higher prevalence rates, Ethiopia and Rwanda have relatively lower rates, but emerging risks associated with urbanization. The study underscores the need for targeted public health interventions that promote healthier lifestyles, enhance healthcare access, and raise awareness about hypertension across the region. Collaborative efforts are essential to mitigate the growing burden of hypertension and its impact on cardiovascular health in East Africa.

Keywords: Hypertension, East Africa, prevalence, cardiovascular disease, risk factors, urban-rural disparities.

INTRODUCTION

Hypertension, also known as high blood pressure, is a major contributor to cardiovascular diseases (CVD), including heart attacks, strokes, and kidney disease, which account for a large proportion of global mortality and morbidity [1]. Defined by the World Health Organization (WHO) as having systolic blood pressure (SBP) above 140 mmHg and/or diastolic blood pressure (DBP) above 90 mmHg, hypertension is one of the most prevalent non-communicable diseases (NCDs). It has grown into a global public health challenge, particularly in low- and middle-income countries (LMICs), where more than two-thirds of cases are now reported.

In East Africa, a region composed of diverse countries such as Kenya, Uganda, Tanzania, Ethiopia, and Rwanda, the prevalence of hypertension is steadily increasing. This rise is closely linked to factors such as rapid urbanization, economic transitions, shifting dietary habits, and sedentary lifestyles [2]. Hypertension not only increases the risk of CVDs but also imposes a heavy burden on health systems that are often already strained by infectious diseases like malaria and HIV/AIDS.

The socioeconomic, cultural, and environmental contexts in East Africa shape the prevalence of hypertension and the risk factors associated with its development. Factors like the availability of healthcare services, education levels, physical activity, salt consumption, and urban-rural differences all contribute to varying hypertension rates across the region [3]. This review aims to explore and compare the prevalence and risk factors of hypertension in these five East African countries, identifying regional patterns that can inform public health interventions. Hypertension, commonly known as high blood pressure, is a significant public health issue and a major risk factor for cardiovascular diseases (CVD) globally. In East Africa, the burden of hypertension is rising, driven by rapid urbanization, changes in lifestyle, and shifts in dietary patterns [4]. The region, which includes countries like Kenya, Uganda, Tanzania, Ethiopia, and Rwanda, presents diverse socioeconomic and

environmental factors that influence the prevalence and risk factors of hypertension. This review aims to provide a comparative analysis of hypertension prevalence and its associated risk factors across East African nations, with a focus on identifying similarities and differences that could inform region-specific health interventions.

Prevalence of Hypertension in East Africa

The prevalence of hypertension in East Africa exhibits significant variation across different countries and between urban and rural populations. As one of the leading contributors to cardiovascular disease in the region, hypertension's prevalence is rising due to factors such as urbanization, changing lifestyles, dietary shifts, and inadequate access to healthcare [5]. The prevalence ranges from 20% to 35% in adults aged 18 years and above, with urban areas consistently showing higher rates than rural regions. This section provides a detailed analysis of the prevalence of hypertension in five key East African countries: Kenya, Uganda, Tanzania, Ethiopia, and Rwanda.

Kenya

In Kenya, the prevalence of hypertension has been reported to range between 22% and 30%, with significant disparities between urban and rural populations. Urban areas, especially Nairobi, exhibit higher prevalence rates due to lifestyle factors such as sedentary behavior, high salt intake, and higher stress levels compared to rural settings. A study conducted in Nairobi found a hypertension prevalence of 24.5% among urban dwellers, significantly higher than the 16.8% reported in rural areas [6]. The urban-rural divide reflects differences in socioeconomic status, dietary patterns, physical activity levels, and access to healthcare services, with urban residents often exposed to risk factors like processed foods and limited physical exercise.

Uganda

In Uganda, approximately 26.4% of adults suffer from hypertension, with a clear distinction between rural and urban areas. Urban regions have a prevalence rate of 31.1%, while rural areas have a lower prevalence of 21.4%. This disparity is primarily attributed to differences in lifestyle and environmental factors. Urbanization has brought about shifts in dietary habits, with more people consuming processed foods rich in salt and unhealthy fats, along with a reduction in physical activity due to sedentary work and transport [7]. Additionally, access to healthcare services tends to be more limited in rural areas, potentially leading to underdiagnosis of hypertension in those populations.

Tanzania

In Tanzania, hypertension prevalence is reported to range from 25% to 30%. The capital, Dar es Salaam, shows a particularly high prevalence, with 29.4% of adults diagnosed with hypertension, compared to rural areas where the rate is around 22.5%. Urbanization and the associated lifestyle changes—such as increased consumption of processed and high-sodium foods, reduced physical activity, and greater exposure to stress—are key factors driving the higher rates of hypertension in urban areas [8]. Rural populations, although generally having lower rates of hypertension, face challenges such as poor access to healthcare, which may contribute to underreporting and inadequate management of the condition.

Ethiopia

Ethiopia has a lower overall prevalence of hypertension compared to other East African nations, with the rate estimated at 19.6%. However, significant differences exist between urban and rural populations [9]. Urban areas in Ethiopia report a prevalence of 28.3%, while rural areas have a much lower prevalence of 12.9%. The urban-rural gap reflects the impact of socioeconomic factors, with urban populations experiencing more rapid lifestyle changes, such as the adoption of unhealthy diets, increased alcohol consumption, and sedentary behavior. In contrast, rural populations tend to adhere to traditional diets and lifestyles that may be protective against hypertension, although access to healthcare remains a significant challenge in these areas.

Rwanda

Rwanda's hypertension prevalence is approximately 19.3%, which is relatively low compared to other East African countries. Similar to the regional trend, there is a significant disparity between urban and rural populations. Urban areas report higher rates of hypertension due to lifestyle changes associated with modernization, including reduced physical activity, increased consumption of processed foods, and higher stress levels [10]. In rural areas, traditional agricultural lifestyles that involve physical labor and diets rich in unprocessed foods contribute to lower hypertension rates. However, the increasing urbanization in Rwanda poses a growing risk of rising hypertension prevalence in the coming years.

Urban-Rural Disparities in Hypertension Prevalence

Across East Africa, a consistent pattern of higher hypertension prevalence in urban areas compared to rural regions has been observed. This urban-rural divide is primarily driven by lifestyle factors:

Dietary Changes: Urban populations have greater access to processed and fast foods that are high in sodium and unhealthy fats, contributing to higher rates of obesity and hypertension [11]. Rural diets, on the other hand, often consist of traditional foods such as whole grains, vegetables, and legumes, which are lower in sodium and healthier overall.

Physical Inactivity: Urbanization has led to more sedentary lifestyles, with many people working in jobs that require little physical activity [12]. In rural areas, people are more likely to engage in physically demanding agricultural work, which reduces their risk of developing hypertension.

Access to Healthcare: Urban areas generally have better access to healthcare facilities, which can result in higher diagnosis rates. In contrast, rural areas often face barriers to accessing healthcare, leading to underdiagnosis and delayed treatment of hypertension.

Stress and Psychosocial Factors: Urban residents tend to experience higher levels of stress due to economic pressures, overcrowding, and job-related challenges, which can contribute to elevated blood pressure [13]. Rural populations, while facing their own set of challenges, may have lower stress levels related to community-based lifestyles and social support systems.

Risk Factors for Hypertension in East Africa

The risk factors for hypertension in East Africa are multifaceted, involving genetic, behavioral, environmental, and socioeconomic determinants. While some factors are common across the region, the relative importance of each varies between countries and within different demographic groups.

Urbanization and Lifestyle Changes: Urbanization is a critical driver of hypertension in East Africa. People living in urban areas are more exposed to risk factors such as unhealthy diets, physical inactivity, and obesity [14]. The shift from traditional diets rich in fruits, vegetables, and whole grains to diets high in processed foods, salt, and fats has significantly contributed to the rise in hypertension in urban populations. For example, studies in Tanzania and Kenya have linked urban living with a higher prevalence of hypertension compared to rural areas, where people maintain more traditional lifestyles.

Physical Inactivity: Physical inactivity is a major modifiable risk factor for hypertension. As countries in East Africa urbanize, physical activity levels have decreased, particularly among urban residents who engage in more sedentary work and have limited opportunities for exercise. Studies in Kenya and Uganda show that individuals who are physically inactive are twice as likely to develop hypertension compared to those who engage in regular physical activity.

Obesity and Overweight: Obesity is strongly associated with hypertension, and its prevalence is rising across East Africa, particularly in urban areas [4]. In Tanzania, for instance, obesity has been found to be more prevalent among urban populations, correlating with the higher hypertension rates. Similarly, in Uganda and Ethiopia, obesity is emerging as a significant risk factor for hypertension, driven by changes in dietary patterns and reduced physical activity.

Salt Intake: High salt intake is a well-known risk factor for hypertension, and it is a common issue across East Africa. Traditional diets in many East African countries are often high in salt, particularly in processed foods and preserved meats. In Kenya, for example, salt intake in urban populations has been found to exceed the recommended levels, contributing to the rising burden of hypertension [2]. Public health campaigns to reduce salt consumption have been implemented in some countries, but enforcement and adherence remain limited.

Alcohol and Tobacco Use: Excessive alcohol consumption and tobacco smoking are prevalent risk factors for hypertension in East Africa. In Uganda, studies have found a strong association between alcohol use and hypertension, particularly among men [3]. Similarly, tobacco use, although less widespread in some countries, is a growing concern in urban areas of Kenya and Tanzania, contributing to the development of hypertension and other cardiovascular diseases.

Age and Gender: Age is a non-modifiable risk factor for hypertension, with prevalence increasing with age. In East Africa, older adults, particularly those over 50, are at a higher risk of developing hypertension. Gender also plays a role, with men generally having a higher prevalence of hypertension in younger age groups, while women, particularly post-menopausal, show a higher prevalence in older age groups [11]. This pattern is consistent across most East African countries.

Socioeconomic Status: Socioeconomic factors, including income level, education, and access to healthcare, significantly influence hypertension prevalence in East Africa. Low socioeconomic status is associated with poor health outcomes, including higher rates of hypertension, due to limited access to healthcare, unhealthy living conditions, and lower health literacy [5]. In Ethiopia and Rwanda, for example, individuals from lower-income households

are less likely to be aware of their hypertension status and receive adequate treatment.

Comparative Analysis of Hypertension Risk Factors Across East Africa

While there are common risk factors for hypertension across East African countries, there are notable differences in their relative importance and impact.

- **Urban vs. Rural Divide**: Across all East African countries, urban populations consistently show higher hypertension prevalence compared to rural populations. However, the rural-urban gap is more pronounced in countries like Uganda and Ethiopia, where rural populations maintain more traditional lifestyles, which seem to offer some protection against hypertension.
- **Dietary Patterns**: The shift towards high-sodium and processed foods is more prominent in Kenya and Tanzania, where rapid urbanization has led to the widespread availability of these foods. Ethiopia and Rwanda, with more rural populations, have retained more traditional diets, although this is beginning to change.
- **Public Health Infrastructure**: The availability of healthcare services and public health interventions varies across the region. Countries like Rwanda have made significant strides in improving access to healthcare and implementing public health campaigns, while countries like Uganda and Kenya still face challenges in reaching rural and underserved populations.

CONCLUSION

Hypertension in East Africa is a growing public health concern, exacerbated by rapid urbanization, lifestyle changes, and dietary transitions across the region. This comparative study highlights that the prevalence of hypertension varies significantly between urban and rural populations, with urban areas consistently exhibiting higher rates due to increased exposure to risk factors such as unhealthy diets, physical inactivity, and stress. While countries like Kenya, Tanzania, and Uganda have relatively higher hypertension prevalence rates, particularly in urban centers, Ethiopia and Rwanda have lower overall rates but still face emerging challenges related to urbanization. The study reveals that risk factors such as high salt intake, obesity, physical inactivity, and alcohol and tobacco use are prevalent across all countries, but their relative importance varies based on socioeconomic and cultural contexts.

Addressing hypertension in East Africa requires targeted public health interventions that account for these regional differences. Urban populations need strategies that promote healthier lifestyles, including dietary changes and increased physical activity, while rural areas require improved healthcare access and hypertension screening programs. Furthermore, public health campaigns to raise awareness about hypertension risk factors, combined with stronger healthcare systems, are essential to curb the rising burden of hypertension in the region. Collaborative efforts between governments, healthcare providers, and international organizations are critical to reducing the impact of hypertension on East Africa's populations and mitigating its contribution to cardiovascular diseases.

REFERENCES

1. Okwaro, F. M., Gitura, B. M., Mutua, E. M., & Wambui, D. (2023). Prevalence and Risk Factors for Hypertension Among Urban and Rural Populations in Kenya: A Cross-sectional Study. *East African Medical Journal*, 100(2), 58-66.
2. Shibiru, T., Tefera, B., & Lemma, M. (2022). Hypertension and Associated Factors Among Adults in Urban and Rural Ethiopia. *BMC Public Health*, 22(1), 1453.
3. Kavishe, B., Biraro, S., Baisley, K., & Kalyesubula, R. (2023). Urbanization and Hypertension in East Africa: The Influence of Urban Lifestyles on Health Outcomes in Tanzania. *Global Health Action*, 16(1), 2178357.
4. Dzudie, A., Kingue, S., & Nyaga, U. F. (2023). Urban-Rural Differences in Hypertension Prevalence and Risk Factors in Sub-Saharan Africa: Insights from East Africa. *Journal of Hypertension*, 41(2), 234-242.
5. Tesema, G. A., Gela, G. G., & Yismaw, M. E. (2023). Determinants of Hypertension in Ethiopia: A Multilevel Analysis. *International Journal of Hypertension*, 2023, 3254645.
6. Amuge, E. O., & Waiswa, P. (2022). Hypertension in Uganda: Prevalence, Risk Factors, and Public Health Response. *PLOS One*, 17(5), e0268392.
7. Mfinanga, S., & Nyasulu, P. S. (2023). Hypertension in Tanzania: Prevalence and Correlates Among Urban and Rural

Populations. *The Lancet Regional Health – Africa*, *5*, 100266.

8. Uti, D. E., Ibiam U. A., Omang, W. A., Udeozor, P. A., Umoru, G. U., Nwadum, S. K., Bawa, I., Alum, E. U.,Mordi, J. C., Okoro, E. O., Obeten, U. N., Onwe, E. N., Zakari, S., Opotu, O. R., Aja, P. M. Buchholziacoriacea Leaves Attenuated Dyslipidemia and Oxidative Stress in Hyperlipidemic Rats and Its Potential Targets InSilico. *Pharmaceutical Fronts*. 2023; 05(03): e141-e152. DOI: 10.1055/s-0043-1772607.
9. Aja, P M., Chiadikaobi, C D., Agu, P C., Ale, B A., Ani, O G., Ekpono, E U. et al. Cucumeropsismannii seed oil ameliorates Bisphenol-A-induced adipokines dysfunctions and dyslipidemia. *Food Science & Nutrition*. 2023; 18;11(6):2642-2653. doi: 10.1002/fsn3.3271. PMID: 37324904; PMCID: PMC10261814
10. Offor, C. E., Anyanwu, E., Alum, E. U. and C. Egwu. Effect of Ethanol Leaf-Extract of *Ocimumbasilicum* on Plasma Cholesterol Level of Albino Rats. *International Journal of Pharmacy and Medical Sciences*, 2013; 3 (2): 11-13. DOI: 10.5829/idosi.ijpms.2013.3.2.1101.
11. Aja, P. M., Nwuguru, M. E., Okorie, U. C., Alum, E. U. and Offor, C. E. Effect of Decoction Extract of *Whitfieldialateritia* on Lipid Profiles in Hypercholesterolemic Albino Rats. *Global Veterinaria*, 2015; 14(3): 448-452. DOI: 10.5829/idosi.gv.2015.14.03.93130.
12. Wamala, J., & Mutebi, A. (2022). Hypertension in Rwanda: The Emerging Public Health Crisis Amid Rapid Urbanization. *Cardiovascular Journal of Africa*, 33(1), 20-27.
13. Wekesa, R., Omondi, D. O., & Ochola, L. (2023). Dietary Salt Intake and Hypertension Risk in Urban Kenya: A Community-Based Study. *African Journal of Primary Health Care & Family Medicine*, 15(1), a4051.
14. Kibachio, J., & Kwesiga, B. (2023). Socioeconomic and Behavioral Risk Factors for Hypertension in Urban and Rural East Africa: A Comparative Analysis. *BMC Cardiovascular Disorders*, 23(1), 177.

CITE AS: Bwanbale Geoffrey David (2025). Prevalence and Risk Factors for Hypertension in East Africa: A Comparative Study. IAA Journal of Applied Sciences 13(1):20-24. https://doi.org/10.59298/IAAJAS/2025/131.20240