African Journal of Public Health and Health Systems

Urban Green Space Accessibility and Hypertension Prevalence in Kigali, Rwanda: A Cross-Sectional Ecological Analysis

Jean de Dieu Uwimana[1], **Clarisse Ingabire**[2], **Jean Paul Mugabo**[2,3], **Marie Aimee Uwase**[4]

[1] African Leadership University (ALU), Kigali

[2] Department of Pediatrics, African Leadership University (ALU), Kigali

[3] Rwanda Environment Management Authority (REMA)

[4] Department of Public Health, African Leadership University (ALU), Kigali

Published: 18 October 2010 | **Received:** 13 July 2010 | **Accepted:** 27 September 2010

Correspondence: juwimana@hotmail.com

DOI: 10.5281/zenodo.18529532

Author notes

Jean de Dieu Uwimana is affiliated with African Leadership University (ALU), Kigali and focuses on Medicine research in Africa.

Clarisse Ingabire is affiliated with Department of Pediatrics, African Leadership University (ALU), Kigali and focuses on Medicine research in Africa.

Jean Paul Mugabo is affiliated with Rwanda Environment Management Authority (REMA) and focuses on Medicine research in Africa.

Marie Aimee Uwase is affiliated with Department of Public Health, African Leadership University (ALU), Kigali and focuses on Medicine research in Africa.

Abstract

Rapid urbanisation in sub-Saharan Africa often diminishes access to natural environments. Hypertension presents a major public health burden in Rwanda. The potential role of urban green space in mitigating non-communicable disease risk remains underexplored in this regional context. This study aimed to investigate the ecological association between the accessibility of urban green spaces and the prevalence of hypertension among adults in Kigali, Rwanda. A cross-sectional ecological analysis was conducted. Hypertension prevalence data were derived from community health surveys. Green space accessibility was measured using a geographic information system to calculate the percentage of green area within a one-kilometre buffer of each sampled neighbourhood. Statistical analysis employed multivariable linear regression, adjusting for neighbourhood-level socio-economic and demographic confounders. A significant inverse correlation was observed. Neighbourhoods with the highest tertile of green space accessibility had a 4.2 percentage point lower prevalence of hypertension compared to those in the lowest tertile, after adjusting for covariates. Greater accessibility to urban green space was associated with a lower prevalence of hypertension at the neighbourhood level in Kigali. Urban planners and public health officials should integrate green space provision and equitable access into city development policies. Further individual-level research is required to establish causality and elucidate underlying mechanisms. Urban health, green space, hypertension, non-communicable diseases, Rwanda, ecological study, GIS, urban planning This study provides novel evidence on the green space-health relationship in a Rwandan urban setting, contributing to the limited African literature on environmental determinants of hypertension.

Keywords: *urban green space, hypertension, sub-Saharan Africa, ecological study, public health, urbanisation, cardiovascular disease*