The Impact of Urbanization on Traditional Medicinal Plant Accessibility: A Case Study of Bukusu Healers in Bungoma County, Kenya

DAVID SIMIYU WALUBENGO[1], MARGARET MATISI[2], JULIUS ONGONG'A[3]
[1,2] *Department of Social Sciences, Kibabii University, Kenya*
[3] *Department of Philosophy and Religious Studies, Kenyatta University, Kenya*

Abstract- ***Traditional medicine systems worldwide face unprecedented challenges from rapid urbanization, with indigenous healing practices particularly vulnerable to environmental degradation and habitat loss. This study assessed how urbanization influences the accessibility of traditional medicinal plants used by Bukusu healers in Bungoma County, Kenya. Using an ethnographic research design, data were collected from 100 participants including modern medical practitioners (n=28), Bukusu community members (n=48), traditional healers (n=17), and key informants (n=7) through questionnaires, interviews, and focus group discussions. Results revealed that 86% of respondents agreed that urbanization has negatively affected medicinal plant availability, with 87% attributing this to habitat destruction from urban development. Traditional healers reported traveling 15-30 kilometers to access plants previously available locally, while 91% of participants emphasized the critical need for medicinal plant conservation. The study concludes that urbanization poses significant threats to traditional healing sustainability through biodiversity loss and cultural knowledge erosion.***

Indexed Terms- ***Urbanization, Traditional Medicine, Medicinal Plants, Bukusu Healers***

I. INTRODUCTION

Traditional medicine systems serve as primary healthcare resources for approximately 80% of the global population, with indigenous knowledge systems representing millennia of accumulated wisdom about medicinal plant properties (WHO, 2019). In Kenya, traditional healing practices remain deeply embedded in cultural frameworks, providing both medical and spiritual care for millions, particularly in rural communities where modern healthcare access is limited. The Bukusu community of Bungoma County represents one such indigenous group whose traditional healing system, led by practitioners known as *bamûni*, has sustained community health for generations through sophisticated knowledge of local medicinal flora.

However, rapid urbanization across sub-Saharan Africa has created unprecedented pressures on traditional medicine systems, particularly through the destruction of natural habitats that support medicinal plant diversity. Urban expansion, agricultural intensification, and infrastructure development have systematically reduced the ecological foundations upon which traditional healing depends, creating "medicinal plant deserts" in previously biodiversity-rich areas (Arjona-García et al., 2021).

Bungoma County exemplifies these challenges, with a population of approximately 1.7 million people experiencing rapid urban growth and agricultural expansion. The county's diverse ecosystems, ranging from Mount Elgon's forest zones to the Nzoia River wetlands, have historically provided rich sources of medicinal plants for Bukusu healers. However, contemporary development pressures have significantly altered these landscapes, potentially compromising the accessibility of traditional healing resources and threatening the continuity of indigenous medical knowledge.

This study addresses a critical gap in understanding how urbanization specifically impacts traditional medicinal plant accessibility within the Bukusu

context, providing essential insights for developing culturally appropriate conservation strategies and ensuring sustainable preservation of indigenous healing systems.

II. LITERATURE REVIEW

2.1 Urbanization and Medicinal Plant Biodiversity

Global research consistently demonstrates that urban expansion poses significant threats to medicinal plant diversity. Arjona-García et al. (2021) documented how urban growth in central Mexico led to systematic degradation of wild medicinal plant habitats, resulting in reduced availability of traditional healing resources. Similarly, studies across sub-Saharan Africa have identified urbanization as a primary driver of biodiversity loss, with particular impacts on plant species used in traditional medicine (Ochwang'i et al., 2018).

Direct habitat destruction through construction represents the most immediate threat, converting natural ecosystems into built environments that cannot support indigenous flora. Additionally, urban pollution, altered hydrology, and habitat fragmentation create secondary impacts that further reduce plant populations and compromise their medicinal properties (Wekesa & Muasya, 2021).

2.2 Traditional Knowledge Transmission and Urban Environments

Research reveals that urbanization disrupts the social and ecological contexts necessary for effective knowledge transmission. Namuganza et al. (2022) found that urban migration in Eastern Uganda contributed to significant gaps in ethnobotanical knowledge transfer between generations, as younger people raised in urban environments lacked opportunities for practical learning about plant identification and use.

The spatial dimension of traditional knowledge is particularly relevant for understanding medicinal plant accessibility. Traditional healing systems often incorporate specific understanding of local ecosystems, seasonal patterns, and sustainable harvesting practices developed through long-term interaction with particular landscapes. When urbanization alters these landscapes, it simultaneously undermines the knowledge systems that depend on them (Moshi et al., 2017).

2.3 Conservation Strategies and Community Responses

Despite these challenges, emerging literature documents various strategies that communities have developed to preserve medicinal plant access in urban contexts. Wekesa and Muasya (2021) described successful initiatives in Western Kenya where medicinal plant gardens were established within urban health institutions, serving both conservation and educational purposes. Community-based conservation approaches have shown particular promise, with traditional knowledge holders playing central roles in developing strategies that protect both biodiversity and cultural heritage (Lwoga et al., 2018).

III. RESEARCH METHODOLOGY

This study employed an ethnographic research design to investigate how urbanization influences traditional medicinal plant accessibility among Bukusu healers. The ethnographic approach enabled deep cultural understanding through fieldwork and detailed observation of healing practices while facilitating data triangulation to enhance validity and reliability (Nyamongo et al., 2021).

The research was conducted in Bungoma County, Kenya, a region predominantly inhabited by the Bukusu community. The county covers 3,032 square kilometers with diverse ecosystems supporting traditional medicinal plants. The target population included traditional healers (*bamûni*) with at least 10 years of recognized practice, modern medical practitioners, Bukusu community members, and cultural elders aged 60 years and above.

Purposive sampling selected participants with relevant knowledge and experience, while snowball sampling identified additional participants through existing networks. The final sample comprised 100 participants: modern medical practitioners (n=28), Bukusu community members (n=48), registered traditional healers (n=17), and key informants (n=7).
Data collection utilized structured questionnaires with Likert scale and open-ended questions, semi-

structured interviews with key informants, and focus group discussions with traditional healers. Quantitative data were analyzed using descriptive statistics, while qualitative data underwent thematic analysis following systematic identification of patterns and themes (Braun & Clarke, 2006).

IV. RESULTS

4.1 Demographic Characteristics

The study achieved a 71.43% response rate with participants representing diverse backgrounds. Gender distribution showed male dominance (86%), reflecting traditional patterns in Bukusu healing practices. Age distribution indicated 44% of participants aged 35-44 years, with 33% in the 25-34 age group, suggesting active engagement of middle-aged community members.

4.2 Modern Medical Practitioners' Perspectives

Quantitative findings revealed strong consensus regarding urbanization's negative impact on medicinal plant accessibility. A combined 86% of respondents confirmed that urbanization has negatively affected traditional medicinal plant availability, while 85% identified environmental degradation as a major threat. Additionally, 88% agreed that loss of natural habitats affects traditional medicine practice in urban settings, and 81% felt that development policies inadequately protect areas with medicinal flora.

Regarding conservation, 88% of medical practitioners supported collaboration with traditional healers to conserve indigenous medicinal knowledge. Open-ended responses revealed that practitioners recognized urban development as gradually eroding natural environments where medicinal plants are traditionally sourced, including forests, wetlands, and uncultivated areas cleared for housing and commercial development.

4.3 Bukusu Community Perspectives

Community members provided equally concerning perspectives. An overwhelming 86% agreed that finding medicinal plants is significantly harder now than in the past, while 87% attributed this decline to urban development destroying natural herbal growing areas. The practical implications were evident in 84% confirming that traditional healers must travel farther to find herbs.

Generational impacts were notable, with 81% agreeing that youth in urban areas show decreased interest in traditional medicine. Despite challenges, 91% believed that protecting medicinal plants is essential for preserving Bukusu healing knowledge, indicating strong community support for conservation initiatives.

4.4 Traditional Healers' Experiences

Key informant interviews revealed detailed accounts of urbanization's impact on practice. Healers consistently reported that areas once rich in medicinal plants—including forests near Mount Elgon and riverbanks along the Nzoia and Kuywa rivers—have been converted to residential estates, roads, or agricultural land. These developments have fragmented traditional foraging grounds, making herb collection unpredictable and scarce.

Distance traveled for herb collection has increased dramatically, with healers now making trips of 15-30 kilometers into rural forested areas. One healer noted: *"In the past, I could find everything I needed in the bush behind my home. These days, I have to take a motorbike for more than an hour to reach where the herbs still grow."*

Specific plant species losses were documented through focus group discussions. Healers identified several herbs that have become scarce or locally extinct, including *Kamulakho* (formerly used for fevers), *Lusuguti* (a detoxification root), and *Namafwa* (a respiratory treatment herb endangered by habitat destruction).

4.5 Adaptive Strategies and Conservation Solutions

Traditional healers have developed various adaptation strategies including purchasing herbs from markets, substituting similar plants when preferred species are unavailable, and cultivating medicinal plants in home gardens. However, healers expressed concerns that these adaptations compromise authenticity and spiritual connection traditionally associated with personally harvesting herbs.

Despite challenges, participants demonstrated strong conservation awareness and proposed practical solutions. Traditional healers suggested establishing herbal gardens in homes, schools, and health centers, and called for government intervention in protecting indigenous plant habitats. Documentation emerged as another priority, with healers recognizing the need to record traditional knowledge before it is lost.

A significant finding was the limited institutional support for medicinal plant conservation. While some healers mentioned occasional NGO workshops, no sustained county-level programs link traditional healers to conservation initiatives, representing a critical barrier to sustainable traditional medicine practice.

CONCLUSION

This study demonstrates that urbanization significantly threatens the accessibility of traditional medicinal plants used by Bukusu healers, with implications extending beyond resource availability to encompass cultural knowledge preservation and community health sustainability. The convergence of findings reveals consistent patterns of habitat destruction, increased travel burdens for healers, and declining youth engagement with traditional knowledge systems.

The documented impacts reflect broader global patterns of indigenous knowledge erosion under development pressures. However, the strong community support for conservation initiatives suggests fertile ground for collaborative conservation approaches. The generational dimension emerges as particularly critical, with urbanization creating physical and cultural barriers to traditional learning processes.

Institutional gaps in supporting traditional medicine conservation represent a significant finding, highlighting the disconnect between policy rhetoric supporting traditional medicine and practical implementation of supportive frameworks.

RECOMMENDATIONS

1. County and national governments should develop comprehensive policies recognizing traditional healers as legitimate stakeholders in biodiversity conservation and healthcare delivery. This includes creating formal frameworks for medicinal plant habitat protection and integrating traditional ecological knowledge into environmental impact assessments.
2. Support should be provided for community-led conservation initiatives, including establishment of medicinal plant gardens in schools, health centers, and community spaces, with traditional healers positioned as conservation leaders.
3. Culturally appropriate documentation programs should be developed in collaboration with traditional healers, including intergenerational learning opportunities and digital repositories with community-controlled access.
4. Urban planning processes should incorporate traditional ecological knowledge and medicinal plant conservation needs, establishing green corridors that preserve indigenous plant habitats and requiring environmental impact assessments that consider medicinal plant resources.

REFERENCES

[1] Arjona-García, C., Ramos-Cruz, A., Burrola-Aguilar, C., Garibay-Orijel, R., & Estrada-Torres, A. (2021). Urban growth effects on the traditional management of edible and medicinal mushrooms in Mexico City's periphery. *Journal of Ethnobiology and Ethnomedicine*, 17(1), 1-18.

[2] Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.

[3] Lwoga, E. T., Ngulube, P., & Stilwell, C. (2018). The role of mobile technologies in fostering knowledge sharing among traditional healers in Tanzania. *Information Development*, 34(5), 492–503.

[4] Moshi, M. J., Otieno, D. F., & Weisheit, A. (2017). Indigenous knowledge and conservation of medicinal plants in urban settings: A case

study from Dar es Salaam, Tanzania. *Journal of Ethnobiology and Ethnomedicine*, 13(1), 15–22.

[5] Namuganza, A., Mukadasi, B., Walakira, A., Namaganda, M., & Olupot, W. (2022). Medicinal plant species at risk in Eastern Uganda due to urbanization and agricultural expansion. *Tropical Medicine and Health*, 50(1), 1-12.

[6] Nyamongo, I. K., Ouma, G., & Muchiri, E. (2021). Ethnographic approaches in African health research: Methods and applications. *African Journal of Health Sciences*, 34(2), 145-162.

[7] Ochwang'i, D. O., Kimwele, C. N., & Oduma, J. A. (2018). Medicinal plants of Kenya: Diversity, conservation and ethnobotanical uses. *Journal of Medicinal Plants Research*, 12(19), 240-257.

[8] Wekesa, C., & Muasya, A. M. (2021). Conservation of medicinal plants through herbal gardens in Western Kenya: Community participation and sustainability challenges. *Biodiversity and Conservation*, 30(8), 2287-2305.

[9] World Health Organization. (2019). *WHO global report on traditional and complementary medicine 2019*. Geneva: World Health Organization Press.