Epilepsy prevalence studies and the lingering treatment gap in Africa

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Epilepsy is an important cause of morbidity in low-income and middle-income countries, especially in sub-Saharan Africa, but large-scale community-based prevalence studies are few.[1] The study by Daniel M Mwanga and colleagues[2] has uniquely sought to determine the prevalence of epilepsy in an African urban setting; previous studies in the region have focused on active convulsive epilepsy in rural areas which have different disease determinants.[3] East Africa is rapidly urbanising with a young population, with Nairobi being one of the largest growing cities, yet no prevalence studies have been reported until now. Housing developments have been slow, leading to the emergence of many informal urban settlements that carry their own socio-economic characteristics and determinants of epilepsy.

Understanding the contribution and counter-effects of epilepsy on individuals living in these settings is crucial in shaping appropriate interventions at many levels: public health, infrastructure for health-care access, and socio-demographic inequalities such as education and employment rates. This study identifies these factors and provides findings that are unique to informal settlements when compared with similar studies from elsewhere in Africa. For example, it expounds on adults with epilepsy being more likely to be divorced or separated and hence being less likely to have consistent social support.

The study methodology employed is robust because it utilises an initial census approach using a well-validated screening tool within a defined demographic surveillance site,[4] followed by diagnostic confirmation by experienced practitioners. It also demonstrates that non-neurologist physicians can be supervised and trained to identify epilepsy, a model that can be used to address the dearth of neurologists and epileptologists in East Africa (there are less than 30 neurologists in Kenya for a population of 50 million[5]). In the same view, we have few facilities for electroencephalography (EEG); the authors modestly mention the suboptimal usage of EEG as a limitation, but we believe it is a strength as it re-emphasises epilepsy as a clinical diagnosis.

This study adds value in many ways to what is already known about epilepsy in the country. Firstly, it identified more patients with generalised as well as non-convulsive epilepsy, contrary to what has been reported from older studies.[1] Re-classification notwithstanding, one wonders whether it is time to re-examine African and other populations, where symptomatic contributors to epilepsy seem to be less prevalent than half a century ago. Investigators engaging with select populations in Nairobi have reported predominantly normal imaging for patients with epilepsy, unlike what had been reported earlier in studies from Kilifi.[6]

Secondly, this study included children and adolescents, thus providing important insights into the possible factors driving the onset of epilepsy, as a significant proportion of epilepsy in adulthood has an onset in childhood. Advocating for effective management of epilepsy in childhood will have a positive effect on adults, including for economic and social outcomes.

Thirdly and most notably, this study elaborates further on the treatment gap for people living with epilepsy in Africa: 80% first received their diagnosis through the study alone. Although there has been a lot of previous work to try and close this gap when identified decades ago,[7] this study is a stark reminder that such efforts have not reached under-served and under-recognised populations. Continent-specific and country-specific approaches need to be established urgently, and the Intersectoral Global Action Plan report provides necessary frameworks to achieve these.[8] Increasing the health-care workforce is an important but resource heavy solution: there are only a handful of post-graduate training programmes in neurology in East Africa, which help to train neurology specialists in the long run but cannot address the urgent need for now. Awareness of epilepsy diagnosis should be a part of the training for clinical officers (health-care workers who are equivalent to physician associates who have undergone abbreviated medical training and are the main senior clinical decision-makers in the Kenyan primary health-care system). However, adherence to epilepsy treatment guidelines and access to medicines remain barriers to providing adequate support for people with epilepsy. The advancement of communication technology in Kenya makes telehealth an essential solution to help address

these gaps: the authors have eluded to their screening survey "app",[4] and studies in Kenya have demonstrated that teleconsultations are acceptable and effective for managing patients with neurological conditions.[9]

We applaud the authors for conducting this timely and instructive community-based study, the first of its kind in Nairobi. The findings have provided a foundation for future public health interventions in such settings in Africa.

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1 Beghi E. The epidemiology of epilepsy. *Neuroepidemiology* 2020; **54:** 185–91.
2 Mwanga DM, Kadengye DT, Otieno PO, et al. Prevalence of all epilepsies in urban informal settlements in Nairobi, Kenya: a two-stage population-based study. *Lancet Glob Health* 2024; published online July 5. https://doi.org/10.1016/S2214-109X(24)00217-1.
3 Kariuki SM, Matuja W, Akpalu A, et al. Clinical features, proximate causes, and consequences of active convulsive epilepsy in Africa. *Epilepsia* 2014; **55:** 76–85.
4 Jones GD, Kariuki SM, Ngugi AK, et al. Development and validation of a diagnostic aid for convulsive epilepsy in sub-Saharan Africa: a retrospective case-control study. *Lancet Digit Health* 2023; **5:** e185–93.
5 Kissani N, Liqali L, Hakimi K, et al. Why does Africa have the lowest number of neurologists and how to cover the gap? *J Neurol Sci* 2022; **434:** 120119.
6 Samia P, Odero N, Njoroge M, et al. Magnetic resonance imaging findings in childhood epilepsy at a tertiary hospital in Kenya. *Front Neurol* 2021; **12:** 623960.
7 Meinardi H, Scott RA, Reis R, Sander JW, World ICotD. The treatment gap in epilepsy: the current situation and ways forward. *Epilepsia* 2001; **42:** 136–49.
8 Grisold W, Freedman M, Gouider R, et al. The Intersectoral Global Action Plan (IGAP): a unique opportunity for neurology across the globe. *J Neurol Sci* 2023; **449:** 120645.
9 Yakub FA, Shah J, Sokhi DS. High acceptability, convenience and reduced carbon emissions of tele-neurology outpatient services at a regional referral centre in Kenya. *eNeurologicalSci* 2023; **33:** 100484.