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RESEARCH ARTICLE

Population-based prevalence of epilepsy in Uganda: A nationwide cross-sectional survey

Angelina Kakooza-Mwesige[1,2] | **Anthony T. Fuller**[3] | **Paula N. Njeru**[3,4,5] | **Fredrick E. Makumbi**[6] | **Christine Muhumuza**[3,6] | **Noeline Nakasujja**[7] | **Mark Kaddumukasa**[8] | **Martin N. Kaddumukasa**[8,9] | **Juliet Nakku**[10] | **Michael M. Haglund**[3,4,5] | **Brad J. Kolls**[3,11,12] | **Taimur Hassan**[3,13] | **Dirk E. Teuwen**[14] | **Deborah C. Koltai**[3,4,15]

[1]Department of Paediatrics and Child Health, Makerere University College of Health Sciences, Kampala, Uganda

[2]Pediatric Neurology Unit, Department of Paediatrics and Child Health, Mulago National Referral Hospital, Kampala, Uganda

[3]Duke Division of Global Neurosurgery and Neurology, Department of Neurosurgery, Duke University Medical Center, Durham, North Carolina, USA

[4]Duke Global Health Institute, Durham, North Carolina, USA

[5]Department of Neurosurgery, Duke University School of Medicine, Durham, North Carolina, USA

[6]Department of Epidemiology and Biostatistics, Makerere University School of Public Health, Kampala, Uganda

[7]Department of Psychiatry, School of Medicine, Makerere University College of Health Sciences, Kampala, Uganda

[8]School of Medicine, College of Health Sciences, Makerere University, Kampala, Uganda

[9]Department of Medicine, Mulago National Referral Hospital Neurology Unit, Kampala, Uganda

[10]Butabika National Referral Mental Hospital, Kampala, Uganda

[11]Department of Neurology, Duke University School of Medicine, Durham, North Carolina, USA

[12]Neuroscience Medicine, Duke Clinical Research Institute, Durham, North Carolina, USA

[13]School of Medicine, Texas A&M University, Bryan, Texas, USA

[14]Department of Neurology, Ghent University Hospital, Ghent, Belgium

[15]Clinical Neuropsychology Service, Duke University Medical Center, Durham, North Carolina, USA

Correspondence
Deborah C. Koltai, Clinical Neuropsychology Service, Duke University Medical Center, Box 3333, Durham, NC 27705, USA.
Email: koltai@duke.edu

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Abstract

Objective: Establishing the prevalence of epilepsy in Uganda is crucial to inform interventions and public policy. We conducted a nationwide survey to determine epilepsy prevalence.

Methods: From January 2019 to July 2022, a door-to-door survey was conducted across all four regions of Uganda, targeting a nationally representative sample of households. Trained field teams identified and interviewed heads of households to obtain demographic information, and three household members were randomly selected for epilepsy screening. A two-part survey, adapted from a validated

Angelina Kakooza-Mwesige and Anthony T. Fuller are co-first authors.

We confirm that we have read the Journal's position on issues involved in ethical publication and affirm that this report is consistent with those guidelines.

standardized epilepsy questionnaire in low- and middle-income countries, was used for screening. To ensure the accuracy of the prevalence estimates, a subset of screened individuals underwent clinical validation by a qualified neurologist. Epilepsy was defined per the International League Against Epilepsy (ILAE) criteria. We employed Monte Carlo simulation to extrapolate prevalence estimates.

Results: We identified and screened 35 055 participants (53.5% female). The ages ranged from 1 month to 108 years, with a mean age of 20.7 years. The overall crude epilepsy prevalence was estimated at 16.9 per 1000 persons, with an age- and sex-adjusted prevalence rate of 17.8 per 1000. The differences in sex-specific prevalence rates were not statistically significant. The highest age-specific prevalence rate of 25.0 per 1000 occurred in the 20- to 39-year age group. There was a substantial variation in epilepsy prevalence across the various regions, with the highest prevalence recorded in the eastern region and the lowest in the northern region.

Significance: Our study underscores the high epilepsy burden in Uganda, particularly among adults, and reveals age, gender, and geographical variation likely arising from disparities in the underlying determinants. Identification of these factors is crucial for addressing treatment gaps and reducing epilepsy prevalence.

KEYWORDS

epilepsy, population-based, prevalence, Uganda

1 | INTRODUCTION

Epilepsy is a chronic neurological disorder characterized by recurrent seizures, affecting an individual's neurodevelopmental, cognitive, and psycho-social functioning.[1]

Despite being a common condition, epilepsy has a higher prevalence in low- and middle-income countries (LMICs) including Uganda.[2] The global prevalence of epilepsy is estimated at 6.2 per 1000 persons, with a higher prevalence in LMICs (8.75 per 1000) compared to high-income countries (HICs; 5.18 per 1000). In sub-Saharan Africa, the incidence of active epilepsy and lifetime epilepsy is estimated at 9 and 16 per 1000 individuals, respectively.[3] An international review and meta-analysis reported a lifetime prevalence of 7.60 per 1000 persons (95% 6.17–9.38), with a notably higher prevalence in LMICs (8.75 per 1000; 95% 7.23–10.59) compared to HICs (5.18 per 1000; 95% 3.75–7.15).[4]

In sub-Saharan Africa, the prevalence of active epilepsy and lifetime epilepsy is estimated at 9 and 16 per 1000 individuals, respectively. However, these figures are believed to underestimate the true burden due to underdiagnosis and underreporting.[5,6] Contributing to the higher burden of epilepsy in LMICs compared to HICs include higher rates of parasitic infections, such as neurocysticercosis and onchocerciasis, and increased incidences of traumatic head injuries.[7] Notably, despite the introduction of numerous new anti-seizure medications in recent decades, their availability remains limited in LMICs.[8] Pervasive social stigma, misconceptions about what causes epilepsy, and systemic health care constraints curtail efforts to reduce the treatment gap.[9,10]

Key points

- This nationwide cross-sectional study estimates the overall crude prevalence of epilepsy in Uganda at 16.9 per 1000 individuals.
- Region-specific rates were highest in the eastern region and lowest in the northern region, potentially reflecting the impact of onchocerciasis-elimination efforts.
- These geographical disparities highlight the need for future research into etiological factors driving regional variation in prevalence rates.

Currently, little is known about the national prevalence of epilepsy in Uganda. Previous regional

Studies have shown that the prevalence of epilepsy ranges from about 2 per 1000[11] to 96 per 1000.[12] These

differential values likely reflect the impact of various etiologies of epilepsy rather than the countrywide burden, with higher prevalence rates reported in onchocerciasis-endemic regions of the country. In Africa, a nationwide study in Morocco reported an active epilepsy prevalence of 17.6 per 1000,[13] whereas a study in Rwanda estimated prevalence at 7 per 1000.[14] Differences in methodology, study sizes, and case definitions could partly explain this heterogeneity. The epidemiology of parasitic diseases, perinatal events, head injuries, HIV infection, and hereditary factors might also contribute.[11]

In this study, we sought to determine the population-based prevalence of epilepsy in Uganda to better characterize the burden of disease, providing a crucial foundation for informing future decisions on tailored epilepsy interventions and treatment provisions.

2 | METHODS

2.1 | Study setting

Uganda is a low-income country in East Africa bordered by Kenya in the east, South Sudan in the north, the Democratic Republic of Congo to the west, Rwanda to the southwest, and Tanzania to the south. It occupies an area of ~241 038 km^2. It has an estimated national population of ~45.9 million people and is divided into four administrative regions.[15]

2.2 | Study design

We performed a two-phase survey: door-to-door screening within clusters and clinical validation. The study was conducted from July 2019 to July 2022.

2.3 | Study population

The inclusion criteria for subjects of this study were:

1. Must be a member of the household randomly selected for surveying, as defined by the head of household;
2. Must be proficient in a language mutually comprehensible to the interviewer (who will obtain informed consent) and the study participant; and
3. Must be able to adequately answer the survey questions (with the help of a parent/guardian or surrogate, if applicable).

Any individuals who met the above criteria but did not consent to the study were excluded from the study.

A previous study showed that the prevalence of epilepsy in one Ugandan community is about 10.3/1000.[16] Considering a 5% level of significance, a point prevalence of 10.3/1000, a standard error set at 25% of the point prevalence, and accounting for a response rate loss of 5%, it was necessary to include 6217 individuals. Because our sample size equation did not account for inter-class correlation, we applied a design effect of 3 to account for the clustering correction, bringing our minimum needed total sample size to 18 651 individuals.

2.4 | Sample size calculation

$$\text{Sample size for single proportion} = \frac{\frac{z^2 p(1-p)}{e^2}}{1-r}$$

$$= \frac{\frac{1.96^2(.0103)(1-.0103)}{(.0103/4)^2}}{1-.05}$$

$$= 6217 \text{ individuals}$$

$$\text{Accounting for design effect of } 3 = 3\,(6217)$$

$$= 18\,651 \text{ individuals}$$

We collaborated with the Uganda Bureau of Statistics (UBOS) to develop a national sampling framework to achieve our minimum sample size. We considered factors such as probability proportional to size, which ensures that larger populations are adequately represented; rural and urban residency to capture the differences in living conditions and access to services; and district-level stratification to account for regional variations across Uganda's >130 districts. Consequently, our sampling frame comprised 330 enumeration areas, with 30 households in each area, and every household member was eligible to participate. This approach allowed us to create a comprehensive and representative sample, enhancing the accuracy and reliability of our findings. In total, 37 198 individuals were approached to participate in the study (Figure 1).

We used a two-stage cluster-based random sampling, where clusters were chosen randomly in a two-stage process.

First stage: At the first stage, we determined the number of clusters needed in each of Uganda's 10 subregions (as defined by the Uganda Demographic Health Survey in 2016 as Kampala, Central 1, Central 2, East Central, Eastern, Karamoja, North, West Nile, Western, and Southwest).

Second stage: Next, the desired number of households was selected randomly from each cluster. Demographic Health Survey 2011[17] provided a complete listing of households within each cluster. Based on this list, every household member was assigned a number, and three

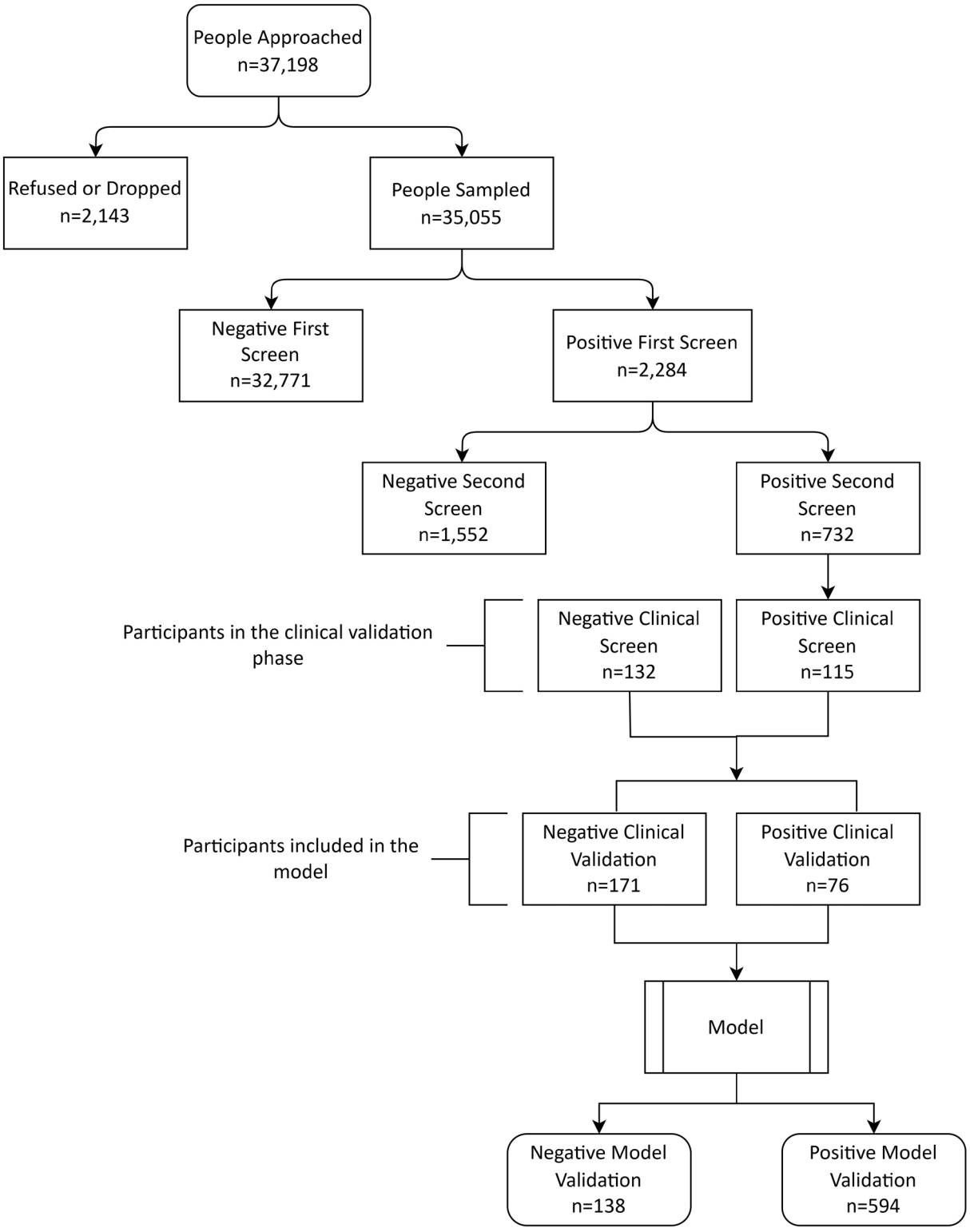

FIGURE 1 Flowchart of participants in the nationwide prevalence study of epilepsy in Uganda.

randomly selected members of the household were asked to participate in the study.

The clusters and households were selected from areas previously mapped and listed by Performance Monitoring for Accountability (PMA) 2020.[18] This study was conducted in collaboration with the PMA 2020 platform. This platform is a partnership between Johns Hopkins University and Makerere University in Uganda. Their collaboration provided our study resources, including enumerators (from local areas trained in mobile technology for data collection) and guidance in conducting a large project on a sensitive topic such as epilepsy.

2.5 | Screening instrument

The screening protocol utilized in this study comprised a two-tiered approach. Tier one involved a 10-item primary screening instrument supplemented by a 3-item secondary screening instrument. The genesis of these instruments stemmed from a validated 12-item screening tool employed in Zambia.[19] This tool, as devised by Birbeck et al., drew inspiration from a nine-item instrument validated previously in Ecuador.[20] The 10th screening question was incorporated to discern seizures typified by nodding syndrome. To enhance its precision, Tier 2 comprised three supplementary queries annexed to the Ecuadorian model to discern and exclude febrile and malaria-associated seizures, thus culminating in the 13-item tool (Appendix S1).

The screening protocol was translated into five local dialects (Luganda, Lusoga, Runyankole, Ateso, and Swahili) and back-translated with the help of research assistants native to each study region.

2.6 | Screening

We interviewed all household members regardless of age, collected socio-demographic data, and completed a two-part questionnaire with screening questions for epilepsy.

The definition of a positive screen included answering yes to any question in Tier 1 of the screening questionnaire (Appendix S1). Tier 2 was used only if the Tier 1 screen was positive. A "yes" response to a Tier 2 question negated the positive screen, and the participant was screened as negative.

Question 10 was added to detect seizures that are not characterized by convulsive episodes but are characteristic of nodding syndrome, which has been shown previously to be prevalent in the northern regions of Uganda. Questions 11–13 were used in a previous study[19] to increase the questionnaire's positive predictive value by excluding patients with febrile and malaria-related seizures.

The head of household provided demographic information and a list of all the members of that household, with each assigned a unique number. Using the Open Data Kit software, three members of the household were randomly selected to participate in the study, with the household head included only if selected. The selected individuals completed an epilepsy screening questionnaire, with a parent or surrogate responding for individuals who were unable to do so. Participants had to be proficient in a language that was mutually understood by the interviewer. If the residents of the home were not present, the team returned three other times to recruit them. They were dropped from the study if they were still not contacted after three attempts.

To validate the screening tool, a subset of both positive- and negative-screened individuals underwent clinical assessment by a neurologist, who was blinded to screening outcomes, to confirm epilepsy diagnosis.

2.7 | Clinical validation

Due to financial and logistical constraints, clinical validation took place 10 months after screening concluded. It involved having both positively and negatively screened participants evaluated by a neurologist who specialized in epilepsy management to determine if they had epilepsy. Given that most neurologists in Uganda practice in Kampala, we subsampled our nationwide sample to assess the survey's performance in participants from the Kampala and Central 1 regions. In the nationwide study, 293 individuals in these regions screened positive on Tier 1 of the survey, and 69 were deemed to have epilepsy based on Tier 2 results. The minimum sample size of 230 participants was calculated using standard sample size formulas for diagnostic test evaluation, assuming an expected sensitivity and specificity of ~85%, a confidence level of 95%, and a desired precision of ±10%. An equal allocation of screen-positive and screen-negative Tier 1 individuals was chosen to maximize the precision of predictive value estimates while minimizing verification bias.

During the clinical validation phase, we assessed 247 individuals, including 115 who tested positive and 132 of their family members who screened negative within the Kampala and Central 1 regions. We included negatively screened individuals to ensure that the neurologist was blinded to the participants' screening outcomes. This information was then used to evaluate the positive predictive value of the screening questionnaire.

2.8 | Case definition

We defined epilepsy as a condition characterized by two or more unprovoked seizures or seizure episodes more than 24 h apart.[21]

As defined by Birbeck et al., an active epilepsy case was anyone receiving treatment for epilepsy or anyone with a history of recurrent seizures within the past 12 months if the seizure was not provoked by an acute fever in a child <7 years old and the seizures did not occur solely during severe malaria (that is, malaria requiring hospital admission).[19]

2.9 | Ethics

Ethical clearance was obtained from the Duke University Health System Institutional Review Board (Pro00083095), Mulago Hospital Research and Ethics Committee

(MHREC1179), and the Uganda National Council for Science and Technology (HS291ES). At the district level, clearance was sought from District Health Officers (DHOs) and local council chairpersons (LCs). At the household level, permission to enter the household was obtained from the head of the household.

2.10 | Statistical analysis

Statistical analysis was performed in STATA (Version 17, StataCorp LLC, College Station, TX, USA) and RStudio (Version 4.2.0).

The crude prevalence was derived by dividing the number of confirmed epilepsy cases identified during the clinical validation phase, as determined by our mathematical model, by the total population screened. Crude prevalence rates and exact binomial 95% confidence intervals (CIs), both overall and stratified by age and gender, were calculated. Prevalence rates were age- and sex- adjusted with the direct standardization method, using the 2024 Ugandan national population as the reference.

Because clinical validation was carried out for only a subset of the participants who screened positive during the secondary screen, we utilized the Monte Carlo simulation[22] to model nationwide clinical validation phase estimates. Through random values spanning 0 to 1, we modeled the likelihood of positive clinical validation for participants who had initially screened positive in the second stage. By comparing these values against predefined thresholds, we identified positive or negative clinical validation outcomes based on regional probabilities. This method, leveraging randomness to mirror real-world complexity, provides a refined comprehension of outcomes shaped by distinct regional influences.

Maps were created detailing national and regional epilepsy prevalence.

3 | RESULTS

3.1 | Characteristics of study participants

A total of 37198 participants were approached to participate in this study; 2143 participants declined to participate or dropped out during the study. Screening was performed on the remaining 35055 participants: 16292 (46.5%) men and 18763 (53.5%) women. The mean age was 20.7 ± 0.2 years (19.5 ± 0.3 years for men and 21.7 ± 0.3 years for women). The age range was from 1 month to 108 years.

TABLE 1 Demographic characteristics of study participants.

	N	%
Total sample	35055	
Gender		
Male	16292	46.48
Female	18763	53.52
Age, years		
0–4	6375	18.19
5–19	14447	41.21
20–39	8574	24.46
40–64	4452	12.70
>64	1208	3.45
Education		
None	12198	34.80
Primary	17520	49.98
Secondary O-level	3930	11.21
Secondary A-level	351	1.00
Vocational training	541	1.54
University or higher	515	1.47
Weekly income		
0 to 5000 UGX	14647	41.78
5001 to 20000 UGX	11649	33.23
20001 to 50000 UGX	5126	14.62
50001 to 100000 UGX	2052	5.85
More than 100000 UGX	1581	4.51

Abbreviations: UGX, Ugandan shillings.

The demographic and socio-economic characteristics of 35055 participants are summarized in Table 1.

3.2 | Country-wide prevalence

Among the 35055 participants, 2284 were suspected of having epilepsy after the primary screening procedure (unadjusted prevalence 65.2 per 1000). The secondary screening procedure decreased this to 732 people (unadjusted prevalence 20.9 per 1000). Integrating the clinical validation outcomes with Monte Carlo modeling yielded 594 individuals diagnosed with epilepsy (Table 2).

The overall prevalence of epilepsy in Uganda was 16.9 per 1000 (95% CI 15.6–18.3 per 1000), with an age- and sex-adjusted prevalence rate of 17.8 per 1000. The observed difference in rates among men (16.5 per 1000) and women (17.3 per 1000) was not statistically significant. The age-specific prevalence was highest in the 20–39 age group (25.0 per 1000) and lowest in the 0–4 age group (8.6 per 1000). Prevalence increased with age up to 40 years, followed by a slight decline and then a subsequent rise in individuals over 64 years (Table 3; Figure 2).

	Positive	Negative	Prevalence (%)	Per 1000	95% CI
Primary screen	2284	32 771	6.52	65.15	62.62–67.78
Secondary screen	732	34 323	2.09	20.88	19.44–22.43
Clinical validation	594[a]	34 461[a]	1.69	16.94	15.65–18.35

TABLE 2 Epilepsy prevalence at various screening stages.

[a]Figures presented are modeled estimates based on clinical validation conducted in a subset of participants. These estimates were extrapolated to the full sample using Monte Carlo simulation, as described in the Methods section.

3.3 | Regional prevalence

Epilepsy prevalence was highest in the Eastern region, at 22.1 per 1000 (95% CI 18.5–26.4 per 1000), and lowest in the Northern region, at 13.7 per 1000 (95% CI 10.7–17.4 per 1000). Substantial variation in prevalence was observed across various districts, ranging from near zero in some districts to over 50 per 1000 in others (Figure 3).

3.4 | Instrument characteristics

Clinic-based validation was conducted on a subgroup of 247 individuals (115 positives, 132 negatives) who had undergone prior screening. The neurologist was blinded to the screening results. A complete neurological examination was performed, including taking a complete neurological history, completing a physical exam, and reviewing prior medical records. The combined Tier 1 and Tier 2 study instrument exhibited a specificity of 65.50% (95% CI 57.86%–72.59%) and a sensitivity of 73.68% (95% CI 62.32%–83.13%). One hundred twelve of 132 of those who screened negative were judged not to have epilepsy by the neurologist. False positives mainly were participants who had experienced one febrile seizure or had conditions other than epilepsy, such as severe migraines, fainting spells, or having lost consciousness due to a fall. The positive predictive value of the combined Tier 1 and Tier 2 study instrument was 48.70% (95% CI 39.27%–58.19%).

4 | DISCUSSION

Epilepsy prevalence studies in Uganda have focused largely on specific regions. The earliest studies paid particular emphasis to onchocerciasis-endemic areas in western Uganda,[23,24] assessing the lifetime prevalence following onchocerciasis distribution. A follow-up study 17 years later re-investigated epilepsy prevalence in the region and noted a marked reduction in the epilepsy burden following the introduction of mass onchocerciasis elimination measures in hyperendemic areas.[25] A study in Iganga-Mayuge, a district in the country's Eastern region, contributed to a multi-country investigation of active epilepsy prevalence in sub-Saharan Africa.[16] Further studies conducted in various districts in northern Uganda evaluated the lifetime prevalence and incidence of nodding syndrome and other forms of epilepsy before and after onchocerciasis control measures, highlighting the ongoing significance of infectious disease control in understanding epilepsy epidemiology in Uganda.[12,26] To our knowledge, this is the first nationwide study in Uganda that aimed to measure a thorough estimation of prevalence.

We utilized a door-to-door sampling strategy that is widely recommended for epidemiological studies in developing countries and supported by the International League Against Epilepsy (ILAE). Our study had a response rate of 94.24%, with 35 055 people screened. Our adjusted prevalence rates (17.8 per 1000) exceed the crude estimates (16.9 per 1000), indicating that crude rates alone may underestimate the true disease burden. Our estimates are similar to those found from a study in the Western region (12 per 1000)[24] but higher than estimates from a study in the country's Eastern region (2.4 per 1000).[16] The extent to which we can compare these studies is limited, given that these studies were of a smaller scale and the methodologies are not precisely comparable. In sub-Saharan Africa, prevalence estimates vary widely among studies. Although some studies align with our findings,[19,27–29] others report significantly higher or lower rates.[30–32] Discrepancies in these estimates can be attributed to variations in study designs, sample sizes, screening instruments used, and definitions of epilepsy across different studies. Our reported prevalence is higher than rates typically observed in HICs,[3] where prevalence tends to be much lower, underscoring potential regional differences in risk factors and health care access.

Our age-specific prevalence rates follow a distribution similar to that reported in other African countries.[30,31,33] Prevalence rates increased with age, peaking in the 24–40 age group, a pattern similar to that shown in previous studies in the continent where active convulsive epilepsy peaks in the 36–45 age group.[19] The peaks in adulthood may suggest fewer cases lost to premature mortality or

TABLE 3 Epilepsy prevalence per 1000 people by age and sex.

Age group	Males				Females				Both sexes			
	Pop.	Cases	Rate (/1000)	95% CI	Pop.	Cases	Rate (/1000)	95% CI	Pop.	Cases	Rate (/1000)	95% CI
0 to 4	3206	34	10.61	7.47–14.96	3169	21	6.63	4.21–10.30	6375	55	8.63	6.57–11.30
5 to 19	7132	90	12.62	10.22–15.56	7314	110	15.04	12.43–18.17	14447	200	13.84	12.03–15.92
20 to 39	3517	106	30.14	24.85–36.48	5057	108	21.36	17.63–25.83	8574	214	24.96	21.81–28.54
40 to 64	1928	30	15.56	10.71–22.43	2524	66	26.15	20.43–33.35	4452	96	21.56	17.59–26.38
≥65	509	9	17.68	8.65–34.53	699	20	28.61	18.03–44.64	1208	29	24.01	16.43–34.75
Total	16292	269	16.51	14.64–18.62	18763	325	17.32	15.53–19.32	35055	594	16.94	15.65–18.35
Age- and sex-adjusted rates[a]			17.68	14.64–18.62			17.91	15.53–19.32			17.80	15.65–18.35

[a]Adjusted by direct method to 2024 Uganda population.[15]

FIGURE 2 Age-specific prevalence of epilepsy in Uganda.

spontaneous remission.[32,34,35] The lowest prevalence rates were observed within the 0–4 age group, potentially indicating elevated mortality rates in this demographic; Uganda's median under-five mortality rate between 1990 and 2019 was 113 per 1000 live births.[36] Key drivers include neonatal complications, infectious diseases, malnutrition, long distances to health facilities, low maternal education, inadequate infrastructure, and a shortage of trained health care professionals.[37,38] However, it is important to highlight the challenges in collecting accurate information in this age group. Our instrument is best suited to detect generalized tonic–clonic seizures, so absence seizures, epileptic spasms, and focal aware or unaware seizures, which often appear in childhood, may have been under-reported.[19]

The regional prevalence estimates in our study differed from those reported in previous research. Earlier studies indicated that districts in the Northern region exhibited the highest reported prevalence rates (48 to 96 per 1000),[12] followed by the Western region (8.0 to 17 per 1000),[25] with the Eastern region recording the lowest prevalence (2.0 to 2.8 per 1000).[16] In contrast, our study identified the Eastern and Central regions as having the highest prevalence rates (21.6 per 1000 and 16.9 per 1000, respectively), whereas the Northern region had the lowest prevalence (13.5 per 1000). Higher prevalence in the Eastern region may be due to our region-wide survey's broader coverage compared to the single-district focus of the earlier study. In addition, increased research activity and community outreach in the region may have increased self-reporting, hence the higher rates.[16] The lower prevalence rates in the Northern region observed in our study can be attributed to the continued impact of successful public health interventions in the region, including mass ivermectin distribution coupled with regular bi-annual community-directed treatment with ivermectin, and enhanced vector control through river larviciding, which collectively reduce the incidence of

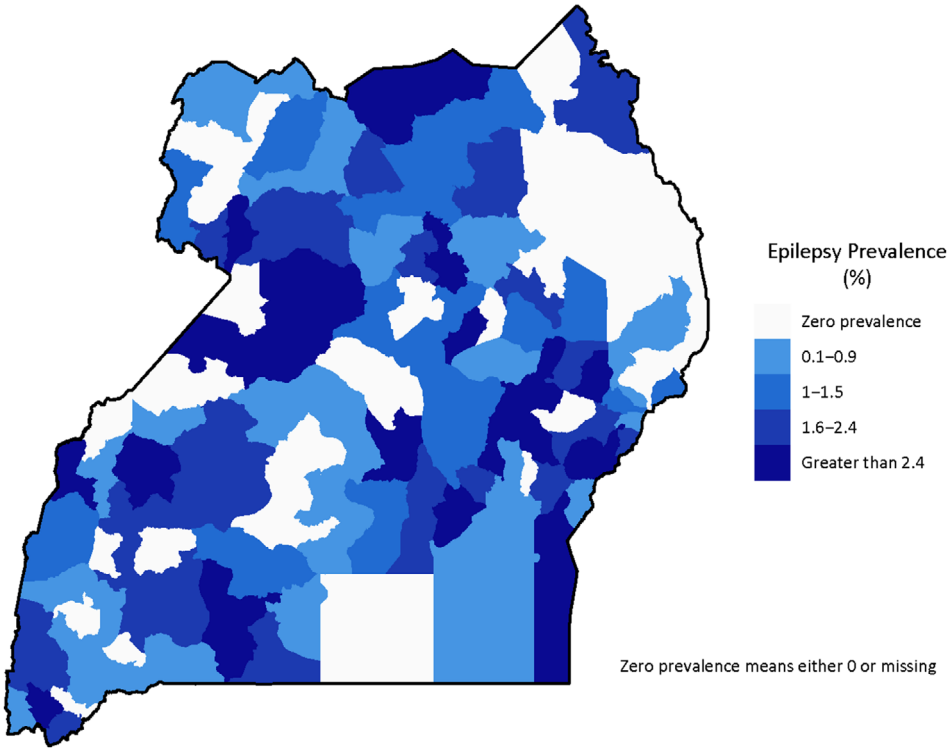

FIGURE 3 Epilepsy prevalence in Uganda based on clinical validation.

onchocerciasis-associated epilepsy and nodding syndrome.[12] Further studies investigating etiology may help explain these regional disparities, likely impacted by variations in injury rates and infectious disease endemicity.

The high prevalence rates observed in our study, as well as other studies in the region, highlight a need to identify the possible causative/risk factors and to develop targeted interventions to decrease the burden of epilepsy in the country. In low-resource settings, communities often rely on the insights of family decision-makers, community leaders, and elders, particularly when faced with conditions like epilepsy. These influential figures usually shape community perception and facilitate access to care.[39] Therefore, enhancing epilepsy awareness and diagnostic efforts is crucial to mitigate the impact of the condition effectively. Targeted strategies should prioritize comprehensive care, encompassing seizure management, psychosocial support, and community integration to enhance overall quality of life.[40–42] Successful community-based interventions rely on collective agreement among community members, particularly influential figures, regarding the importance of early detection and screening. A holistic approach encompassing increased awareness and reduced stigmatization, coupled with early detection and screening, holds significant promise in reducing the epilepsy treatment gap in the country.

5 | STRENGTHS AND LIMITATIONS

Our study presents new findings by offering the first attempt to provide comprehensive prevalence rates, utilizing a tool with sensitivity comparable to similar studies.[20,43,44] We used a screening tool developed in sub-Saharan Africa and validated in Ecuador; however, the tool has yet to be validated in the Ugandan context. In these settings, the tool has reported higher performance metrics than those reported in our study. High levels of epilepsy-related stigma in our setting may have led the participants to underreport their seizures, and challenges in adapting the tool to the local languages may have lowered the sensitivity and specificity of the instrument, respectively.[10,39,44] Furthermore the interval between screening and clinical validation may have introduced misclassification as a result of changes in seizure status and/or recall bias, contributing to discrepancies between the two assessments.[45] Due to operational constraints, we used Monte Carlo modeling[22] to extrapolate clinical validation findings and estimate national prevalence. To mirror the true population, we calibrated all input parameters and assumptions against survey data and Ugandan demographic statistics; however, any residual discrepancies may still have introduced bias in our estimates.

6 | CONCLUSION

This study identified a high prevalence of epilepsy in Uganda. Interventions are needed to increase awareness and lower stigmatization, eventually reducing the treatment gap. Understanding the countrywide prevalence of epilepsy in Uganda is the first step in developing targeted regional treatment strategies. With this knowledge, policymakers can make informed decisions about resource allocation and community-based interventions based on existing infrastructure.

AUTHOR CONTRIBUTIONS

Angelina Kakooza-Mwesige: conceptualization (lead), investigation (lead), methodology (lead), project administration (lead), resources (lead), supervision (lead), validation (lead), writing – review & editing (supportive). **Anthony T. Fuller:** conceptualization (lead), data curation (lead), formal analysis (lead), funding acquisition (supportive), software (lead), investigation (lead), methodology (lead), project administration (lead), resources (lead), supervision (lead), validation (lead), visualization (lead), writing – review & editing (equal). **Paula N. Njeru:** data curation (supportive), visualization (lead), writing – original draft preparation (lead). **Fredrick E. Makumbi:** conceptualization (supportive), investigation (supportive), methodology (supportive), project administration (lead), resources (lead), supervision (lead), writing – review & editing (supportive). **Christine Muhumuza:** conceptualization (supportive), data curation (lead), investigation (lead), methodology (supportive), project administration (lead), resources (lead), supervision (lead), writing – review & editing (supportive). **Noeline Nakasujja:** investigation (supportive), methodology (supportive), writing – review & editing (supportive). **Mark Kaddumukasa:** investigation (supportive), methodology (supportive), writing – review & editing (supportive). **Martin N. Kaddumukasa:** investigation (supportive), methodology (supportive), writing – review & editing (supportive). **Juliet Nakku:** investigation (supportive), methodology (supportive), writing – review & editing (supportive). **Taimur Hassan:** writing – original draft preparation (supportive). **Brad J. Kolls:** methodology (supportive), writing – review & editing (supportive). **Michael M. Haglund:** conceptualization (supportive), funding acquisition (lead), methodology (supportive), project administration (supportive), resources (supportive), supervision (supportive), writing – review & editing (supportive). **Dirk E. Teuwen:** conceptualization (lead), investigation (supportive), methodology (supportive), project administration (supportive), resources (supportive), supervision (supportive), writing – review & editing. **Deborah C. Koltai:** conceptualization (supportive), investigation (supportive), methodology (supportive), project administration (supportive), resources (supportive), supervision (supportive), funding acquisition (supportive), writing – review & editing (equal).

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CONFLICT OF INTEREST STATEMENT

The contributing authors to this article have declared no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data supporting this study's findings are available upon reasonable request from the corresponding author. Access to the data is subject to ethical and legal restrictions, and requests will require approval from the relevant ethics review boards. Data will be made available to researchers to replicate procedures and results, subject to data-sharing agreements and compliance with applicable data protection laws and institutional policies.

ETHICS STATEMENT

Ethical clearance was obtained from the Duke University Health System Institutional Review Board (Pro00083095), Mulago Hospital Research and Ethics Committee (MHREC1179), and the Uganda National Council for Science and Technology (HS291ES).

ORCID

Angelina Kakooza-Mwesige https://orcid.org/0000-0002-1189-3671

Anthony T. Fuller https://orcid.org/0000-0001-8841-6948
Paula N. Njeru https://orcid.org/0000-0003-3918-1753
Fredrick E. Makumbi https://orcid.org/0000-0002-6460-7325
Christine Muhumuza https://orcid.org/0000-0002-3085-0116
Noeline Nakasujja https://orcid.org/0000-0002-8163-4376
Mark Kaddumukasa https://orcid.org/0000-0001-7390-7330
Martin N. Kaddumukasa https://orcid.org/0000-0001-6006-3546
Juliet Nakku https://orcid.org/0000-0002-0611-1102
Michael M. Haglund https://orcid.org/0000-0002-6332-0808
Brad J. Kolls https://orcid.org/0000-0002-8704-8749
Taimur Hassan https://orcid.org/0000-0003-1188-9282
Dirk E. Teuwen https://orcid.org/0000-0003-0668-600X
Deborah C. Koltai https://orcid.org/0000-0002-4254-9902

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SUPPORTING INFORMATION

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