

Current Practices, Challenges, and Future Directions in Multiple Sclerosis Management in Sub-Saharan Africa

Nicholas Aderinto, MD

ABSTRACT

Multiple sclerosis (MS) is a chronic, inflammatory, and neurodegenerative condition characterized by the immune system's attack on the myelin sheath, leading to neurological dysfunction. While the prevalence of MS in Africa remains lower than in other regions, it has been rising steadily in recent years, with unique challenges hindering its effective management. These challenges include limited health care resources, inadequate diagnostic tools, financial constraints on accessing disease-modifying therapies, and a lack of trained health care professionals (HCPs). Cultural stigma surrounding MS further complicates patient care and treatment adherence. However, ongoing efforts by patient organizations, international collaborations, and local HCPs are focused on raising awareness, enhancing diagnosis and treatment access, and training HCPs. Future directions include integrating MS into national health policies, expanding education and research initiatives, and improving patient support networks. These efforts are vital in addressing the growing burden of MS in Africa and ensuring equitable access to care.

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Multiple sclerosis (MS) is characterized by the immune system's attack on the myelin sheath, leading to inflammation and neuronal damage.¹ The global burden of MS is substantial. In 2019, there were 59,345 MS incident cases and 22,439 MS deaths worldwide.² Despite the relatively low prevalence of MS in Africa compared with other regions, in recent years there has been an increase in reported cases.³ According to the global burden of disease study, in sub-Saharan Africa, the latest estimate of MS cases is approximately 49,000, with approximately 2800 new cases yearly.²

The rising number of cases highlights a critical need for effective diagnostic and therapeutic strategies tailored to sub-Saharan Africa.^{4,5} However, managing MS in this region presents distinctive challenges, including limited health care resources, inadequate infrastructure, and insufficient disease awareness among health care providers (HCPs) and the general population.^{6,7} This editorial explores current practices in MS management across sub-Saharan Africa and highlights the significant challenges that HCPs and patients face.

Current Practices

Despite the challenges encountered by individuals with MS in Africa, ongoing initiatives are aimed at improving the management of the disease. The unique socioeconomic, cultural, and health care systems of various African nations complicate the effective management of MS, leading to disparities in diagnosis, treatment access, and patient support. However, efforts are underway to address these issues and enhance care for those living with MS. Recent studies have focused on providing more accurate estimates of MS prevalence across the continent.^{8,9} Accurate epidemiological data is crucial for understanding the scope of MS in Africa, which has historically been underresearched compared with other regions. A 2018 study indicated that the prevalence of MS in South Africa (5-30 cases per 100,000 people) is significantly higher than previously estimated, reflecting both a true increase in cases and improved diagnostic capabilities within the health care system.⁹ This finding not only highlights the growing recognition of MS as a pressing public health issue

From the Internal Medicine Department, Ladoké Akintola University of Technology, Ogbomosó, Nigeria. Correspondence: Nicholas Aderinto, MD, Internal Medicine Department, PMB 5000, Ladoké Akintola University of Technology, Ogbomosó, Nigeria; email: Nicholasoluwayeyi6@gmail.com.

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in the region but also shows a commitment to advancing MS research. Additionally, these studies have prompted initiatives to train HCPs to recognize and more effectively manage MS.

Current efforts to enhance MS care in Africa emphasize the critical importance of awareness, education, and access to treatment. These elements are vital for addressing the gaps in knowledge and resources that affect the quality of care for individuals with MS. Patient organizations are at the forefront of such advocacy and outreach, offering support, education, and resources to individuals with MS and their families. Multiple Sclerosis South Africa stands out as a leading patient organization in the region, hosting annual MS Awareness Week events, organizing support groups, and advocating for government support.¹⁰

In addition, organizations such as the Multiple Sclerosis International Federation (MSIF) spearhead collaborative research initiatives. One notable project, the Atlas of MS, compiles global data on MS prevalence and health care resources. As of 2023, the atlas has provided critical insights that have influenced national health policies across various countries, further emphasizing the importance of data-driven approaches in improving MS care.¹¹ Moreover, the data derived from the atlas have been vital in advocating for increased funding and resources dedicated to MS research and care. Armed with data, patient organizations and advocates communicate the pressing needs of individuals living with MS, thereby gaining governmental and institutional support.

Challenges

While ongoing efforts are being made to improve MS care in Africa, significant disparities in access to diagnostic tools and trained HCPs persist across the continent. This variation leads to considerable inequalities in the care available to patients. Africa remains predominantly rural, with countries such as Niger, Burundi, Rwanda, and Malawi having only 1 in 5 inhabitants living in urban areas.¹² Despite the appeal of its megacities, Nigeria hosts the continent's largest rural population, totaling approximately 95 million people, closely followed by Ethiopia with about 85 million. In these rural regions, health care infrastructure is often severely underdeveloped, leading to limited access to diagnostic services and patients frequently experiencing significant delays in receiving accurate diagnoses.⁸ Studies have demonstrated that MS patients often endure symptoms for years before receiving appropriate medical care.^{13,14} A retrospective study conducted in Egypt revealed that approximately 49.3% of MS patients were initially misdiagnosed.¹⁵

The shortage of trained neurologists further exacerbates these challenges. Africa has an alarming ratio of approximately 0.03 neurologists per 100,000 people, contrasting with Europe's 8.45 neurologists per 100,000.¹⁶ Moreover, the uneven distribution of health care resources further complicates matters: Most of the neurologists practice in urban areas, leaving rural areas without resources.¹⁷

In addition to these diagnostic challenges, the treatment of MS in Africa comes with issues related to accessibility and

affordability. The proposed 2024 revised diagnostic criteria for MS necessitate MRI findings as a key component for diagnosis.¹ This shift raises important questions regarding the feasibility of implementing these criteria in resource-limited settings, particularly in many African countries where MRI availability is limited. In 2017, Africa had 0.7 MRI scanners per million people, the lowest density among 6 World Health Organization (WHO) regions.⁶ In several regions of Africa, access to MRI is constrained by factors such as the high cost of the equipment, the scarcity of MRI machines, and the limited number of trained radiologists capable of interpreting MRI results. These challenges are particularly pronounced in rural or underserved areas, where health care infrastructure does not support the widespread use of advanced diagnostic technologies like MRI. As a result, the proposed reliance on MRI in the diagnostic criteria could present significant barriers to accurate and timely MS diagnosis in these regions.

Disease-modifying therapies (DMTs) are essential for managing the progression of MS; however, access to these vital medications remains limited across the continent. A survey conducted by the MSIF revealed that countries like Sudan and Syria lack any approved originator DMTs.¹³ Among the countries surveyed, interferons were identified as the most widely available low-efficacy DMTs; 3 countries reported having no high-efficacy DMTs approved. Follow-on DMTs were available in only 50% of the countries surveyed, indicating a significant gap in treatment options. Patients are often compelled to rely on generic versions of these medications, which vary in quality and availability. The inconsistency in the supply of generics poses a considerable risk, as fluctuations in medication quality directly affect treatment efficacy and safety.¹⁸ Moreover, the high cost of branded and generic DMTs often results in nonadherence, as many patients are forced to forgo necessary treatments due to financial constraints. The annual total costs per patient with MS range from approximately USD \$463 to USD \$58,616, a significant burden beyond most African patients' reach, where the combined GDP is roughly USD \$3.1 trillion.¹⁹ Additionally, cultural stigma and misinformation regarding MS can further complicate care. Many individuals view MS as a form of mental illness and hold misconceptions about its causes and management.⁵ This stigma deters patients from seeking necessary medical attention and adhering to treatment regimens, ultimately leading to poorer health outcomes.

Future Directions

Integrating MS into national health policies is essential to enhance disease management across Africa. This approach would address the unique challenges people with MS face, align with broader public health goals aimed at improving health care systems and outcomes, and ensure that MS is recognized as a significant public health issue. Given the growing prevalence of MS in Africa, which has been highlighted by recent studies indicating that African countries have higher prevalence rates than previously estimated, this integration would be especially timely. A national health policy framework that includes MS could facilitate better resource allocation for diagnostic tools,

treatment options, and HCP training. Countries that have integrated MS into their health policies, such as the United Kingdom's National Health Service, have reported improved patient access to care.²⁰ It would be beneficial for African nations to adopt a similar structured approach to funding health care services to enable improvements in patient care.

Furthermore, implementation of cost-reduction strategies are needed, including government subsidies, generic medication production, and partnerships with international organizations to provide funding or medication donations. Regional collaborations could enable pooled procurement strategies to negotiate lower prices for essential MS medications. Establishing and expanding access to nonpharmacological treatments is also needed. Rehabilitation services, including physical and occupational therapy, should be integrated into public health systems through targeted training programs for HCPs, the establishment of dedicated neurorehabilitation centers, and using telemedicine to extend services to underserved areas. Culturally adapted mental health services should also be developed to address the psychological burden of MS, with a focus on counseling, support groups, and training primary workers to deliver basic mental health care.

With the rising prevalence of MS in the region, it is crucial to equip HCPs with the necessary knowledge and skills to manage the disease effectively. Current training programs often lack a specific focus on MS; consequently, many HCPs are unfamiliar with its symptoms, progression, and treatment options. Specialized training programs focusing on MS should be developed and implemented in medical schools and continuing education initiatives in Africa. Incorporating MS into neurology residency curricula can ensure that future neurologists are well-versed in the latest diagnostic criteria and treatment protocols. Online training modules could provide more accessible resources for HCPs in remote or underserved areas, allowing them to enhance their understanding of MS without requiring extensive travel.

Collaborations with international organizations, such as the MSIF, could play a pivotal role in expanding educational opportunities and facilitate knowledge exchange, offering local HCPs access to global best practices and cutting-edge research. Expanding education and training programs will lead to better diagnostic accuracy, more timely interventions, and improved overall management of MS, which would facilitate early detection and prompt initiation of treatment, both of which are vital for slowing disease progression and enhancing patient quality of life.

Establishing more networks for patients and caregivers is essential to deliver holistic support to individuals in Africa who live with MS, as collaboration facilitates access to critical information, resources, and emotional support, all vital for enhancing patients' quality of life.²¹ Support groups, patient advocacy organizations, and community outreach programs empower individuals with MS and their families by creating supportive environments²² and studies have shown that community support enhances treatment adherence and

well-being.^{21,22} These initiatives can also serve as platforms to raise awareness and educate the public about MS, combating stigma and misinformation. Through these efforts, support networks would be pivotal in improving individual and communal outcomes in managing MS.

Encouraging research focusing on the unique challenges and solutions relevant to the African context is paramount for advancing MS management. There is a significant gap in epidemiological data, treatment outcomes, and disease progression studies specific to African populations. Collaborative research efforts involving local universities, health care institutions, and international organizations can help fill this void. Establishing research networks dedicated to MS can promote data sharing and encourage large-scale studies that reflect the diverse experiences of individuals with MS across the continent. In addition, funding initiatives that support local researchers can stimulate innovative approaches to addressing the specific needs of African patients. Enhancing research capacity in low-resource settings benefits local populations and contributes to the global understanding of MS.

CONCLUSIONS

Significant challenges and promising initiatives characterize the management of MS in Africa. As the prevalence of MS continues to rise across the continent, there is a pressing need to adopt approaches that prioritize awareness, education, and equitable access to treatment. Current efforts by patient organizations, HCPs, and international collaborations are essential to foster a supportive environment for individuals living with MS, both in Africa and around the world. ■

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ETHICS APPROVAL: Not applicable

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