



Bridging the rheumatology resource gap in Africa

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Tremendous strides have been made in rheumatology in Africa, with advances in patient care, access to therapies, training, and research noted across the continent [1]. There is still much to do on the world's poorest continent which carries about 40% of the global burden of disease.

Recent work highlights the suboptimal knowledge and management of rheumatic and musculoskeletal diseases (RMD's) among doctors working in Africa. An online survey of rheumatologists, nephrologists, dermatologists, and specialist physicians across Africa revealed that low awareness, lack of access to specialist care, and misdiagnosis as Human Immunodeficiency Virus (HIV) or Tuberculosis contributed to the late diagnosis of Systemic Lupus Erythematosus (SLE) [2]. Significantly, 91% of respondents regarded late diagnosis as a reason for poor outcomes. Similarly, a survey of African clinicians described barriers to prescribing methotrexate (MTX) for RMD's including the limited numbers of trained rheumatologists, and uncertainty of the safety of MTX in persons with comorbidities and endemic infections [3]. Regarding axial spondyloarthritis, in South Africa a diagnostic delay of almost 11 years was reported, associated with a high disease burden and a significant prevalence of poor mental health (69.9%) [4]. Interviews with Kenyan healthcare workers highlighted their perceived lack of knowledge and low competence in managing pediatric rheumatology patients [5].

Challenges lie ahead: many RMD's are on the rise in Africa due to lifestyle factors, population growth, and ageing. Gout is increasing exponentially in sub-Saharan Africa

(SSA); by 2050, the number of cases is predicted to increase by more than 250% [6]. Low back pain is the largest contributor to years lived with disability, and by 2050, the number of cases is expected to increase by 36,4% globally, with the most substantial increases expected in Asia and Africa [7]. Osteoarthritis is common in Africa with a pooled prevalence of 14.2% and is increasing in low- and middle-income countries of SSA [7]. Osteoporosis and associated fragility fractures are a growing major concern in Africa [8]. The global burden of RA is expanding, with early diagnosis and aggressive treatment hampered by low disease awareness and delays in referring and initiation therapy, often driven by socioeconomic factors [9, 10].

How can we tackle these challenges when rheumatology education and resources in Africa remain significantly underdeveloped compared to high-income countries.? This disparity is driven by a variety of factors, including insufficient educational resources, a critical shortage of trained rheumatologists, and limited access to specialized training. However, solutions need to be found.

“It is not because countries are poor that they cannot afford good health information. It is because they are poor that they cannot afford to be without it” [11].

Training programs

One of the most pressing issues in Africa's healthcare landscape is the shortage of rheumatology training in medical schools and hospitals. Rheumatology is often not included as a formal subject in the undergraduate curricula of African medical schools, leaving many doctors ill-equipped to recognize and manage RMD's. This absence of foundational education contributes to the widespread lack of awareness among healthcare providers about RMD's [12].

At postgraduate level, specialist training programs have existed for a long time in South Africa, Nigeria and North African countries. Over the past two decades, additional training centers have been established in East and

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West African countries including Kenya, Burkina Faso, Ghana, Senegal, and Cameroon [13]. Across the continent, innovative solutions are bridging the rheumatology human resource gap (Table 1).

International partnerships

European alliance of associations for rheumatology (EULAR)

Collaborations between African and international rheumatology organizations have emerged to provide accessible

Table 1 Innovations improving rheumatology training across Africa

Country	Innovation/project	Key details
Kenya	AFLAR/UWEZO/ILAR Cornwall Arthritis Trust	<ul style="list-style-type: none"> • Rheumatology symposia creation of Association for Arthritis and Rheumatic Disorders of Kenya [14] • Kenyan ILAR visiting professorship • 2012 UWEZO project “East Africa Initiative” [15] [16] • 2 pediatric rheumatologists trained by rheumatology units in the UK, Canada and SA
Nigeria	Local training	<ul style="list-style-type: none"> • Over 60 rheumatologists trained locally • Weekly nationwide interactive teleconferencing trainee presentations [17]
Egypt	Ultrasound training	<ul style="list-style-type: none"> • establishment of regional platform for MSUS training that expands to other countries [18, 19]
Zambia	EPAREP/ILAR	<ul style="list-style-type: none"> • In 2012, the Enhancement of Pediatric and Adult Rheumatology Education and Practice (EPAREP) project initiated: a two-year on-site rheumatology training in Zambia. [20] • With support from ILAR and international collaboration, EPAREP has successfully established clinics, educational efforts and rheumatic disease registries [21]
Ghana	Local training /ILAR	<ul style="list-style-type: none"> • Pioneered a community-centered approach through educational seminars for non-specialist physicians. In collaboration with the Royal College of Physicians and the BSR, these included clinical sessions on live patients, joint aspiration and injection workshop, leadership and educational supervision training. The course was partly funded by ILAR [22]
Ethiopia	Rheumatology for All Training Program	<ul style="list-style-type: none"> • Sponsorship of two Ethiopian physicians for fellowship training in rheumatology in SA • A visiting professor program to provide residents with intensive rheumatology training • Converted to virtual meetings in the Covid19 pandemic. (https://rheumatologyforall.org, last accessed 2022)
Rwanda	Rheumatology for All Training Program	<ul style="list-style-type: none"> • 2021, initiation of a sixteen-week virtual series of educational sessions in rheumatology at the University of Rwanda. with support from The Royal College of Physicians and surgeons of Canada. This training and education program is led by Dr Carol Hitchon, and Dr Rosie Scuccimarri with an International Development, Aid and Collaboration (IDAC) grant • Rheumatology subspecialty training of a Rwandan Internal Medicine resident under IDAC funding (https://newsroom.royalcollege.ca, last accessed 2022)
Tanzania	Arthritis in Kilimanjaro Project	<ul style="list-style-type: none"> • Regular educational training sessions with senior rheumatologists from recognized centers such as Newcastle and Bergen. This has helped increase the index of suspicion, early referral and improved patient management • Zanzibar community education via television and radio programs with the support from GCC Association of Immunology and Rheumatology in Dubai, United Arab Emirates (https://gccair.org, last accessed 2022) • Arthritis in Kilimanjaro provides training opportunities as well as further strengthening the longstanding research relationship between the University of Glasgow and Kilimanjaro Christian Research Institute (KMC). Currently, there are spaces secured for three nurses from KCMC to take part in the international EULAR Online Course for Health • The project also funded one student to enroll in her master’s programme at the University of Glasgow. (https://gccair.org/, last accessed 2022)

Abbreviations: *AFLAR*, African League Against Rheumatism; *ILAR*, International League Against Rheumatism; *UK*, United Kingdom; *SA*, South Africa; *MSUS*, musculoskeletal ultrasound; *BSR*, British Society for Rheumatology

educational resources. The European Alliance of Associations for Rheumatology (EULAR) has worked closely with African League of Associations for Rheumatology (AFLAR) to provide resources, webinars, and is currently developing training modules for African healthcare professionals. The partnership includes access to EULAR's e-learning platform, which offers courses on a wide range of RMD's. In many countries, rheumatology fellows in training take part in the 2-year EULAR online postgraduate course, the successful completion of which is a prerequisite for certification as rheumatologists, especially in the English-speaking West African countries; Nigeria, Ghana, Sierra Leone, and The Gambia [13].

Rheumatology for all (RFA)

Rheumatology for All (RFA) provides scholarships for African physicians to undergo rheumatology training, either through short-term courses or full fellowship programs in Canada or South Africa. These scholarships enable African healthcare professionals to gain specialized knowledge and bring that expertise back to their home countries, where the need for rheumatology services is critical. RFA's approach emphasizes the importance of building local capacity by training more healthcare professionals to become rheumatologists. Their second goal is to provide virtual training in rheumatology practice for Internal Medicine residents in the countries to build capacity, e.g., Rwanda.

American college of rheumatology (ACR)

The American College of Rheumatology (ACR) has educational resources which are accessible worldwide, and many African physicians have benefitted from the ACR's conferences, webinars, publications, and online courses.

Telemedicine and online learning resources

Telemedicine has emerged as a powerful tool for both patient care and medical education, particularly in regions with limited access to specialists. The AFLAR TEACH (Training, Education, and Capacity Building for Health Professionals) series is an example of how telemedicine can be leveraged for education. Through online seminars, case discussions, and expert-led sessions, the TEACH series provides African healthcare professionals with real-time access to specialized rheumatology training and are crucial for healthcare professionals who may not have access to in-person training.

The African journal of rheumatology

Since its inception in 2012, the African Journal of Rheumatology has emerged as a platform for telling the story of rheumatology across the continent. It has been impactful in gathering African musculoskeletal data, train rheumatologists, integrate African rheumatology globally, and enhance care quality for countless Africans with rheumatic disorders by promoting African scholarly work and research. Despite its challenges due to visibility, it is helping to raise the profile of African rheumatology globally.

Challenges and future directions

Access to these resources, however, is often hindered by factors such as poor internet connectivity in rural areas and the cost of accessing premium educational content. Efforts to expand free access to online resources are needed to ensure that physicians across Africa can benefit from these learning tools, regardless of their geographic or financial constraints.

Handbook of rheumatic diseases in Africa

We are delighted to introduce the first textbook of African Rheumatology, written by two leading rheumatologists, Professor Mohammed Tikly and Professor Paul McGill. Professors Tikly and McGill have extensive experience in clinical practice, teaching, and training in Southern and Eastern Africa. The Handbook of Rheumatic Diseases in Africa provides a clear, concise, and current approach to the diagnosis, investigation, and management of RMD's. The great attraction of this handbook is its format: a pocket-sized reference that can be conveniently carried around; frequently asked questions with answers in bullet-points, tables, and flow diagrams; well indexed and full of annotated illustrations and clinical photographs.

Why there is a need for an *African* rheumatology textbook? There are specific challenges on the African continent that limit the usefulness of health resources developed for and by Western countries. Firstly, endemic infectious diseases on the African continent may present as osteoarticular infections seldom encountered elsewhere. Examples include schistosomiasis, tuberculosis, or chikungunya virus infections [23–28]. Furthermore, the diagnosis and management of classic RMD's are commonly complicated by co-infection, such as HIV, hepatitis B, or histoplasmosis [23–28]. The Handbook offers clear guidance on screening, diagnosis, and management of these infections.

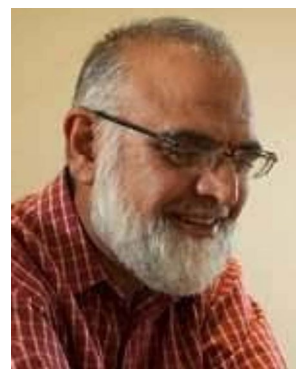
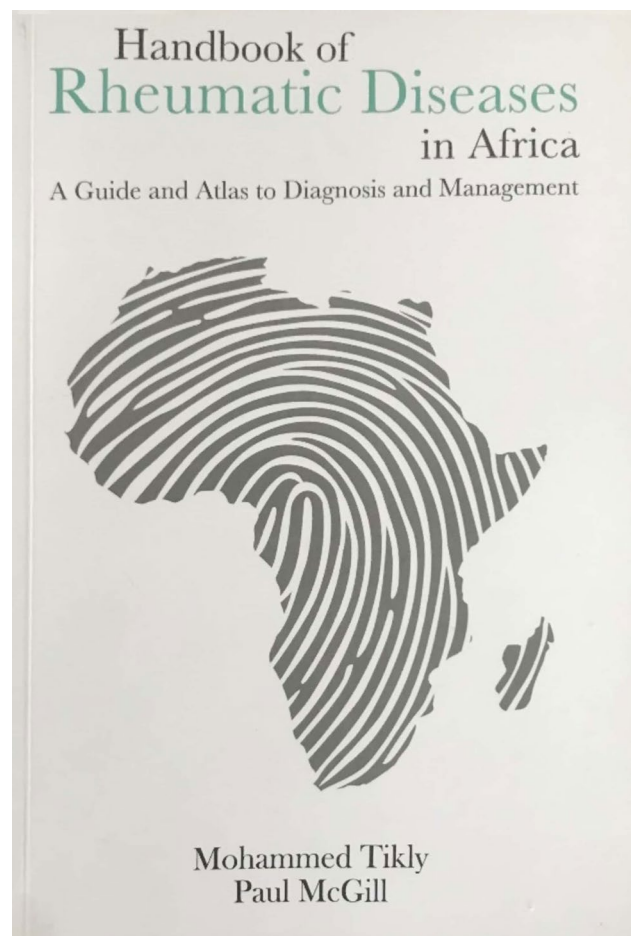
Secondly, genetic and environmental factors may attenuate RMD's in different African populations. Examples include the rarity of the HLA-B27 gene in sub-Saharan Africans, and the association of systemic sclerosis with gold mining [29, 30].

Thirdly, the resource constraints in most African settings requires consideration. The low availability of investigations is well described—as examples, physicians across Africa report the lack of tests for SLE including antinuclear factor and antiphospholipid antibody, complement, urine protein:creatinine ratio, and renal histopathology; and very limited access to MRI for the early diagnosis of axSpA [31]. Thus, clinical skills are of paramount importance to diagnose and manage RMD's in Africa. Recognizing this, the Handbook emphasizes clinical signs and offers pragmatic approaches to appropriate investigations. Because of the critical shortage of health workers in Africa, clinicians with variable expertise in rheumatology, and a growing number of non-physician clinicians, care for RMD's in most African countries [32–34]. In answer to this, the Handbook is aimed at undergraduates, primary healthcare workers, physicians, orthopaedic surgeons, allied healthcare workers, and trainee rheumatologists working in Africa. In addition, the Handbook is likely to be a valuable resource for elective students and healthcare workers visiting Africa, for clinicians treating travellers or immigrants from Africa, and indeed, for resource-constrained regions worldwide.

The *Handbook of Rheumatic Diseases in Africa* is available, and readers from Africa and Europe can contact tikly.mohammed01@gmail.com or pem1941@me.com, respectively, for inquiries. The Kindle version is set to launch late in 2024.

Another excellent student resource is *The Practical Handbook of Rheumatology*, authored by Prof Asgar Kalla.

Rheumatology education in Africa faces significant challenges, including a shortage of specialists, limited training programs, and insufficient resources, leading to delayed diagnoses and poor patient outcomes. However, collaborations with international organizations, online learning platforms, and local initiatives are helping to address these disparities.



Prof. Mohammed Tikly



Prof. Paul McGill

Declarations

Disclosures None.

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