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The impact of COVID-19 on rheumatology practice across Africa

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Abstract

Objectives. To identify the changes in rheumatology service delivery across the five regions of Africa from the impact of the COVID-19 pandemic.

Methods. The COVID-19 African Rheumatology Study Group created an online survey consisting of 40 questions relating to the current practices and experiences of rheumatologists across Africa. The CHERRIES checklist for reporting results of internet e-surveys was adhered to.

Results. A total of 554 completed responses were received from 20 countries, which include six in Northern Africa, six in West Africa, four in Southern Africa, three in East Africa and one in Central Africa. Consultant grade rheumatologists constituted 436 (78.7%) of respondents with a mean of 14.5 ± 10.3 years of experience. A total of 77 (13.9%) rheumatologists avoided starting a new biologic. Face-to-face clinics with the use of some personal protective equipment continued to be held in only 293 (52.9%) rheumatologists' practices. Teleconsultation modalities found usage as follows: telephone in 335 (60.5%), WhatsApp in 241 (43.5%), emails in 90 (16.3%) and video calls in 53 (9.6%). Physical examinations were mostly reduced in 295 (53.3%) or done with personal protective equipment in 128 (23.1%) practices. Only 316 (57.0%) reported that the national rheumatology society in their country had produced any recommendation around COVID-19 while only 73 (13.2%) confirmed the availability of a national rheumatology COVID-19 registry in their country.

Conclusion. COVID-19 has shifted daily rheumatology practices across Africa to more virtual consultations and regional disparities are more apparent in the availability of local protocols and registries.

Key words: COVID-19, Africa, rheumatology, DMARD, rheumatic and musculoskeletal diseases, telemedicine

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Rheumatology key messages

- COVID-19 has led to major changes in the delivery of rheumatology services across Africa.
- There are wide disparities between the five regions of Africa in the availability of rheumatologists.
- Many rheumatologists report the lack of national rheumatology guidelines or registries relating to COVID-19.

Introduction

Africa has long battled the double burden of infections and non-communicable diseases. Despite this, the COVID-19 pandemic has thrown up new challenges that have further compromised the inadequate rheumatology services across the continent. There is a wide disparity in the standard of healthcare available among countries in Africa and this is particularly striking with the management of rheumatic and musculoskeletal diseases (RMDs). Some countries do not have any practicing rheumatologist and in most parts of the continent, rheumatology is a relatively young specialty with national rheumatology societies either nonexistent or not fully functional [1]. Across Africa, there is also a shortage of physical and occupational therapists, podiatrists and rheumatology specialist nurses.

Uncertainties regarding the risk of contracting COVID-19 in patients taking DMARDs have generated concerns among rheumatologists and patients alike. However, currently available data suggest that RMD patients are not at a greater risk than the general population [2]. In Australia, 80% of rheumatology clinic consultations are now done remotely via telephone consultations while inpatient care is provided by a few personnel with infection control measures [3]. Scaling up of telemedicine services in response to the pandemic may be impracticable in many African countries where such services are non-existent or relatively underdeveloped. Despite these limitations, the current situation may be an opportunity for the creative use of available technology to ensure patient care in both urban areas and remote rural communities.

Outside Africa, recommendations have been developed by rheumatology societies in America, Europe, Asia and Australia [4–7]. Some of these, where applicable, are being adopted by African practitioners, although African guidelines are currently under development by a taskforce of the African League Against Rheumatism. The ACR recommends that in addition to standard protective measures, patients should continue most of their medications except when infected by COVID-19. Advocacy for protected supply of HCQ for rheumatic patients has also been made in view of shortages caused by initial claims of its efficacy in treating COVID-19 [5].

With similar challenges faced by the relatively small African rheumatology workforce, it seemed appropriate to examine our peculiar situation [1]. The COVID-19 African Rheumatology Study Group was formed as a network of rheumatologists from all regions of the continent. It heralds a pan-African collaboration that will hopefully address unmet needs in rheumatology research and practice. This study aimed to identify changes in rheumatology service delivery due to COVID-19 and to highlight the regional disparities.

Methods

The COVID-19 African Rheumatology Study Group was formed through the network of the African League Against Rheumatism. An online survey was created using the surveygizmo application (available at www.surveygizmo.eu). It consisted of 40 practice and experience questions covering the following domains: changes in patient management; changes in rheumatology service delivery; protocols, recommendations and the roles of national rheumatology societies; observed patient behaviours and key rheumatologist concerns regarding COVID-19. The survey was administered in English and French versions (see Supplementary Material, available at *Rheumatology* online) and pretested in six African countries. Content and face validity were tested by eight consultant rheumatologists, 12 rheumatology fellows and 12 non-rheumatologist physicians and the final versions were accepted by all co-researchers after four reviews. The questionnaire was designed to be completed in 6 minutes.

All consenting consultant grade and training fellows in rheumatology in all member countries of AFLAR were invited to participate via email and WhatsApp groups of AFLAR, national rheumatology societies and regional or local networks. The survey ran for a week spanning between 28 April and 4 May 2020 in all countries except in Egypt where it ran between 1 and 7 May, inclusive. The CHERRIES checklist for reporting results of internet e-surveys was adhered to [8]. Exported data was entered into Stata version 16 for analysis and incomplete responses were excluded from the analysis. Data were summarized using frequencies and proportions. Institutional ethical approval was not required for this study.

Results

A total of 568 responses were received out of which 14 were incomplete. The 554 completed responses were received from 20 countries and included in the analysis.

The countries captured included six in Northern Africa, six in West Africa, four in Southern Africa, three in East Africa and one in Central Africa. It was not possible to ascertain the total number of rheumatology doctors on the continent to calculate the response rate. In the countries where these figures could be verified, not <20% response rate per country (e.g. 43 out of 123 in South Africa) and up to 100% in the countries with fewer practitioners (e.g. 12 out of 12 in Kenya and one out of one in Benin) was achieved. Northern, Southern and West Africa had 431 (77.8%), 54 (9.8%) and 43 (7.8%) responses, respectively; while 20 (3.6%) were obtained from East Africa and six (1%) from Central Africa. The respondents comprised of 437 (78.9%) consultants and 117 (21.1%) fellows in training with an overall mean age of 42.6 ± 11.2 years. There were 400 (72.2%) female respondents and the mean duration of practice experience among the consultants was 14.5 ± 10.3 years. Table 1 shows the breakdown of respondents across countries and regions.

The changes to the practices of the respondents are shown in Table 2. Clinical advice on self-isolation, social distancing and shielding have been given by 498 (89.9%), 548 (98.9%) and 240 (43.3%) respondents, respectively. The advice to use complementary and alternative medicine against COVID-19 has been given by 182 (32.9%) while 271 (48.1%) have advised the use of vitamins to boost immunity against COVID-19. Conventional synthetic DMARDs like methotrexate were maintained in 500 (90.3%), reduced in 36 (6.5%), deferred in seven (1.3%) and stopped in 11 (2.0%). A total of 77 (13.9%) rheumatologists avoided starting a new biologic for fear of patient predisposition to SARS-CoV-2 infection. The prescription of HCQ as COVID-19 prophylaxis had been done by 19 (3.4%) respondents.

The changes being experienced in services are as in Table 3. Face-to-face clinics with the use of some personal protective equipment continued to be held in 293 (52.9%) rheumatologists' practices. Teleconsultation modalities that were being used included videos in 53 (9.6%), telephone in 335 (60.5%), e-mails in 90 (16.3%) and mobile chats such as WhatsApp in 241 (43.5%) respondents. Sixty-eight (12.3%) respondents were not doing any form of physical examinations, while physical examinations were reduced in 295 (53.3%) or done with personal protective equipment in 128 (23.1%) practices. Seventy-seven (13.9%) rheumatology services did not have allied health professional (AHP) clinics prior to now but since the onset of the pandemic, AHP services have reduced in 266 (48.0%) and completely shut down in 199 (35.9%).

There were disparities in the availability of COVID-19 recommendations produced by national bodies across different regions. Only 316 (57.0%) reported that they had such published recommendations and these were 258 (46.6%) in Northern and 34 (6.1%) in Southern Africa. Most participants had no locally agreed protocol on DMARD use or national rheumatology COVID-19 registry in their country of practice. Table 4 shows the local and national practices across the five regions.

Discussion

This collaborative effort represents one of the ongoing attempts to build African rheumatology beyond regional or language barriers. Although respondents were predominantly from Northern Africa, this study had a pan-African spread with participation from 20 countries. The relatively low representation from central and, to some extent, West Africa may have resulted from unsuccessful efforts to engage the few rheumatologists from some francophone countries in those regions. Overall, African rheumatology appears to be female dominated with the average age of respondents being 42.6 years. This represents an active population with many research possibilities if properly harnessed. Although, there is ample experience (mean practice duration of 14.5 years) from the bulk of rheumatologists who happen to be consultants, there is a need to improve specialist training capacity in order to cater for the growing burden of RMDs. Adult rheumatologists form the bulk (53.4%) with pure paediatric rheumatologists being a rare species at 2.7%. Hence, there is unarguably an urgent need for paediatric rheumatology across the continent [9].

As of the end of July, cases of COVID-19 in Africa have exceeded 800 000 and recorded deaths are over 17 500 [10]. Rheumatologists have found themselves in the position of having to advise patients to self-isolate, socially distance or even completely shield away from all potential exposure to other people through whom they might be at higher risk of contracting the novel coronavirus. However, shielding advice was provided by less than half of African rheumatologists. This is likely because most African countries do not have robust social welfare programs as in the high-income countries and as such they cannot provide the necessary government support for full shielding of vulnerable individuals. As a long list of manifestations of COVID-19 that may mimic those of RMDs have been identified [11], rheumatologists are saddled with the moral burden of preventing patients from being infected with SARS-CoV-2 and to separate a flare-up of RMDs from what could be COVID-19 symptoms.

In the face of the current realities, there has been a noticeable switch to more remote consultations using telephones or chat applications. Use of e-mails and videoconferencing are still unpopular, likely due to technological limitations. A single-centre report from Australia has described remarkable success using telerheumatology for up to four-fifths of outpatient appointments [3]. In order to maintain access to care for patients on self-isolation or in areas on lockdown, telemedicine may serve as a useful adjunct to usual care, especially for stable chronic diseases that do not require frequent in-patient care [12].

Available data has not established a deleterious impact of ongoing treatment with DMARDs on the risk of infection with SARS-CoV-2 or outcome of COVID-19 [13–15]. However, it is perhaps unsurprising that rheumatologists may exhibit some uneasiness prescribing

TABLE 3 Changes in services

	Northern Africa $n = 431$ (%)	West Africa $n = 43$ (%)	Central Africa $n = 6$ (%)	East Africa $n = 20$ (%)	Southern Africa $n = 54$ (%)	Total $n = 554$ (%)
HCQ shortage experienced	271 (62.9)	39 (90.7)	6 (100.0)	10 (50.0)	42 (77.8)	368 (66.4)
Current out-patient service						
None (all shut down)	30 (7.0)	7 (16.3)	1 (16.7)	4 (20.0)	6 (11.1)	78 (14.1)
Clinic visits as before	231 (53.6)	18 (41.9)	5 (83.3)	10 (50.0)	26 (48.1)	46 (8.3)
Face to face with some PPE use	35 (8.1)	4 (9.3)	0 (0.0)	1 (5.0)	12 (22.2)	293 (52.9)
Video consultation	255 (59.2)	34 (79.1)	4 (66.7)	10 (50.0)	32 (59.3)	53 (9.6)
Phone	60 (13.9)	6 (14.0)	0 (0.0)	1 (5.0)	23 (42.6)	335 (60.5)
Emails	183 (42.5)	32 (74.4)	2 (33.3)	6 (30.0)	18 (33.3)	90 (16.3)
Chats e.g. WhatsApp	55 (12.8)	9 (20.9)	0 (0.0)	4 (20.0)	13 (24.1)	241 (43.5)
Mode of physical examination						
None	51 (11.8)	5 (11.6)	0 (0.0)	1 (5.0)	9 (16.7)	68 (12.3)
Reduced	223 (51.7)	29 (67.4)	5 (83.3)	11 (55.0)	45 (83.3)	295 (53.3)
Full exams with PPE	86 (20.0)	13 (30.2)	2 (33.3)	4 (20.0)	18 (33.3)	128 (23.1)
Pictures/videos	82 (19.0)	10 (23.3)	0 (0.0)	0 (0.0)	9 (16.7)	104 (18.8)
Full exams as before COVID	67 (15.5)	2 (4.7)	1 (16.7)	4 (20.0)	6 (11.1)	76 (13.7)
Changes to rheumatology AHP clinics						
Never had these	70 (16.2)	2 (4.7)	0 (0.0)	0 (0.0)	5 (9.3)	77 (13.9)
Had but now shut down	177 (41.1)	8 (18.6)	0 (0.0)	5 (25.0)	9 (16.7)	199 (35.9)
Reduced service	180 (41.8)	29 (67.4)	5 (83.3)	15 (75.0)	37 (68.5)	266 (48.0)
Functioning as before	3 (0.7)	4 (9.3)	1 (16.7)	0 (0.0)	3 (5.6)	11 (2.0)
Changes to blood monitoring for DMARDs						
No changes	29 (6.7)	11 (25.6)	0 (0.0)	2 (10.0)	0 (0.0)	42 (7.6)
Reduced frequency	220 (51.0)	19 (44.2)	1 (16.7)	13 (65.0)	23 (42.6)	276 (49.8)
Suspended	54 (12.5)	1 (2.3)	0 (0.0)	3 (15.0)	7 (13.0)	65 (11.7)
Not offered in the service	127 (29.5)	12 (27.9)	5 (83.3)	2 (10.0)	24 (44.4)	170 (30.7)

AHP: allied health professional; PPE: personal protective equipment.

TABLE 4 Local and national practices

	Northern Africa $n = 431$ (%)	West Africa $n = 43$ (%)	Central Africa $n = 6$ (%)	East Africa $n = 20$ (%)	Southern Africa $n = 54$ (%)	Total $n = 554$ (%)
Has the national rheumatology society in your country produced any recommendation around COVID-19?						
Yes	258 (59.9)	13 (30.2)	2 (33.3)	9 (45.0)	34 (63.0)	316 (57.0)
No	154 (35.7)	25 (58.1)	4 (66.7)	11 (55.0)	17 (31.5)	211 (38.1)
There is no national body	19 (4.4)	5 (11.6)	0 (0.0)	0 (0.0)	3 (5.5)	27 (4.9)
Any locally agreed protocol on DMARD use in your centre?						
Yes	182 (42.2)	11 (25.6)	2 (33.3)	5 (25.0)	27 (50.0)	227 (41.0)
No	204 (47.3)	31 (72.1)	4 (66.7)	15 (75.0)	24 (44.4)	278 (50.2)
Not applicable	44 (10.2)	7 (16.3)	0 (0.0)	0 (0.0)	3 (5.6)	54 (9.8)
Any national rheumatology COVID-19 registry in your country?						
Yes	57 (13.2)	3 (7.0)	0 (0.0)	1 (5.0)	12 (22.2)	73 (13.2)
No	179 (41.5)	24 (55.8)	5 (83.3)	11 (55.0)	24 (44.4)	243 (43.8)
Not aware	195 (45.2)	16 (37.2)	1 (16.7)	8 (40.0)	18 (33.3)	238 (43.0)

March 2020 to gather data on a worldwide scale relating to RMDs and COVID-19 [21]. Currently, enrolment in the physician registry stands at 3814, while the patient-facing registry has 13 110 contributions including 787 with COVID-19 [22]. Beyond COVID-19, disease registries for various RMDs, which afflict Africans sometimes more than people in other regions of the world, will be useful for providing richer perspectives to disease burden and their characteristics. Hopefully, this would lead to more research into developing specific therapies.

The strength of this survey is in its pan-African reach, a feat that sensitizes rheumatologists across the

continent to the collective needs for more Afrocentric rheumatology research activity. A limitation is the inability to calculate the response rate as the total number of individuals reached could not be verified. In conclusion, COVID-19 has caused significant changes to rheumatology practice across Africa. In the midst of new challenges and responsibilities, there is a need to bridge identified regional and national disparities, improve service delivery, increase telemedicine usage, encourage collaborative research and take advantage of the pandemic to positively reshape African rheumatology.

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Data Availability statement: Data is available upon request.

Supplementary data

Supplementary data are available at *Rheumatology* online.

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