The role of Sudanese diaspora and non-governmental organizations (NGOs) in health system in Sudan: towards better future and a model of social accountability

The legacy of British doctors and their contribution in establishing medical research and the medical school in the Sudanese capital Khartoum was well documented in the literature. For example, the financial and moral support provided by Sir Henry Solomon Wellcome, in the early 19th century gave Dr. Andrew Belfour an opportunity to build in Khartoum one of the best medical services in the world at that time. This achievement was associated with the establishment of a modern medical school in Khartoum and the Wellcome tropical research laboratories (1-3). Sudan was an attractive place for British doctors to make a fortune and conduct state of the art research work to get promoted within their academic and medical career in the UK (3-5). Dr. John Brian Christopherson was the first clinician in the world to conduct clinical trials in schistosomiasis in Khartoum Civil Hospital, and his study was published in the *Lancet*. Dr. Albert Chalmers was appointed director of the Wellcome Tropical Research Laboratories in Khartoum (WTRLK) in 1913, succeeding Andrew Balfour. Chalmers' research concentrated on the taxonomy and pathogenicity of bacteria and fungi but he also worked on miscellaneous dermatological disorders and on sleeping sickness, and a prize in his name is regularly awarded for best research in tropical medicine by Royal Society of Tropical Medicine and Hygiene (RSTMH) (3,4). Over many decades and still going on, large proportions of Sudanese doctors received their postgraduate medical training in the National Health Service (NHS), UK or obtained degrees from British universities. Therefore, it is not surprising that many Sudanese doctors in UK and Ireland continued to support their health system in Sudan through different charitable organizations. Examples of such organisations are Salamat charity (https://salamatcharity.org), Sudan Medical Care Foundation (SMCF) (www.medics-sd.org), Sudanese Medical Association in UK and Ireland (http://www.sssuk.org/drupalSite/?q=content/sudanese-medical-association-uk-i) and Sudanese doctors' unions in UK and Ireland (https://www.sdu.org.uk). It worth mentioning that the Sudanese American Medical Association (SAMA) in USA (https://sama-sd.org), contributed in similar scale to Sudanese medical charities in UK and Ireland. Other medical Sudanese charities in the Gulf countries also contributed toward the benefit of the health system in Sudan. Abdalla *et al.* concluded that despite the small scale of contribution of Sudanese medical diaspora, their contribution has remarkable effect in improving academia and specialist services in Sudan. Abdalla *et al.* recommended the need to establish a coordinating body from within the healthcare sector in Sudan to effectively coordinate diaspora contributions (6).

In this special issue we have tried to highlights the contributions of Sudanese medical diaspora and local non-governmental organizations (NGOs) in the development of the health care system in Sudan. The reader may find the special issue covered different disciplines and this can be attributed to the contributions of different specialists. For instance, the Sudanese medical diasporas in Qatar led by Dr. Osama Yousif Algibali, have adopted an initiative to treat children with congenital heart disease in Sudan for 6 years. Different NGOs in Sudan and outside contributed in this project. For example, Patients Helping Fund (PHF) the largest medical charity in Sudan, Eid Althani charity association in Qatar with collaboration of the Federal Ministry of Health (FMH), Ministry of Health in Khartoum state and both Gezira University and Gezira state. This project has helped in treating large numbers of children with congenital heart disease (7). The special issue included a review article about one of the promising and pioneer NGO in Sudan called Save A Life Initiative (SALI); that considered as second generation of PHF (8). We have also included three articles about medical education in Sudan. Dr. Ibn Auf showed that despite the high perceptions of Sudanese doctors for research, lack of funding remains the most important barrier to research (9). Dr. Husain showed that the level of professional knowledge of the final-year medical students in Sudan is very good and this combined with excellent attitudes in community protection, readiness to serve rural areas and most importantly non-judgemental and non-discriminatory approach (10). Dr. Zulfu showed that pathologist and trainees in pathology have a good level of satisfaction with postgraduate pathology training in Sudan (11). Future reform of the histopathology curriculum will help to increase graduate's satisfaction and will consequently result in improving pathology training and services. Chronic diseases like diabetes and HIV were also included in this special issue. For example, Dr. Khogali showed that more work is needed in order to enhance knowledge, attitude and practice of Sudanese individuals with type 2 diabetes towards their

anti-diabetic medication (12). Dr. Jervase and others wrote comprehensive review article about HIV in South Sudan in collaboration with Dr. Dushyant Mital, consultant in HIV medicine in Milton Keynes University Hospital, UK (13). Joined article by final year medical students at Buckingham Medical School, UK and Dr. Ahmed and Dr. Mital about whether the HIV metabolic clinic established in Milton Keynes University can be replicated in sub-Saharan African countries (14). This reflects parts of the initiative and contributions of Milton Keynes University Hospital towards the global health.

Furthermore, Milton Keynes University hospital established educational and research collaborations with more than five Sudanese medical colleges over the last 5 years (please see publications by Almobarak *et al.*, Awadalla *et al.* and Ahmed *et al.*). This have helped in term of teaching outcomes, research and development, publications, numbers of postgraduate students supervised, stability and promotion of academic staff in Sudan especially in hard to recruit areas, e.g., females. This kind of knowledge transfer will come not only with the benefit for overseas countries but also will increase job satisfaction for the doctors during their employment in the NHS. This model also meets that inner desire of these doctors to have that sense of contribution towards their home countries.

Therefore, one of our ambitions in the near future is to establish Sudanese-British Medical Research Charitable Foundation (SBMRF). The main aim of SBMRF is to bring the Sudanese medical researchers from around the globe to work with local universities, research centers and hospitals in Sudan. Another aim of SBMRF is to help non-Sudanese researchers to collaborate with Sudanese researchers and apply for research funding. Ultimately, this will help in knowledge transfer (the charity is under development, needs to be registered in the UK and Sudan, website development and funding).

This model for knowledge transfer can be associated with many benefits. The NHS as organization can be involved and promote social accountability towards health system in other resource limited countries at no financial cost. This model provides mutual benefit for UK and African nations, so it can be regarded as one solution for Africa's "medical brain drain" to western nations (15). This model can be replicated in other countries and other continents particularly with the use of information technology (IT)-based technologies like Skype, WhatsApp and Facetime, make communication and supervision of postgraduate students achievable. The potential benefits for African countries are enormous with improvements of health care systems, staff training, opportunity for staff promotion, retention of high calibre healthcare workers, emphasising a culture of research and development, importance of teamwork and collaboration and eventual increased job satisfaction. This in turn creates future healthcare leadership and opportunities to work and collaborate with other health authorities and local and international NGOs.

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References

1. Elhadd TA. Sir Henry Solomon Wellcome and Dr Andrew Balfour: an enterprise on the Nile and the early foundation of public health and medical research in the Sudan (1899-1935). J R Coll Physicians Edinb 2015;45:165-72.
2. Adeel AA. Henry Solomon Wellcome: A philanthropist and a pioneer sponsor of medical research in the Sudan. Sudan J Paediatr 2013;13:84-102.
3. Adeel AA. When history was made in Khartoum Civil Hospital: First introduction of chemotherapy for schistosomiasis. Sudan J Paediatr 2015;15:80-99.
4. Adeel AA. Albert Chalmers: Perpetual honours for a prominent tropical medicine career in the Sudan. Sudan J Paediatr 2014;14:101-10.
5. Adeel AA. Robert Archibald: A pioneer of tropical medicine in the Sudan: "I feel my heart is in that country and my work too" (Archibald, writing about being away from the Sudan during the First World War). Sudan J Paediatr 2012;12:77-80.
6. Abdalla FM, Omar MA, Badr EE. Contribution of Sudanese medical diaspora to the healthcare delivery system in Sudan: exploring options and barriers. Hum Resour Health 2016;14:28.
7. Algibali OY, Juma BE, Algibaly RO, et al. The role of diaspora and non-governmental organization in helping Sudanese children with congenital heart diseases: 6 years' paediatric cardiac surgery camps experience. J Public Health Emerg 2018;2:26.
8. Awadalla H, Janahi IA, Dombkins D, et al. Save A Life (SALI) model: an intervention model to achieve development goals through public NGO partnership (PNP), capability development and evidence-based practice. J Public Health Emerg 2018;2:24.
9. Ibn Auf A, Awadalla H, Ahmed ME, et al. Perception, barriers, and practice of research among teaching staff at five Sudanese medical faculties. J Public Health Emerg 2018;2:22.
10. Husain NE, Elsheikh NM, Elsheikh MN, et al. Final year medical students and professionalism: lessons from six Sudanese medical schools? J Public Health Emerg 2018;2:27.
11. Zulfu AA, Abass SK, Awadalla H, et al. Assessment of pathology trainees' satisfaction: results of a survey from Sudan. J Public Health Emerg 2018;2:29.
12. Khogali SS, Ali WA, Mohamed SY, et al. Knowledge, attitude and practice of Sudanese individuals with type 2 diabetes about medication used in treatment of diabetes, hypertension and dyslipidaemia: a matter of debate or matter of concern? J Public

Health Emerg 2018;2:23.
13. Jervase A, Tahir H, Modi JK, et al. HIV/AIDS in South Sudan past, present, and future: a model of resilience in a challenging context. J Public Health Emerg 2018;2:31.
14. Ahmed MH, Gooneratne S, Bondje S, et al. HIV metabolic clinic: can the journey start from a UK clinic to a sub-Saharan African nation? J Public Health Emerg 2018;2:28.
15. Makasa E. Africa's medical brain drain: why I want to stay in Africa. BMJ 2005;331:780; discussion 780-1.

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