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LETTER TO THE EDITOR

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Is physiotherapy ready for the management of COVID-19 in Africa? – Snippets of anecdotal evidences in two African countries

1 | INTRODUCTION

By the time COVID-19 was officially declared as a pandemic by the WHO on the 11th March 2020, more than 114 countries were already infected (Anjorin, 2020; Sohrabi et al., 2020. In Africa, there has been a comparatively lower number of cases of COVID-19 across the continent. However, in the first week of April 2020, the Africa Centres for Disease Control and Prevention (Africa CDC) reported that there were 10,075 cases of COVID-19 amongst the 52 member states of the African Union (Nkengason, 2020). Though still under-reported, the two countries with the highest number of cases in each region of the continent were Algeria and Egypt (Northern), Cameroon and Democratic Republic of Congo (Central), Mauritius and Kenya (Eastern) Burkina Faso and Cote d'Ivoire (Western), and South Africa and Zambia (Southern). In addition, the wide spread of non-communicable diseases in Africa, such as chronic obstructive pulmonary disease (COPD), heart disease, hypertension and diabetes are known risk factors for severe cases of COVID-19 (Guan et al., 2020). This is a major concern for Africa as there are 19 million adults aged between 20 and 79 years, with 60% of the population with undiagnosed diabetes (International Diabetes Federation, 2019). The spread of COVID-19 in the African continent is therefore of great concern (Nkengason & Mankoula, 2020).

Acute respiratory distress syndrome (ARDS) is a common and often lethal clinical syndrome in CORVID-19 with a complex underlying pathophysiology (Hart & Black, 2019). Physiotherapy intervention in the Intensive Care Unit (ICU) was associated with saving lives (Chung & Mueller, 2011) and decreasing mortality (Munshi et al., 2017). The WCPT has developed guidelines for the physiotherapy management of COVID-19 in acute hospital settings (Thomas et al., 2020), and these inform the protocols developed in member countries (Lazzeri et al., 2020). There are currently no local guidelines or recommendations on the provision of physiotherapy management for patients with COVID-19 in Mauritius, South Africa and other African countries. Therefore, the aim of this commentary is to report on the preparedness of physiotherapy in the clinical management of COVID-19 in Africa, using updates from Mauritius and South Africa. This commentary also aims to advocate for the potential role of physiotherapy in the management of infected patients in Africa.

2 | COVID-19 IN MAURITIUS AND SOUTH AFRICA

The clinical situation of COVID-19 has been rapidly changing in Mauritius. A COVID-19 Task Force, led by the Prime Minister, manages the epidemic in Mauritius. The Ministry of Health and Wellness guides the clinical management of COVID-19. On March 19, 2020, three cases of COVID-19 infections were confirmed, following which the government of Mauritius applied a national lockdown as from the March 20, 2020, and has been extended to May 4, 2020. The initial lockdown was followed by a sanitary curfew since the March 23, 2020 till date. So far, 8,718 confirmatory tests for COVID-19 have been carried out. As at April 15, 2020, there were 324 confirmed cases of COVID-19, including 250 active cases, 9 fatalities and 65 recoveries (National Communications Committee, 2020).

Similarly, as of April 14, 2020, out of 870,222 people tested in South Africa, 2,415 were positive, including 27 deaths and 410 recoveries(National Department of Health, 2020). A 21-day national lockdown was applied from March 26, 2020 and has now been extended till the end of April 2020. The government's response is broken up into three clusters, namely (a) the Ministerial Advisory Committee which is a 45-member body of experts from a variety of health, infectious diseases, epidemiology and other specialities who guide government's overall response to the Covid-19 epidemic; (b) the National Command Council (NCC) which coordinates the government's responses at political level. It is chaired by the President and comprises cabinet members from key portfolios impacted by the disease, such as Home Affairs, Justice, Correctional Services and Police; (c) the National Joint Operational and Intelligence Structure, which advises the NCC. It includes mainly government officials, law enforcement agencies and representatives of the provinces.

Both countries seem to experience a relatively smaller epidemic of COVID-19 as compared to European counterparts. However, if Mauritius suffers from an exponential increase in COVID-19 contaminations, the number of cases is predicted to reach above 1,500. Similarly, an exponential increase in South Africa was projected to be over 4,000 by April 1, 2020. These exponential projections would put further demands beyond the current capacity of the national health systems. Since the implementation of the national lockdowns, both countries have managed to slow down the number of infections. Therefore, it is critical to pay attention to the preparedness of the healthcare workers and ensure

the integration of physiotherapy into the multidisciplinary health care team for COVID-19. However, African countries still suffer from a critical shortage of physiotherapists (Frantz, 2007).

3 | PREPAREDNESS OF PHYSIOTHERAPY

The number of physiotherapists per 100,000 of the population range from one in Cameroon to five in Mauritius to 13 in South Africa(World Confederation of Physical Therapy, 2019). Currently, it is unclear how many physiotherapists are part of the clinical management team for COVID-19 patients in Mauritius, South Africa, and other African countries. However, while early physiotherapy has been identified as an important therapeutic tool and has become an important evidence-based component in the management of these patients, availability and quality of physiotherapy performed in ICUs is often of concern (Ambrosino & Makhabah, 2013). African countries are likely to suffer from a lack of resources to effectively manage COVID-19, with regards to their capacity to test, availability of protective personal equipment (PPE), capacity of treatment centres, quality of the medical treatment and the quality and amount of other essential services such as respiratory physiotherapy. It is likely that there is a lack of specialized physiotherapists in respiratory care in African countries.

While there is no available information about Mauritius, the second author (SM) is one of the very few physiotherapists in South Africa with expertise in respiratory care. Based on her personal experience in consulting in a private hospital in Cape Town, she acknowledged that limited human and equipment resources in the ICU impact negatively on the quality of care provided to affected patients. Many of the state and private hospitals are under resourced with physiotherapists who specialize in cardiorespiratory care, and the need to upskill available physiotherapists as well as improving their access to basic equipment like PPE become essential. Physiopedia offers four free online courses emphasizing infection, prevention and control of COVID-19, the role of physiotherapy in COVID-19 and the respiratory management of people with COVID-19 (Physioplus, 2020). The Australian Physiotherapy Association is also offering a 2-day virtual training course free to international physiotherapists on cardiorespiratory physiotherapy in the ICU that comprehensively covers mechanical ventilation, COVID-19 Physiotherapy guidelines, oxygen therapy, non-invasive and advanced ventilation, hyperinflation techniques, exercise and mobilization in ICU with video demonstration of those techniques amongst others (Australia Physiotherapy Association, 2020). There is possibility that these online trainings may not be accessible due to inadequate Internet and information systems or a lack of access to electricity (Mahler, Montes, & Newhouse, 2019). Therefore, collaborations between countries within the same region in the continent are strongly recommended to support training and up-skilling in respiratory physiotherapy. In remote locations that lack Internet access for online training, extensive collaborations are recommended between treatment centres in adjacent capital cities and the remote sites. The training should also pay attention to donning, the specific sequence for putting on protective wear and doffing the subsequent removal of protective wear after contact with a COVID-19 patient.

In addition to respiratory physiotherapy in acute hospital settings and critical care, three other clinical applications of physiotherapy to improve health outcomes after contamination have been identified. First, provision of physiotherapy to initiate rehabilitation soon after the acute phase of respiratory distress needs to be prioritized so as to reduce the adverse effects of ARDS (Herridge et al., 2011). Second, it is proposed that patients having mild to moderate symptoms should take part in monitored moderate intensity physical activity and exercise interventions to maintain or enhance their physical fitness, cardiorespiratory function and build their immune response (Martin, Pence, & Woods, 2009; Nieman &Wentz, 2019). Third, it is proposed that delivery of physical activity and exercise interventions are explored amongst people in quarantine.

4 | CONCLUSIONS

The physiotherapy management in COVID-19 in Mauritius, South Africa, and other African countries is currently unclear. This paper advocates for physiotherapists to play a proactive role by increasing preparedness for respiratory physiotherapy in intensive care for patients with COVID-19 and for early rehabilitation in the post-acute phase of COVID-19 to minimize the impact of COVID-19 in Africa.

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REFERENCES

Ambrosino, N., & Makhabah, D. (2013). Comprehensive physiotherapy management in ARDS. *Minerva Anestesiologica*, *79*(5), 554–563.

Anjorin, A. (2020). The coronavirus disease 2019 (COVID-19) pandemic: A review and an update on cases in Africa. *Asian Pacific Journal of Tropical Medicine*, *13*(4), 1-5.

Australia physiotherapy association. (2020). Physiotherapy Virtual Cardiorespiratory ICU Update. Retrieved from https://australian.physio/VirtualCardioICU

Chung, F., & Mueller, D. (2011). Physical therapy management of ventilated patients with acute respiratory distress syndrome or severe

acute lung injury. *Physiotherapie Canada*, *63*(2), 191–198. https://doi.org/10.3138/ptc.2010-10

Frantz J. (2007). Challenges facing physiotherapy education in Africa, *The Internet Journal of Allied Health Sciences and Practice*, *5*(4), Article 7.

Hart, R., & Black, E. (2019). Acute respiratory distress syndrome. *Anaesthesia and Intensive Care Medicine*, *20*(11), 658–662. https://doi.org/10.1016/j.mpaic.2019.09.006

Herridge, M. S., Tansey, C. M., Matte, A., Tomlinson, G., Diaz-Granados, N., Cooper, A., … Cheung, A. M. (2011). Functional disability 5 years after acute respiratory distress syndrome. *The New England Journal of Medicine*, *364*(14), 1293–1304. https://doi.org/10.1056/NEJMoa1011802

International Diabetes Federation. (2019). *IDF DIABETES ATLAS* 9th edition 2019. International Diabetes Federation.

Guan W, Ni Z, Hu Y, et al. (2020). Clinical characteristics of CoronavirusDisease 2019 in China. *New England Journal of Medicine*, *382*, 1708–1720. https://doi.org/10.1056/NEJMoa2002032

Lazzeri, M., Lanza, A., Bellini, R., Bellofiore, A., Cecchetto, S., Colombo, A., … Frigerio, P. (2020). Respiratory physiotherapy in patients with COVID-19 infection in acute setting: A position paper of the Italian Association of Respiratory Physiotherapists (ARIR). *Monaldi Archives for Chest Disease*, *90*(1), 163–168. https://doi.org/10.4081/monaldi.2020.1285

Mahler, D. G., Montes, J., & Newhouse, D. L. (2019). Internet access in sub-Saharan Africa (English). *Poverty and Equity Note*, *13*. Retrieved from. http://documents.worldbank.org/curated/en/518261552658319590/Internet-Access-in-Sub-Saharan-Africa

Martin, S.A., Pence, B.D. & Woods, J.A. (2009). Exercise and respiratory tract viral infections. *Exercise and sport sciences reviews*, *37*(4), 157–164.

Munshi, L., Kobayashi, T., DeBacker, J., Doobay, R., Telesnicki, T., Lo, V., … Fan, E. (2017). Intensive care physiotherapy during extracorporeal membrane oxygenation for acute respiratory distress syndrome. *Annals of the American Thoracic Society*, *14*(2), 246–253. https://doi.org/10.1513/AnnalsATS.201606-484OC

National Communications Committee COVID-19. (2020). Press conference National Communications Committee COVID-19. Government of Mauritius: Mauritius.

National Department of Health. (2020). COVID-19 Online Resource and News Portal. Retrieved from https://sacoronavirus.co.za/

Nieman, D.C., & Wentz, L.M. (2019). The compelling link between physical activity and the body's defense system. *Journal of Sport and Health Science*, *8*(3), 201–217.

Nkengasong, J. (2020). Africa CDC leads continental response to COVID-19 outbreak in Africa: *Statement by the Director of Africa CDC*. [cited 2020 13th April]; Available from: https://africacdc.org/news/africa-cdc-leads-continental-response-to-COVID-19-outbreak-in-africa-statement-by-the-Director-of-Africa-cdc/.

Nkengasong, J., & Mankoula, W. (2020). Looming threat of COVID-19 infection in Africa: act collectively, and fast. *The Lancet*, *395*(10227), 841–842.

Physioplus. (2020). Coronavirus Disease Programme. Retrieved from https://members.physio-pedia.com/learn/coronavirus-disease-programme/

Sohrabi, C., Alsafi, Z., O'Neill, N., Khan, M., Kerwan, A., Al-Jabir, A., … Agha, R. (2020). World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). *International Journal of Surgery*, *76*,71–76.

Thomas P, Baldwin C, Bissett B, et al. (2020). Physiotherapy management forCOVID-19 in the acute hospital setting: clinical practice recommendations. *Journal of Physiotheraphy*, *66*(2): 73–82. https://doi.org/10.1016/j.jphys.2020.03.011

World Confederation of Physical Therapy. (2019). Africa Region of WCPT. Retrieved from https://www.wcpt.org/africa