RESEARCH ARTICLE

Strengthening Human Resources for Health: Future Contributions to Malawi's Infectious Disease Preparedness, A Literature Review

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ABSTRACT

The strength of a national healthcare system and its ability to respond to infectious disease pandemics is dependent on its human resources for health (HRH). Through a comprehensive literature review, this paper seeks to assess human resources for health in the nation of Malawi and identify key challenges and facilitators to improve the country's pandemic preparedness strategies. An indiscriminate search of the literature revealed that poor HRH density due to poor renumeration and emigration and a disproportionate dispersion of HRH in urban versus rural regions are key challenges in the nation of Malawi. Utilizing Malawi's approach to the HIV pandemic and lessons from other Sub-Saharan African countries, this paper proposes three policy recommendations: improving the use of non-physician clinicians in healthcare settings, encouraging the deployment and retention of HRH in rural regions, and improving monetary incentives to avoid emigration of HRH. These policies can help Malawi to develop a resilient healthcare workforce with the capacity to effectively manage a future infectious disease pandemic.

INTRODUCTION

The ability of any country to effectively manage an infectious disease pandemic is contingent on their human resources for health density [1]. The World Health Organization (WHO) defines human resources for health (HRH) as individuals working in the private and public sectors, those working full-time or part-time, and those who are paid or provide services on a volunteer basis [1]. HRH play a significant role in infectious disease pandemics, especially in low and middle-income countries where their services are necessary to ensure the survival and resilience of affected communities [1]. Malawi currently struggles to improve her population health indices due to gaps in its HRH. Through a comprehensive literature review, this paper explores how HRH challenges can be addressed to improve Malawi's future infectious disease preparedness.

METHODOLOGY

A literature search was conducted using four databases: PubMed, MEDLINE Ovid, Web of Science, and JSTOR. The search terms used were "Malawi," "Human Resources for Health", and "Pandemic" (shown in Figure 1). Within "Human Resources for Health", we utilized synonyms and singular and plural tenses to ensure relevant studies were accounted for. Furthermore, we incorporated the plural tense for "Pandemic".

Key Search Terms	Related Search Terms	Total Number of Related Search Terms
Malawi	Malawi	1
Human Resources for Health	Human resources for health OR health workforce OR health manpower OR health occupations manpower OR health workforce OR manpower, health OR manpower, health occupations OR workforce, health OR health personnel OR health care professional OR health care professionals OR health care provider OR health care providers OR health personnel OR healthcare provider OR healthcare providers OR healthcare worker OR healthcare workers OR personnel, health OR professional, health care OR provider, health care OR provider, healthcare	22
Pandemic	Pandemic OR pandemics	2

Figure 1: Search Terminology

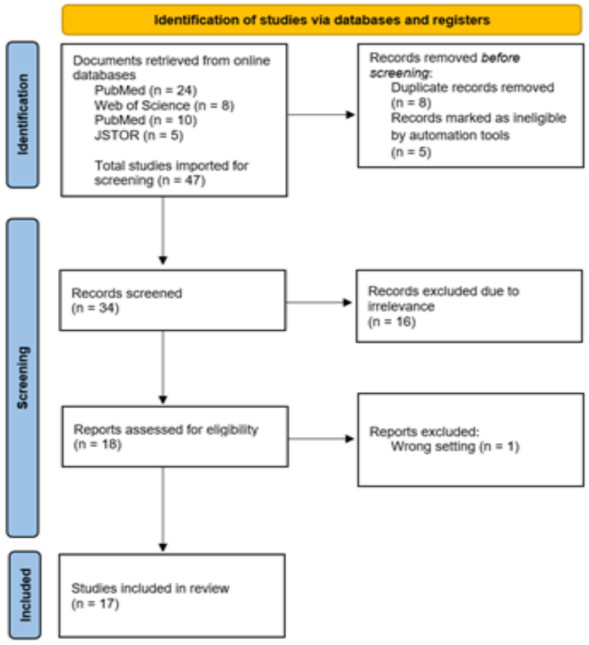

Figure 2: PRISMA Diagram. After removing duplicates, 24 articles were left, where at least two researchers identified its relevance based on its title and abstract, leaving 18 eligible articles. A full-text review was conducted to ensure significance, leaving 17 pieces for data extraction.

Three sources of grey literature and a total of 47 articles were identified to screen through Covidence. The study extraction procedure can be found in Figure 2.

DISCUSSION

Through analysis and review of the 17 selected articles, this paper presents findings from the literature search in two sections, HRH challenges in Malawi and alternative solutions to Malawi's HRH crises [2-18].

Challenges of HRH in Malawi

Poor HRH density in Malawi

Malawi's healthcare workforce has multiple factors that challenge their ability to effectively respond to an infectious disease pandemic such as shortage of healthcare workers due to emigration, and low financial remuneration [14]. The continuous loss of Malawi's healthcare workforce to migration intensified the HRH crises in Malawi, where the nursing vacancy surged to 77% in 2008 after a large emigration wave [2]. Nurses in Malawi after 1999 increased their requests to the Nursing Midwifery Council of Malawi to seek permission to emigrate and work abroad as a means of improving their financial status [2]. Malawi's Nurses and Midwives Council confirmed the impact of emigration of HRH when they stated that approximately 1,200 nurses have opted for better paying or less stressful professions that are outside of the healthcare field [14]. The disproportionate burden places front-line workers in emergency scenarios such as medical crises during a pandemic. This causes them to have to endure undue strain on an already strained HRH sector, thus minimizing the efficacy of the nation's ability to effectively manage a pandemic response.

Disparity in HRH distribution in Malawi

According to the WHO, any country with less than 2.28 doctors, nurses, and midwives per 1000 people is considered to have a "critical shortage" of healthcare personnel [4]. Malawi matches the criterion, having 0.019 doctors and 0.283 nursing and midwifery professionals per 1000 people [4]. This gap negatively affects the provision of both essential and emergency healthcare services [4]. Even though the majority of the population resides in rural areas,

the healthcare workforce is centralized in urban and district hospitals [19]. Additionally, the scarcity of HRH is exacerbated by population growth, the HIV/AIDS epidemic, and an increase in the number of infectious diseases [19].

POLICY RECOMMENDATIONS

This paper provides an understanding of the root challenges that impact Malawi's HRH sector as evident in the literature. These findings propose the need for the development of initiatives designed to improve the country's pandemic preparedness responses. Considering past initiatives within Malawi and other Sub-Saharan African countries' approaches to increase the number of healthcare personnel can serve as a preliminary step to further develop an HRH sector that provides equitable and accessible care during global health emergencies [3].

Exploring the use of non-physician clinicians

Due to the extreme shortage of healthcare workers in sub-Saharan Africa, several countries have resorted to the use of "non-physician clinicians" [3]. This paper recommends that Malawi introduce a policy that promotes the issuing of healthcare funding into public healthcare institutions to prioritize training for non-physician clinicians similar to Tanzania. In Tanzania, these healthcare cadre were called "assistant medical officers" [3]. This term refers to a wide range of care providers at the mid-level, with qualifications greater than that of a nurse but less than that of a physician. Non-physician clinicians have been known to successfully undertake the medical activities of registered physicians without doctors [3]. However, they are not required to train at a medical school. Furthermore, non-physician clinicians' professional performance and high retention rates (90 percent after seven years vs. 0 percent for physicians) in rural hospitals imply that they perform exceptionally well in terrains that are not attractive to physicians. Adapting the "non-physician clinicians" approach does have promising potentials to increase the number of healthcare personnel within Malawi in preparation for the potential onset of a future pandemic.

The Christian Health Association of Malawi (CHAM) provides about 39% of all health services and is the largest religious provider in the country. The government can support organizations like CHAM to provide training for non-physician assistance, under the supervision of the Ministry of Health [20]. Non-physician clinicians have demonstrated some level of success in providing effective and accessible care in rural regions; therefore, they can form a critical mass of healthcare personnel for Malawi's rural healthcare workforce [3]. By increasing the number of non-physician clinicians in rural regions, Malawi can take action to reduce the inequity of healthcare resources amongst rural and urban regions. Increasing the number of non-physician clinicians can eventually reduce the burden on nurses, improve accessibility to healthcare services, and ultimately increase healthcare performance in rural regions during a pandemic.

Encouraging deployment and retention of HRH in rural regions

Prioritizing equity in healthcare systems can improve care conditions within regions most heavily impacted by disease spread and poor health outcomes [18]. For instance, during the HIV pandemic, there were several NGOs that supported programs to increase resources for healthcare, however, the gap in this approach involved a high concentration of NGO services in urban regions in comparison to rural regions [17]. Having a large concentration of HRH located outside of rural regions decreases the amount of care and treatment available in these severely low-income regions. Moreover, the lack of HRH in rural regions creates a gap in its pandemic preparedness and response, resulting in continued proliferation of disease. Therefore, it is recommended that Malawi government implements policies to decentralize HRH, in specific healthcare personnel from urban to rural regions, where the impacts of infectious diseases may be more detrimental.

Improving incentives to avoid emigration of HRH

Furthermore, Malawi is heavily impacted by a shortage of healthcare workers due to poor work conditions driving the work of healthcare personnel overseas. An essential component of Malawi's approach to the human resource crisis involves incentives for workers to improve retention within the force [14]. Therefore it is essential to introduce a policy that improves the financial and non-financial incentivizes for healthcare personnel to keep them within the country, and within the public sector by increasing salaries of public healthcare workers, starting in rural regions. This can increase the presence of healthcare personnel, with a focus on rural regions to reduce disease spread and improve pandemic preparedness protocol.

CONCLUSION

Our paper acknowledges the human resource crisis in Malawi, with themes including insufficient funding, lack of healthcare personnel, and inequitable healthcare resources. To address these challenges, we propose that the Malawi government implement policies to address the gaps in access to care and also increase funding for CHAM programs and public healthcare in rural regions to improve health equity and incentivize healthcare personnel to reduce migration. Through effective implementation, these policies can help mitigate current gaps in the HRH sector in Malawi to create a resilient healthcare system with an effective infectious disease response.

REFERENCES

1. WHO. Human resources for health - WHO [Internet]. [place unknown]: 2009 [cited 2021 Dec 12]. Available from https://www.who.int/healthinfo/statistics/toolkit_hss/EN_PDF_Toolkit_HSS_HumanResources_oct08.pdf

2. Adhikari R, Grigulis A. Through the back door: nurse migration to the UK from Malawi and Nepal, a policy critique. Health policy and planning. 2014 Mar 1 [cited 2021 Dec 12];29(2):237-45. Available from https://www.researchgate.net/publication/236072318_Through_the_back_door_Nurse_migration_to_the_UK_from_Malawi_and_Nepal_a_policy_critique. doi:10.1093/heapol/czt010.

3. Bergström S. "Non-physician clinicians" in low income countries. BMJ. 2011 [cited 2021 Dec 12];342(7807):1094-95. Available from https://doi.org/10.1136/bmj.d2499.

4. Bickton FM. Strengthening human resources for health in resource-limited countries: The case of Medic to Medic in Malawi. Malawi Medical Journal. 2019 Mar 31 [cited 2021 Dec 12];31(1):99-101. Available from https://doi.org/10.4314/mmj.v31i1.17.

5. Chorwe-Sungani G. Assessing COVID-19-related anxiety and functional impairment amongst nurses in Malawi. African Journal of Primary Health Care & Family Medicine. 2021 [cited 2021 Dec 12];13(1). Available from https://doi.org/10.4102/phcfm.v13i1.2823.

6. Gerein N, Green A, Pearsonc S. The consequences of shortages of health professionals for maternal health in sub-Saharan Africa. 2012 [cited 2021 Dec 12]:44. Available from https://doi.org/10.1016/S0968-8080(06)27225-2.

7. Harries AD, Maher D, Nunn P. Practical and affordable measures for the protection of health care workers from tuberculosis in low-income countries. Bulletin of the World Health Organization. 1997 [cited 2021 Dec 12];75(5):477-89. Available from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2487014/.

8. Kruk ME. Emergency preparedness and public health systems: lessons for developing countries. American Journal of Preventive Medicine. 2008 Jun 1 [cited 2021 Dec 12];34(6):529-34. Available from https://doi.org/10.1016/j.amepre.2008.02.012.

9. Limani F, Garley D, Cocker D, Patel P, Patel P, Gordon S, Nyirenda M, Sakala S, Gadama LA, Dube Q, Bodole F. Lessons learnt from the rapid implementation of reusable personal protective equipment for COVID-19 in Malawi. BMJ global health. 2021 Sep 1 [cited 2021 Dec 12];6(9):e006498. Available from https://doi.org/10.1136/bmjgh-2021-006498.

10. Msiska G, Smith P, Fawcett T, Nyasulu BM. Emotional labour and compassionate care: What's the relationship?. Nurse education today. 2014 Sep 1 [cited 2021 Dec 12];34(9):1246-52. Available from https://doi.org/10.1016/j.nedt.2014.03.002.

11. Naidoo JR, Mulenga C. Nurses' knowledge, attitudes and practices regarding evidence-based practice in the prevention of mother to-child transmission of HIV programme in Malawi. Curationis. 2017 Apr 3 [cited 2021 Dec 12];40(1):1-8. Available from https://doi.org/10.4102/curationis.v40i1.1656.

12. Nyazika TK, Kaela R, Mugoni M, Musomekwa K, Kyei-Baafour E, Chiwanda S, Mapondera PT, Makawa TS, Sithole EM, Mavunganidze G, Manasa J. Implementation of antibody rapid diagnostic testing versus real-time reverse transcription-PCR sample pooling in the screening of COVID-19: a case of different testing strategies in Africa. MSphere. 2020 Jul 29 [cited 2021 Dec 12];5(4):e00524-20. Available from https://doi.org/10.1128/mSphere.00524-20.

13. Ormel H, Kok M, Kane S, Ahmed R, Chikaphupha K, Rashid SF, Gemechu D, Otiso L, Sidat M, Theobald S, Taegtmeyer M. Salaried and voluntary community health workers: exploring how incentives and expectation gaps influence motivation. Human resources for health. 2019 Dec;17 [cited 2021 Dec 12];17(59):1-12. Available from https://doi.org/10.1186/s12960-019-0387-z.

14. Palmer D. Tackling Malawi's human resources crisis. Reproductive health matters. 2006 Jan 1 [cited 2021 Dec 12];14(27):27-39. Available from https://doi.org/10.1016/S0968-8080(06)27244-6.

15. Patel P, Adebisi YA, Steven M, Lucero-Prisno III DE. Addressing COVID-19 in Malawi. The Pan African Medical Journal. 2020 [cited 2021 Dec 12];35(2):71. Available from https://doi.org/10.11604/pamj.supp.2020.35.2.23960.

16. Pruitt SD, Epping-Jordan JE. Preparing the 21st century global healthcare workforce. Bmj. 2005 Mar 17 [cited 2021 Dec 12];330(7492):637-9. Available from https://doi.org/10.1136/bmj.330.7492.637.

17. Zhou A. Limits of neoliberalism: HIV, COVID-19, and the importance of healthcare systems in Malawi. Global Public Health. 2021 Jun 17 [cited 2021 Dec 12]:1-8. Available from https://doi.org/10.1080/17441692.2021.1940237.

18. Zimba E, Kinney MV, Kachale F, Waltensperger KZ, Blencowe H, Colbourn T, George J, Mwansambo C, Joshua M, Chanza H, Nyasulu D. Newborn survival in Malawi: a decade of change and future implications. Health policy and planning. 2012 Jul 1 [cited 2021 Dec 12];27(3):iii88-103. Available from https://doi.org/10.1093/heapol/czs043.

19. HUMAN RESOURCES FOR HEALTH STRATEGIC PLAN [Internet]. Resakss.org. 2021 [cited 2021 Dec 8]. Available from: https://www.resakss.org/sites/default/files/Malawi%20MH%202012%20Human%20Resources%20for%20Health%20Strategic%20Plan%202012%20-%202016.pdf.

20. Ministry of Health. The health care system [Internet]. Republic of Malawi; Ministry of Health; 2016 [cited 2021 Dec 14]. Available from: http://www.health.gov.mw/index.php/2016-01-06-19-58-23/national-aids.