The Fight Against Corona Virus in Malawi: A Review of Challenges and Opportunities in the Health Sector

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Abstract

Corona Virus Disease (COVID-19) is a pandemic that has affected the whole world. Malawi has also been greatly overwhelmed by the pandemic as shown by the increased number of confirmed cases, increased deaths and increased number of people affected by the pandemic directly and indirectly. This review was aimed at exploring challenges and opportunities faced by the health sector due to the COVID-19 pandemic in Malawi. A review of relevant published literature, official documents and available COVID-19 general information was done using online search engines such as Google scholar. The review showed that the pandemic's complete eradication is faced with a number of challenges ranging from limited test kits and centres to stigmatization of COVID-19 suspects. Reports of lack of test kits and PPE in public hospitals have been common knowledge since the first wave in April 2020. Stigmatization and misinformation has led to public denial of the disease, consequently resulting in late reporting at hospitals by patients hence many deaths. Conversely, the pandemic has kept the country's medical and public health personnel actively involved in research and literature review in order to understand COVID-19. This is evidenced by science based information regarding the disease passed on to the general public by the health sector. While the pandemic has put the world medical research and vaccine development teams in top gear, local health personnel have ably analyzed different vaccine options which has enabled them to advise government. Health facilities have also amassed substantial infrastructure, financial and human resources from both public and private sectors. These resources will further propel public health care since they are in form of additional beds space, beds, and COVID-19 relevant medical equipment. COVID-19 devastation in Malawi points to the need for better health care preparedness against future pandemics

Key-words: *COVID-19, Stigmatisation, Health Facilities, Pandemic, Malawi, Review.*

1. INTRODUCTION

Coronavirus Disease, commonly known as COVID-19, is an infectious disease caused by a newly identified Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-COV2) (WHO, 2020). It is a pandemic that has threatened human life across the entire globe. The virus was first identified in December 2019 in Wuhan, China (Hui, et al. 2020; WHO, 2020). As of 10 March 2021, more than 118 million cases had been reported globally (Covid-19 Visualizer, 2021). Among the cases, more than 93 million were recoveries and 2.6 million deaths. In Malawi, the first case of COVID-19 was discovered on 2 April 2020 (Mkandawire et al., 2021). Almost a year later, a total of 32,469 cases have been recorded with 23,105 recoveries, 7,924 active cases and 1,070 deaths (MOH, 2021). This data is variable since COVID-19 is an ongoing pandemic. The disease is spread through contact with contaminated respiratory droplets from an infected person through coughing, sneezing or talking (Chih-Cheng et al., 2020; Harapan et al., 2020). Other studies have revealed that additional routes, for instance gastrointestinal, environmental and fomite contamination are contributing to COVID-19 transmission hence clinical specimens used in detection of coronavirus include: bronchiole alveolar lavage fluid, sputum, nasal swabs, feaces, pharyngeal swabs, fibronchoscope brush biopsy and blood (Gu et al., 2020). People infected with the virus may experience several symptoms including fever, cough, loss of appetite, fatigue, shortness of breath, muscle ache, diarrhea, sore throat and pains within the incubation period of 2-14 days (Kuldeep et al., 2020). The outbreak was declared a public health emergency of international concern (PHEIC) and a pandemic by World Health Organization in April 2020 (CDC, 2020; Chen et al., 2020). The WHO (2019) in their publications showed that middle aged and elderly patients with primary chronic diseases especially high blood pressure and diabetes are more susceptible to respiratory failure. Consequently, COVID-19 is usually severe and fatal in persons with under-laying conditions.

The fight against COVID-19 has to be tackled globally for the pandemic to end soon. Countries have developed preventive measures to fight COVID-19 in consultation with WHO, which is leading the fight against the pandemic by providing necessary equipment and literature to countries relating to the pandemic. Some of the preventive measures include: closing all schools; restricting large gatherings; locking down boarders; implementing hand washing/sanitizing; use of face masks; self-isolating when exposed to the virus; and maintaining 1-2 meters social/physical distance among people (Kao et al., 2021). Currently, the pandemic has no specific cure, hence vaccines are being developed as one of the preventive measures (CDC, 2020). The fight against COVID-19 in Malawi is facing a lot of challenges. However, health sector related opportunities have also come with the pandemic. Therefore, this study was aimed at reviewing some of the challenges and opportunities in Malawi.

2. CHALLENGES

In the fight against the COVID-19 pandemic, Malawi has put in place a lot of COVID-19 preventive measures. Some of the measures include: enforcing social distancing; encouraging universal use of face masks; washing hands regularly with soap; and increasing awareness about the pandemic (Kao et al., 2020). Proper enforcement of preventive measures compliance has proven to drastically reduce Covid-19 cases (Mangal et al., 2020). Malawi is experiencing numerous challenges in the fight against the COVID-19 pandemic. These include: lack of sufficient testing kits and centres; lack of adequate and appropriate personal protective equipment (PPE); no specific medication for Covid-19; stigmatization; increased pressure on health facilities due to increased number of patients; and misinformation (Annabelle, 2020).

The lack of sufficient testing kits and centers has resulted in low rates of testing, hence low detection rates of the COVID-19 cases in the country. As of 10 March 2021, only 187,784 tests had been conducted since April 2020 when the government acknowledged the existence of the disease in the country (MOH, 2021). The low detection rates do not necessarily imply few cases but it may also mean that few people have been tested over a long period of time due to insufficient testing kits and centers (Evans, 2020; Banda et al., 2020). However, the introduction of rapid antigen tests in January 2021, resulted in increased number of tests. The test kits detect both symptomatic COVID-19 and asymptomatic carriers within a narrow window of time. This narrow window of detection presents a challenge particularly when there is a community transmission, since some cases may be missed (Cohen & Paul, 2020). In addition, there were also cases of false positives and negatives when secondary schools were closed in January 2021 due to the use of the rapid test kits to clear boarding students before being released to go home (Authors Personal Observation).

The other challenge is the insufficient supply of appropriate personal protective equipment (PPE) such as facemasks, hand sanitizers, gloves, respirators, goggles, and gowns. These are key to protecting frontline health care workers from contacting COVID-19 despite a high risk of exposure (Kangqi et al., 2020). The lack of adequate and appropriate PPE has led to increased numbers of health care workers infected with COVID-19. It is common knowledge that some health care personnel are among those in isolation centers reducing further the number of available health care personnel in the frontline. A study by Chibwana et al. (2020) discovered that 16.8% of health workers in Malawi have been infected with the virus. Consequently, there is reluctance among other health care workers to assist suspected COVID-19 cases at many the health facilities for fear of contracting the virus (Hale, 2020). Since little knowledge has been gathered on COVID-19 and its pathogenesis, use of appropriate and complete PPE is a must for all frontline

workers in order to prevent further spread of the disease. In every pandemic, pathogen analysis is crucial since it assists in vaccine and drug discovery. Therefore, thorough understanding of COVID-19 pathogenesis is fundamental to preventing and eliminating the pandemic.

Another key challenge is that there is presently no specific tailor-made effective medication for COVID-19 (Cascella et al., 2020). Therefore, therapeutic strategies to deal with the symptoms are only supportive and prevention measures aimed at reducing transmission in the communities (Ahinkorah et al., 2020). The lack of specific medication in Malawi has led to people self-medicating using home-based remedies which have not been scientifically proven to cure COVID-19. However, there has still been a surge of COVID-19 cases in Malawi despite the use the of natural remedies, which is an indicator of continued local transmission (Mkandawire et al., 2020).

Furthermore, it has been noted that the public is not necessarily complying with the COVID-19 preventive measures, although Malawi adopted most of the measures. Consequently, there has been a surge in the number of cases over a relatively short period. For instance, the country had registered two deaths by 19 April 2020, yet the figure was at 107 by 29 July 2020 (MoH, 2020). Reasons for noncompliance include: feeling uncomfortable in facemasks; getting used to the habit of handshakes; gathering in large numbers at funerals, churches, weddings and other crowd gathering places; disbelief that covid-19 is real; getting COVID-19 messages from unauthorized people; and lack of income to purchase face masks (Kao et al., 2021; Banda, et al., 2020).

In addition, stigmatization is always present when there is a disease outbreak (Mejova and Kalimeri, 2020). During the COVID-19 pandemic in Malawi, stigmatization has led to an increase in the number of cases that report late at hospitals, resulting in a higher rates of relatively avoidable deaths (Kao et al., 2021). This is so due to unwillingness of COVID-19 suspects to seek medical care because of fear of stigmatization. Misinformation is another challenge that is counterproductive in the fight against COVID-19 pandemic. False information contradicts fact based educational health messages delivered by public health organizations hence confusing the public (Areeb and Shujhat, 2020). Misinformation about COVID-19 in Malawi has been rampant and is sometimes perpetrated by people at the highest levels (Patel et al., 2020). Among other misinformation for example, people have been told that: the pandemic is not real; hospitals are killing people deliberately in the name of the pandemic so that health personnel can get allowances; and COVID-19 is only for the rich. The false messages have discouraged people from handling the pandemic accordingly, hence the increase in number of cases including loss of lives. This observation necessitates

thorough communication of science-based facts without contradictions with support from the highest levels of authority (Graeme et al., 2020; Banda et al., 2020). It is also important that responsible organizations should develop strategies to regulate COVID-19 health information and teach the communities how to verify health COVID-19 information (Cuan-Ballaza et al., 2020; Banda et al., 2020).

Another key challenge is the pressure being mounted on health facilities by the COVID-19 pandemic. This has not only affected COVID-19 patients, but also others requiring health care. It has been projected that non-communicable diseases will account for 75% of all deaths by 2030 (Deloitte, 2020; Tim et al., 2020). In Malawi, COVID-19 may contribute to about 75% of these deaths largely due to unwillingness of patients with chronic and non-communicable diseases to consult doctors for of fear of contracting the disease or being subjected to a test. In addition, there is a considerable increased intake of unscientifically proven natural remedies as COVID-19 medications. These have some potential to cause liver and kidney problems, which may lead to death in the long run (Ogunleye et al., 2020). Furthermore, the present situation in Malawi is such that health facilities are overwhelmed by the pandemic resulting in more focus being given to the disease. This is exemplified by the setting up of temporary shelters and field hospitals in major hospitals and cities of the country respectively in order to ease the pressure on hospitals. This has the potential to result in other health care services related to children illness, Tuberculosis (TB), Human-Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS), mental health among others being be neglected (Ogunleye et al., 2020). Such a set up may therefore result in more deaths than expected from other diseases, since other essential health services may be ignored or under resourced. This may be worsened by the fact that health care workers mental well-being is also affected due to exhaustion from extra work pressure and fear of increased risk of contracting COVID-19 and infecting their families thereby rendering poor health care to patients (Nian & Khan, 2020; Chibwana et al., 2020). The health care personnel may also require mental support so they can balance between caring for the patients and protecting themselves (Greenberg et al., 2020).

3. OPPORTUNITIES

Despite all the challenges faced by the medical fraternity due to the COVID-19 pandemic, opportunities to both the medical fraternity and the public also exist. One such opportunity is that the emergence of COVID-19 has made the Malawian public health, research field and scientists active in the quest to understand the virus's pathogenicity, disease distribution, and its impact on communities. This is shown by an increase in the number of papers published on COVID-19 by Malawian

researchers and also science-based messages emerging from the health sector. In addition, vaccine development research and trials underway in many countries further entail that there is a chance of eliminating the disease in future. Given the global gravity of the disease which has not spared even developed rich countries, there is some hope that effective vaccines will be developed. Leaving one part of the world untreated is not an and this aspect may in the long run be of benefit to developing countries like Malawi (Rahman et al., 2020). The Organisation for Economic Co-operation and Development (OECD, 2020) indicated that it would take 12-18 months for an effective COVID-19 vaccine to become widely available if the clinical trials are successful. The advancements in computation biology, gene synthesis, protein engineering and the invention of advanced manufacturing platforms are said to be responsible for the quick development of effective vaccine against COVID-19 (Kuldeep et al., 2020). As of March 2021, several vaccines have been developed and approved for use. These include: Biothra; Tanssens; AstraZeneca; Pfizer-BioNTech; Moderna; and Novava. Based on vaccine analysis done by the Malawian health sector, Malawi selected due to cost implications AstraZeneca vaccine with an efficacy level of 60-70%, even though the other authorized vaccines such as Pfizer-BioNTech and Modernas have higher efficacy of 95% and 94.1% respectively.

Due to the increased burden on Malawi's health system COVID-19 has created, more than 200 additional health care workers have been employed to assist in timely health care service delivery to patients in perpetuity even after the pandemic is gone. This is an opportunity that has considerably improved the socio-economic livelihoods of the health workers, while also reducing unemployment under the pandemic (Obasa et al., 2020; Patel et al., 2020). Furthermore, hand hygiene as one of the preventive measures to prevent COVID-19 the pandemic may contribute to the overall improvement of hygiene standards in Malawi. In the long run, this has strong potential to reduce hygiene related infections such as diarrhea and cholera, thereby relieving the health system. Hand hygiene has always been useful in infection control worldwide (Marthur, 2011).

Given the devastation that COVID-19 has caused in Malawi in terms of mortalities and the state of the economy, the country's state of preparedness for another pandemic or health crisis is likely to be much better in terms of both human and other resources in future. Additionally, the country's health system will have long term benefits from infrastructure and equipment supplies that government, the private sector and other organizations have distributed to health facilities during the pandemic. These include donations of oxygen ventilators, concentrators, cylinders and beds by various local and international donors as well as government which has greatly improved the situation at health facilities (Munthali & Xulian, 2020). Before the pandemic, the country had 16 working ventilators and 25 Intensive Care Unit

(ICU) beds (Karman & Besenyo, 2020). With funding from United Nations and the World Bank, Malawi has set up field hospitals in the major cities of Blantyre, Zomba, Lilongwe and Mzuzu (Patel et al., 2020). Though these facilities will be temporarily used, the new medical equipment in these facilities will permanently remain in the health sector. This may eventually lead to improved health delivery even after the pandemic.

Finally, although misinformation has been a major challenge in the control of the spread of COVID-19, it presents an opportunity to the health sector to know deep seated negative conspiracies residing in the people. Therefore, the COVID-19 pandemic has now accorded the health sector in Malawi with a chance to formulate correct messages that can be used in a communication campaign. These will eventually be vital in the fight against COVID-19 and other communicable diseases.

4. CONCLUSIONS

The pandemic has exposed the ill state of preparedness to handle a pandemic as confirmed by the challenges that the country's health system encountered during the pandemic. The country may continue to experience these challenges until COVID-19 preventive measures are adhered to, the health sector is continually supplied with sufficient COVID-19 related resources and civic education of the public on the pandemic and its management is successful. Conversely, observance of COVID-19 control measures may help reduce hygiene related infections in the country. Inadvertently, health facilities will accumulate medical equipment supplied by government and donors during the pandemic period.

REFERENCES

Annabelle, G. (2020). Malawi's Response, Risk Factors And Preparedness For COVID-19. The World Association of Scientists and Professionals 3(4):44-66.

Ahinkorah, B.O., Ameyaw, E.A., et al. (2020). Rising above misinformation or fake news in Africa: Another strategy to control COVID-19 spread. Frontiers in communication **5**(45).

Banda, J., Dube, A. N., Brumfield, S., Amoah, A. S., Crampin, A. C., Reniers, G. & Helleringer, S. (2020). Knowledge, Risks, Perceptions and Behaviors Related to the COVID-19 Pandemic in Malawi. Demographic research **44**(20) 459-480.

Banda, N. P., Hara, W., Burke, R. M., Brown, C., Nyasulu, V., Mandolo, J., Tembo, D., Kachingwe, M., Cornick, J., Jambo, K. & Morton, B. (2020). First Case Report of a Successfully Managed Severe COVID-19 Infection in Malawi. Malawi Medical Journal **32**(4):124-126.

Baye, K. (2020). COVID-19 prevention measures in Ethiopia: current realities and prospects. International food policy research institute (IFPRI) **142**:14.

Cascella, M., Rajnik, M., Cuomo, A., Dulebohn, S.C. & Napali, R.D. (2020). Features, Evaluation and Treatment Coronavirus (COVID-19). Statpearls Publishing,

Chen, N., Zhou, M., Dong, X., et al. (2020). Epidemiological and Clinical Characteristics Of 99 Cases of 2019 Novel Coronavirus Pneumonia in Wuhan, China: A Descriptive Study. The Lancet **395**(10223): 507-513.

Chibwana, M, G., Jere, K. C., et al. (2020). High SARS-COV-2 Sero-Prevalence In Healthcare Workers but Relatively Low Numbers of Deaths in Urban Malawi. MedRxiv **1**(3).

Chih-Cheng, L., Shih, T.P., et al. (2019). Severe Acute Respiratory Syndrome-COV2 and Coronavirus Disease-2019 (COVID-19): The Epidemic and the Challenges. International Journal of Microbial Agents **55**(3).

Cohen, D. & Paul, R. (2020). COVID-19 In Africa: What If There Is A Second Wave? African Arguments.

Covid-19 Visualizer (2021). https://www.covidvisualizer.com.

Cuan-Ballaza, J.Y., Muno-Perez, M.J., Robledo-Vega, C., Perez-zepeda, M.F. & Soto-Vega, E. (2020). Misinformation of Covid-19 On the Internet: Infodemiology Study. JMIR Public Health and Surveillance **6**(2).

Delloite. (2020). Impact of Covid-19 Pandemic on Health Care Systems. Deloitte 2020 Global
Health Care Outlook - Laying a Foundation for the Future.

Eans, R. (2020). With Malawi against COVID-19: The challenges. Healthy DEvelopments,

Galbraith, N., Boyda, D., Mcfeeters, D. & Hassan, T. (2020). The Mental Health of Doctors During Covid-19 Pandemic. BJPsych Bulletin **45**(2):1-4.

Graeme, D.S., Cheung, W.H. & Ng, F. (2020). Emerging compassion, courage and resilience in the face of misinformation and adversity. Journal of Clinical Nursing **29** (9-10): 1425-1428.

Greenberg, N., Docherty, M., Gnanapragasam, S. & Wessely, S. (2020). Managing Mental Health Challenges Faced by Workers During Covid-19 Pandemic. The BMJ **368**:m1211.

Gu, J., Han, B. & Wang, J. (2020). Gastrointestinal Manifestations and Potential Fecal-Oral Transmission. Gastroenterology **158**(6):1518-1519.

Hale, Y. E. (2020). Protecting Our Healthcare Workers During The COVID-19 Pandemic. American Journal of Medicine **38**(7):1515-1539.

Han, Q., Lin, Q., Ni, Z. & You, L. (2010). Uncertainties About the Transmission Routes Of 2019 Novel Coronavirus: Influenza and Other Respiratory Virus. Influenza and Other Respiratory Viruses **14**(4):470-471.

Harapan, H., Itoh N., Yufika, A., Winard, W., Keam, S., Te, H., Megawati, D., Hayati, Z., Wagner, A.L. & Mudastir, M. (2020). Coronavirus Disease. Journal of Infection and Public Health **13**(5): 667-673.

Hui, D.S., Azha, E.I., Madani, T.A., Ntoumi, F., Kock, R., Dar, O., Ippolito. G., Mchugh, T.D., Memish, Z.A., Drosten, C., Zumla, A. & Petersen, E. (2020). The Continuing 2019-Ncov Epeidemic Threat of Novel Coronaviruses to Global Health. The Latest 2019 Novel Coronavirus Outbreak in Wuhan, China. International Journal of Infectious Diseases **91**:264-266.

Kao K., Dulani, B., Ferriere, K.E., Harris, A.S., Lust, E. & Metheney, E. (2021). ABC of COVID-19 Prevention in Malawi: Authority, Benefits& Cost of Compliance. World Development **137.**

Kangqi, N.G., Poon, B.H., Puar, T.H.K., Quah, J.L.S., Wong, Y.J., Tan, T.Y. & Raghuram, J. (2020). COVID-19 And the Risk to Health Care Workers: A Case Report. Annals of Internal Medicine **172**(11): 766-767.

Karman, M. & Benson, J. (2020). Effects of COVID-19 Pandemic on African Health, Political and Economic Strategy. Insight into Regional Development, Entrepreneurship and Sustainability Center **2**(3):630-644.

Kuldeep, D., Sharun, K., Tiwari, R., Bhat, S., Malik, Y.S., Singh, k.p., Chaicumpa, W., Bonilla-Aldana, D.K., Shubhankar, S. & Raodriguez-Morales, A.J. (2020). Coronavirus Disease 2019-COVID-19. Clinical Microbiology Reviews **33**(4).

Malawi Ministry of Health (2021). COVID-19 Information Dashboard [cited 2021, March].

Mangal, T.D., Whitttaker, C., Nkhoma, D., N'gambi, W., Watson, O.J., Walker, P., Ghani, A., Revill, P., Coulbourn, T., Phillips, A., Hallett, T.B. & Bengo, J.M. (2020). The Potential Of Intervention Strategies on COVID-19 Transmission In Malawi: A Mathematical Mortality Study. MedRiv. doi: https://doi.org/10.1101/2020.10.06.20207878.

Marthur P. (2011). Hand Hygiene: Back to the Basics of Infection Control. Indian Journal of Medical Research **134**(5) 611-630.

Mejova, Y. & Kalimeri, K. (2020). Advertisers Jump on Corona Bandwagon: Politics, News and Business. Arxiv.

Mkandawire, P., Cochrane, L. & Sadaf, S. (2021). Covid-19 Pandemic: Lessons from the HIV/AIDS Epidermic in Southern Africa. African Geographical Review. DOI: 10.1080/19376812.2020.1858122.

Munthali, G.N.C. & Xulian, W.U. (2020). Covid-19 Outbreak on Malawi Perspective. Electronic Journal of General Medicine **17**(4):2516-3507.

Nian, A. & Khan, S. (2020). Coronavirus: The Spread of Misinformation. Biomedcentral Editorial **18**(1):1-2.

Obasa, A.E., Chivunzi, E., Masiye, F., Mtande, T., Chalwe, V., Rennie, S., Modley, K., Mokgatla, B., Ochieng, J. & Singh, S. (2020). Comparative Strategic

Approaches To COVID-19 In Africa: Balancing Public Interest with Civil Liberties. South African Medical Journal, **110**(9):858-863.

OECD (2020). Treatments and a Vaccine For COVID-19: The Need for Coordinating Policies On R&D, Manufacturing and Access. OECD Publishing.

Ogunleye, O.O., Basu, D., et al. (2020). Response to the Coronavirus (COVID-19) Pandemic Across Africa: Successes, Challenges and Implications for the Future. Front Phamacol **11**:1205.

Patel, P., Adebisi, Y.A. & Lucero-prisno, D.E. (2020) Addressing COVID-19 in Malawi. Pan-African Medical Journal **35(**2):71.

Rahman, I.U., Ali, N., Isaz, F., Afzal, A. & Allah, E.F.A. (2020) COVID-19 Important Considerations for Developing and Using a Vaccine. Human Vaccines and Immunotherapeutics **17(**2):414-415.

Tim, B., Schell, C.O., Petersen, D.B., Sawe, H., Khalid, K., Mndolo, S., Rylance, J., Mcauley, D.F., Roy, N., Marshall, J., Wallis, L. & Molyneux, E. (2020). Essential Care of Critical Illness Must Not Be Forgotten in the COVID-19 Pandemic. **395(**10232): 1253-1253.

WHO (2019). Statement on the Second Meeting of the International Health Regulations. Emergency Committee Regarding the Outbreak of Novel Coronavirus (2019-nCOV). WHO.

WHO (2020). WHO Coronavirus Disease (COVID-19) Dashboard.WHO.

WHO Director (11 March 2020). Media Briefing on COVID-19. WHO (press release).