



COVID-19 Pandemic: How Prepared is Sub-Sahara Africa to Deal with this Dreadful "Guest"?

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Abstract

The COVID-19 pandemic is a public health challenge of international concern with the death toll on the rise. COVID-19 began from Wuhan, in China and has spread to over 210 countries of the world with over 85.7 million being infected and 1.85M mortality. Africa's first reported case occurred in Egypt on 14th February 2020 and the sub-Saharan Africa first index case was confirmed in Nigeria on 27th February 2020. A total 2.8 million confirmed cases of COVID-19 were reported from 55 African countries and about 68 thousand deaths recorded. Community transmission remains the major mode of spread in Africa. Countries in the region are implementing variable measures to mitigate the spread depending on their capabilities. After extensive literature searches via Google scholar, Biomedical Central and PubMed databases. We reviewed the responses of some African countries toward COVID-19 pandemic and the need for unwavering governments' commitment at improving on the stretched healthcare facilities and services in Africa to mitigate the spread of the disease.

Keywords: COVID-19; Pandemic; Sub-Sahara Africa; Dreadful guest

Introduction

The coronavirus disease 2019 (COVID-19) caused by an envelope strain of coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) [1], started initially from Wuhan in China [2], and have now spread across over 210 countries worldwide. Mild symptoms of SARS-CoV-2 infection include dry cough, sore throat, and fever. In complicated cases, the symptoms include severe pneumonia, organ failure, septic shock, and Acute Respiratory Distress Syndrome [3]. It spreads through coughing, sneezing (droplets suspension), contact with contaminated surfaces, touching of eyes, nostrils and mouth with contaminated

hands [1]. COVID-19 was officially declared a pandemic by the World Health Organization (WHO) on 13th March 2020 considering the rapid global spread [4]. As at 15th October 2020, over 85.7 million cases were reported and 1.85 deaths recorded globally with African Regions accounting for about 3.3% (2,852,010) of the global population [5].

This review focus on the responses of some African countries toward COVID-19 pandemic and the need for unwavering government's commitment at improving on the stretched healthcare facilities and services to mitigate the spread of infectious diseases.

Can Environmental Factors Influence the Spread in Africa?

Studies have reported that meteorological factors play a key role in the distribution of COVID-19. The transmission of SARS-CoV-2, the causative agent of COVID-19, has been unsuccessful in hot and humid climate settings [6-8]. Findings have also established that other viral infections like influenza which display symptoms similar to coronaviruses thrive and spread in low temperature and low relative humidity condition [9]. Apparently, the evidences were huge confidence booster for warm climate regions like Africa. However, COVID-19 disease like every other pandemic disease defied that theory. Africa's first case of the novel coronavirus disease COVID-19 was reported in Egypt on 14th February 2020 from a foreigner whose 17 contacts tested negative but still observed home quarantine for 14 days [10]. The sub-Saharan Africa first case was confirmed in Nigeria on 27th February 2020 from an Italian citizen who had travelled from North Italy to Lagos [11]. As at the writing of this paper 2.8 million confirmed cases of COVID-19 were reported from 55 African countries and about 68,000 deaths have been recorded [12].

Currently African countries with most reported cases are South Africa (1.11M cases), Morocco (444K cases), Egypt (144K, cases), Ethiopia (126K cases) and Nigeria (91K cases). Beside South Africa with 17, 863 fatalities, other Africa countries with over 1,000 COVID-19 deaths include Egypt (6,062), Morocco (2,636), Algeria (1,809), Ethiopia (1,301) and Nigeria (1,115) [13]. The early index cases of COVID-19 in Africa were affluent travellers from Europe however community transmission is currently the principal mode of spread [14].

How Prepared are Africans in Handling the Pandemic

The report of 2016 Infectious Disease Vulnerability Index (IDVI) indicates that Africa hosts 22 of the 25 most vulnerable countries to infectious diseases worldwide [15]. Despite the Ebola virus epidemic that ravaged both the West and Central Africa, 26 million HIV cases, 2.5 million tuberculosis cases, and 213 million malaria cases, most countries in the region were unprepared for the pandemic [16-20].

Foreseeing the spread of COVID-19 to Africa region, the WHO in its report of 05 February 2020 announced the provision of material support to 13 priority countries in the region to be able to conduct local diagnostic, manage suspected cases and assist neighbouring countries in testing suspected samples [21]. The 13 countries were selected in view of high volume of flights to China, the epicentre of the novel corona virus. In addition, the countries were provided

with protective equipment for the front-line workers, as well as thermometers and other essential supplies for screening and handling suspect cases at entry points like the airports. The countries include, Ethiopia, Algeria, Angola, Nigeria, Cote d'Ivoire, the Democratic Republic of the Congo, Ghana, Mauritius, South Africa, Uganda, Kenya, Zambia and Tanzania.

The challenges of diseases surveillance in Africa are well documented [22]. To fill the noticed gap, Organisations like the WHO, World Health Emergencies Programme, Africa Centres for Disease Control and Prevention (ACDC), the ONE-HUMAN-ANIMAL-HEALTH Africa-Europe research, training and capacity development network (PANDORA-ID-NET) teamed up to collaborate with national public health and disease control institutions in African countries to enhance the disease surveillance and other health related logistics [10]. That effort, however, has not translated to full revival of the poor health infrastructures in most of the individual countries.

The WHO, African Union Commission and ACDC, collaborated with African countries to form the Africa Taskforce for Coronavirus Preparedness and Response (AFTCOR). The aim of creating AFTCOR was to assuage the spread of COVID-19 in Africa. That effort successfully improved COVID-19 diagnostic testing capabilities from only two Africa countries in the first week of February 2020 to over 40 nations towards the end of February [23]. The detection of COVID-19 infections is crucial to mitigating the spread, however managing the cases is a function of sound health system which has being a challenge in most African countries. For instance a recent report indicated that 10 African countries lack ventilator which is crucial in management of complicated cases of COVID-19 and other complex health matters [24].

WHO has suggested that frequent washing of hands with soap and water or using alcohol-based hand sanitizer may prevent infection from covid-19 [5]. Sub-Sahara Africa with 14% prevalence record of washing hands with soap [25] might struggle with total compliance. The option of alcohol-based sanitizer is equally not sustainable in African, particularly in the rural communities.

High poverty level in Africa and defective healthcare systems has continued to be the driver of complicated health-related issues in the region [26]. The Sub Sahara Africa has remained the only region in the world with the highest number of people living under the poverty line of less than US\$1.90 per day and has sustained an increase in the poverty figure since 1990 [27]. Gilbert, et al. [28] have observed that African countries with high importation risk for COVID-19 disease (Egypt, Algeria, and South Africa) also have reasonably high response capability while those at

moderate risk (Nigeria, Ethiopia, Sudan, Angola, Tanzania, Ghana, and Kenya) have pregnable variable capacity.

Current Efforts on Flattening the Curve of COVID-19 Pandemic

Although response to the COVID-19 varied from country to country in the African region, the overall objectives were to interrupt the spread of COVID-19, reduce morbidity and mortality due to COVID-19 and minimize the economic and social burden of patients on both health system and entire nations. It was reported that the experiences of countries from Sub-Saharan Africa (SSA) in combating deadly outbreaks and ongoing infectious diseases like HIV, malaria and Tuberculosis was spontaneously utilized to fight against COVID-19 [29,30]. The response strategy relied on the already existing pandemic preparedness and all hazards emergency plans, risk communication and community involvement with skilled workforce of trained and committed first responders, all channelled towards containment of COVID-19 in these countries [31]. Although many SSA lack sophisticated medical capabilities but rather improvised available similar resources to ensure appropriate health care was provided for every case reported during the outbreak [32]. Several efforts were put in place since the first case of COVID-19 was reported in the SSA country starting with screening and quarantining the returnees, contact tracing of confirmed cases, advising self-quarantine to returnees, closing of all borders to systematic lockdown of the entire country or a section of the country and enforcement of social distancing, wearing of face masks, hand hygiene and limiting or complete blockade of social gathering in order to forestall the outbreak [33].

Countries in Africa are developing variable counter-measures to controlling the COVID-19 spread depending on their capabilities. For instance in South Africa, the National Health Laboratory Service, in collaboration with the National Department of Health, introduced 67 COVID-19 mobile testing units all over the country to mitigate the COVID-19 spread [34]. Nigeria has improved on diseases surveillance capability through the creation of National Incident Coordination Centre (ICC) for outbreak preparedness and response activities [35]. Likewise, it has increased the number of the molecular diagnostic laboratories from initial 6 previously in three states to 62 across the federation according to the Nigeria Centre for Disease Control (NCDC) verifiable twitter handle @NCDCgov. In addition to the 169 ventilators available in the country, the US government recently donated 200 new ventilators to the country [36] to mitigate the impact of the pandemic. Ethiopia suspended flight to 120 countries, declared a 5-months state of emergency, granted state pardon for 20, 402 prisoners,

postponed parliamentary and presidential elections, and boosted its COVID-19 testing laboratories to 38 nationwide [37]. In Kenya, a private organisation installed oxygen plants within clusters of over 140 clinics which will help to save complicated cases of COVID-19 and other health conditions [5]. A North African country, Morocco, sharing boundaries with European countries Italy, Spain and France with highest incidence of COVID-19 mortality suspended international flights, observed early quarantine by shutting down schools and mosques on March 7, 2020 [38]. In March 24, 2020, Moroccan health authority approved the controversial hydroxychloroquine in the therapeutic protocol of confirmed COVID-19 cases [38]. In Morocco, private sectors and individuals donated cash to the tune of 3 billion dollars which were used to increase the intensive-care units (ICU) capacity of the country to handle covid cases from 1600 to 3000 ICU beds [39].

Challenges to Curb COVID-19 Pandemic

Africa is said to have about the lowest reported COVID-19 cases (3%) and related death (2%) after the Western Pacific region [12,40]. That may be attributable to: the sizable population of young people (median age of 19.7 years) that often show no symptoms and can easily overcome the disease unlike their few over 60 years susceptible population [41]; Africa's vast genetic diversity that confers adaptation to diseases like HIV, malaria, Lassa fever and African trypanosomiasis [42-45]. While further investigations will assist in clarifying some of these hypotheses, it is more responsible to err on the side of caution by following the safety measures recommendations against the SARS-CoV-2 transmission. Low testing for SAR-CoV-2 in Africa [46] may equally be a contributing factor to low incident and death cases in the region. Some countries like Germany, UK, France, Italy, Netherlands, Belgium, Poland, Czech Republic, Austria, Switzerland, Luxembourg, and Denmark are already witnessing the second wave of the pandemic and are locking down to stem the spread [47]. Studies have indicated that the spread of COVID-19 has taken its toll on the health care systems as evidenced by the scarcity of ICU and mechanical ventilators needed for managing severe COVID-19 cases in many countries [48]. The idea of total lockdown in the face of the second wave of the COVID-19 pandemic, as embraced by some of the affected developed economies should not be applied in resource-limited settings like Africa. Considering the overwhelming poverty situation in Africa [27], compliance with total lockdown will be a tall order as majority of the citizens, will defy everything and continue with routine commercial activities to support their families. In view of the poor economic situation in Africa, feasible strategies that will concurrently mitigate the transmission of COVID-19 and the poverty

level should be encouraged. For instance introducing partial restriction of domestic movements will be in order as this will not interfere with the individuals' routine income-generating activities to escape poverty or hunger. Furthermore running shift for all kinds of establishments will enable the individuals to overcome various financial challenges. It involves staggering or alternating physical presence at work premises during office hours such that about 40% staff force can be available as the rest work remotely. In addition, governments providing palliatives like food, portable water, drugs and other basic amenities will aid in sustaining the restriction of movement. The use of non-medical cloth masks for individuals or communities where the medical mask supply is unaffordable or scarce are critical. Africa countries still need to be more aggressive towards improving the surveillance mechanisms, equipping the COVID-19 diagnostic facilities, training of health personnel and refurbishing the moribund health infrastructures to assuage the spread.

Conclusion and Recommendation

A COVID-19 vaccine with more than 90% effectiveness was just developed by the United States' multinational Pfizer and German biotech firm BioNTech, however it will be accessible from the year 2021 [49]. While the world awaits the distribution of the effective candidate vaccines, Africa nations need to demonstrate more political commitment towards improving healthcare facilities and services to mitigate aftermath of diseases in the continent. So far, only one African state had complied with the Abuja Declaration of 2001 where African countries' pledged to allocate at least 15% of their annual budgets towards boosting the health sector in individual country [50]. The full compliance and implementation of the declaration will go far in mitigating the spread of COVID-19, emerging and re-emerging diseases in the continent. While most Africa countries with limited resources are still grappling with the current wave of COVID-19, some advanced countries like Germany, UK, France, and Italy are already witnessing the second wave of the pandemic and are locking down to curb the spread. It is expected that the poverty level and current sociopolitical unrest in part of Africa like Angola, Northern Ethiopia, Ivory Coast and Nigeria will not exacerbate the spread of COVID-19 across the continent.

Conflict of Interest Statement

The authors declare that they have no conflict of interest.

Competing Interest

No competing interest exist

Ethical Approval

Not applicable

Authors' Contributions

OB conceptualized the review and developed the first draft. AAA, OMN, SB and IO proof-read and edited the manuscript. All authors contributed to writing, editing and finalizing the manuscript.

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