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Editorial

Third wave of COVID-19 pandemic in Africa: Challenges and recommendations

A B S T R A C T

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) has evolved in different waves and is currently in its third wave for the majority of countries around the world. Each wave emanated with its own set of challenges. Lower- and middle-income countries such as most African countries have faced additional challenges compared to high-income countries. This paper highlights the challenges faced by Africa during the third wave of COVID-19 and proposes recommendations and strategies to contain the spread. We conducted a mini-review for the newly released articles and researches about the challenges faced by Africa during COVID-19. Fragmented healthcare sectors, limited healthcare resources and emergence of co-infections in COVID-19 patients, inadequate vaccination rollout and political conflicts are the major challenges faced by the African countries. Our recommendations to defeat this outbreak and subsequent pandemics is to raise the public's awareness about vaccines through campaigns and social media in order to lessen vaccine hesitancy. Governments as well should focus on under-served and vulnerable populations, patients with comorbidities, and communities living in endemic-striking settings as these people are more prone to the severe form of the disease. Moreover, by adopting socio-ecological perspectives, one can implement multi-level integrated interventions to help control COVID-19 more effectively.

1. Introduction

The COVID-19 pandemic has been a major public health concern around the globe [1]. Africa was the last continent hit by the pandemic, confirming its first case on February 14th, 2020 in Egypt [2]. The first wave of COVID-19 spread slowly and less vigorously in Africa than in other parts of the world, nonetheless reaching nearly every African country in about three months since its arrival on the continent [3]. Furthermore, empirical data has indicated that most COVID-19 cases originate from the asymptomatic spread, thereby increasing the transmission rate [1,4].

The second COVID-19 wave began in South Africa in conjunction with the mutated COVID-19 strains, which were thought to be more dangerous due to their increased transmissibility and infectivity [5]. This increased COVID-19 cases by 30% compared to 3 million cases reported during the first wave (14th February and December 31, 2020) [6]. The second wave of the COVID-19 pandemic in Africa has been more detrimental than the first, with South Africa, Egypt, Morocco, Tunisia, and Algeria having the highest number of coronavirus-related deaths [7]. Undoubtedly, COVD-19 testing, reporting and contact tracing have aided in documenting these statistics. In addition, due to a surge in hospital admission, in-hospital mortality shot from 3.6 (first wave) to 8·3 deaths per 100,000 people amidst the second peak of the COVID-19 pandemic [8].

Africa is reeling under the third wave of coronavirus since June 2021, with approximately 33 cases per one million population reported daily [9]. According to the WHO, the emergence of the Delta variant is responsible for the resurgence of COVID-19 cases and associated mortality [10]. Additionally, ineffective public health measures, social distancing, and slow vaccine rollouts may have contributed to rising cases. Africa's healthcare system continues to encounter an unparalleled financial burden, particularly in Sub-Saharan Africa, where the vaccination rate remains sluggish [11].

With only less than 2% of the total African population vaccinated [12], the continent should anticipate the possibility of more surges in the near future. About 10% of Africans have received vaccination under COVAX (an initiative to distribute free doses of vaccines to low-income countries) by the end of September [12], but rampant vaccination is required to contain the rapidly spreading severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and its variants. This paper aims to present data regarding the ongoing challenges faced by Africa during the third wave of COVID-19 and proposes recommendations and strategies to contain the spread.

2. Challenges

2.1. Overburdened healthcare system

With the rapid spread of severe acute respiratory syndrome coronavirus 2 (SARS-COV 2) universally across the world, it is observed that the impact of coronavirus disease 2019 (COVID-19) on healthcare workers (HCWs) and healthcare systems is determined mainly by geography and subsequent availability of resources. This is becoming increasingly evident across the continent of Africa, which is home to more than 2000 unique languages and many different cultures and is the world's second-largest and second most-populous continent, after Asia in both aspects.

Disproportionate effects of COVID-19 across the African continent are elaborated in the pan-African survey of Nasreen S. Qadri et al. incorporating a total of 13 countries across Africa, including to assess the impact of the COVID-19 pandemic on HCWs in the continent [13]. The impact of the virus was associated mainly with deviations in

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workflow, income, access to PPE including N95 face masks, low number of ICU beds, ventilators to be mentioned [14]. These challenges has well continue to predisposed HCW's in Africa to infections, and long hours working shifts that can also predispose them to burnouts [15].

At the regional level, the healthcare system of South Africa is affected the most in comparison to other regions of Africa. Scant availability of PPEs, elevated mortality rates, mass hysteria, and resurgence of non-communicable diseases that are commonly seen across the continent of Africa are a few pertinent contributing factors [16].

Furthermore, Oxygen therapy has listed in the covid-19 treatment guidelines especially in severe cases, this makes availability of ventilators in healthcare centers indispensable [17]. Ventilator availability has been underlined globally as a major concern with regard to resource scarcity. However, in the African context, access to ventilators is limited to equipment availability, but according to Madzimbamuto, the other factors to consider the inclusion of power supply and oxygen availability and trained recruits with adequate expertise and skill in the use of the equipment [1][4]. Moreover, the survey results by Nasreen S. Quadri et al. which confirm the established relative scarcity of ventilators in African facilities, further emphasize the need to focus on other noninvasive ventilation–oxygenation methods in Africa [14].

2.2. Diseases outbreak

The other perilous challenge that has tampered with the control of COVID-19 across Africa is the spread of various infectious diseases amidst the pandemic. This includes Yellow fever, Lassa fever, dengue fever in Ethiopia, and plague in Madagascar which have led to difficulties in both diagnosing and mitigating measures [18–20]. In recent times, cases of the new variants of the Ebola virus and Zika virus have also been documented in the Democratic Republic of Congo (DRC) and Central Africa, respectively [21,22]. Furthermore, the outbreak of other viral illnesses such as HIV/AIDS and viral Hepatitis during the COVID-19 pandemic has further strained the deteriorating African health care system [21–23]. The return of measles has also been reported in DRC amid the COVID-19 crisis [24]. Most of these diseases have a similar symptomatic profile to COVID-19 infection. This makes it even harder for the early detection of Covid-19 [25].

2.3. Vaccination

Rampant vaccination programs are required to contain the rapidly spreading coronavirus. However, in the overall efforts to immunize individuals against COVID-19, most African nations lag in achieving vaccination targets [12,26,27]. COVAX was created to maximize the chances of successfully developing COVID-19 vaccines and to manufacture them in the quantities needed to end the COVID-19 crisis [28]. WHO aimed to vaccinate 40% of the total population by the end of 2021, but unexpected shifts in vaccine supply by the COVAX will suffice only 17% of Africa's population [10].

Africa requires nearly 1.5 billion doses to vaccinate 60% of natives to reach the herd immunity threshold [27]. About 10% of Africans were expected to receive vaccination under COVAX by the end of September 2021 [12]. As of August 31, 2021, African countries had administered only 94 million doses to the continent's population [29].

As of December 11, 2021, Seychelles was the African country with the highest coronavirus (COVID-19) vaccination rate (181 doses/100 individuals). Other African countries with high vaccination rates are Mauritius (147.25/100), Morocco (131.72/100), Cape Verde (97.92/100), Tunisia (91.64/100), and Rwanda (77.34/100) [30]. In South Africa, the recent emergence of the Omicron virus strain has placed it at higher risk than other countries on the continent. The vaccination rate has reached around 45 per 100 population [31]. On the other hand, Tanzania, Madagascar, South Sudan, Chad, the Democratic Republic of Congo, and Burundi had the least reported vaccination rates of less than 3 doses per 100 individuals [30]. Whether Remoteness of some areas in Africa has made vaccine access extremely difficult for a sizable proportion of the entire population [32–34].

Vaccination hesitancy is another challenge in addition to stated limited supplies and vaccine rollout [31]. Reasons such as perceived safety of the vaccine, its effectiveness, and side effects have been the most reported factors affecting vaccine uptake and contributing to vaccine hesitancy [35,36].

2.4. Conflicts and natural disasters

It is believed that an increasing frequency or intensity of armed conflict would seriously affect efforts to cope with the pandemic. In areas with political unrest, conflicts, and overall social instability, setting up humanitarian programs is dangerous and requires complex logistics and strong negotiation skills between the parties involved. Populaces in affected regions and those fleeing from them are prone to live in dubious and swarmed conditions that are exceedingly conducive to the transmission of infectious diseases, such as COVID-19.

Thus, the UN has called for a ceasefire between conflicting parties in such countries to enable better management of the pandemic. The call has resulted in unilateral ceasefires in conflicts in Angola, Cameroon, Libya, South Sudan, and Sudan. Overall, however, a clear reduction in violence due to the ceasefires could not be ascertained.

Humanitarian response to COVID-19 has faced several constraints in conflict zones. These include; Constraints related to the precariousness of health infrastructures in conflict zones and adjacent regions. This is because the areas where conflicts begin and continue are typically left behind, with very weak or non-existent health structures. The conflict dynamics take precedence over detecting a large infectious event and assessing its potential impact. As a result, determining the true dynamics of the pandemic in countries like the Sahel or Nigeria is challenging. Under such conditions, surveillance, notification of infected persons, and patient care are entirely compromised.

Other constraints include the constant influx of refugees and displaced people, restrictions on movement and access to places where the disease has taken hold, population precariousness and excessive commodity price volatility, situation politicization, military influence, as well as other issues that place humanitarian values at risk.

Studies have shown that the occurrence of a natural disaster in most cases leads to an increase in infection-related fatalities, with wide variance in possible outcomes depending on the timing of the natural disaster relative to the peak in infections and the duration of the natural disaster [37]. The extra obstacle of preparing for and responding to disasters during the pandemic, such as the restrictions of physical separation during evacuations and response operations, was one facet of the compounded risk of COVID-19 and climate extremes [38]. But, more crucially, COVID-19 and climate extremes have had devastating and frequently simultaneous effects on livelihoods, compounding the effects over the previous year and weakening resilience to future natural calamities. For example, in countries where these compound repercussions have already played out, both types of challenges are completely apparent. In Kenya, the combination of COVID-19 floods one year and droughts the next, as well as a locust infestation, exacerbated food insecurity for the poorest in both rural and urban areas [38].

2.5. Recommendations

Concerning the burden on the healthcare system across the continent, Africa further requires a thorough understanding of perceptions and realities that are affecting the healthcare community and identifying potential targets to prevent and mitigate the current fatigue over the healthcare system of Africa. This will allow containment of the current pandemic and early preparation for other infectious diseases outbreaks.

COVID-19 vaccine rollout should pick up the pace, and the operational constraints in deploying the COVID-19 vaccine should be dealt with at the earliest [26]. Likewise, raising awareness through campaigns

and social media would lessen vaccine hesitancy and enhance public trust in achieving immunization against COVID-19 [11,12,32–34]. Consequently, this will boost the vaccine uptake and attain the required level of herd immunity in the continent in the long run [26,33,34].

In view of the emerging outbreaks in Africa, the governments should take certain measures to control the situation. They should focus mainly on the under-served and vulnerable populations, patients with comorbidities, communities living in endemic-stricken settings like malaria, Ebola virus, patients' under-treatment for tuberculosis, pregnant women, and other parts of society. For instance, to control the spread of yellow fever, an immunization drive and mosquito control program should be initiated. Furthermore, the early differential diagnosis should take place for a disease with the same presentation as COVID-19 to move towards appropriate management [17]. By adopting socio-ecological perspectives, one can implement multi-level integrated interventions to help control COVID-19 more effectively.

3. Conclusion

Therefore, there is a real need for rapid diagnostics of epidemic-prone pathogens at remote outbreak sites in Africa. The World Health Organization should increase its funding to these poverty-stricken regions of Africa in times of need to build mobile laboratories that can rapidly be deployed into epicenters of the outbreaks.

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Data is available upon request from the corresponding author.

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