

COVID-19 Pandemic in Africa: The Need for Investment in Research

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Abstract

Despite the discovery of a vaccine, there are still growing concerns about the COVID-19 virus. While many western countries have made resource investments into health research, this is a challenging aspect for a lot of African countries. For a region with a lot of experience in epidemics, there has not been efficient investment in health research. Rather, there is a lot of over reliance on the west for vaccine production and development of protocols that are challenging to implement in African countries such as storage conditions for vaccines and access to clean water. A takeaway from the COVID-19 pandemic is that even in a global economic disruption, most countries will seek to aid their citizens and improve their well-being before outsourcing resources to third-world countries. So, it is imperative that Africa as a continent invest heavily in health research, education, medical infrastructure, and development to better prepare for future pandemics.

Introduction

Miguel Porta defines an epidemic, as the increase in the occurrence of an illness or disease in a population or region over the normal expected range (1). He further sheds light on an pandemic as the occurrence of an epidemic over a large area which spans international boundaries and affects an enormous amount of people (1). Over the years, recent data has suggested that there is a potential for an increase in the probability of a pandemic occurring (2), and this as a result of increase in migration, use of land, and increased exploitation of nature (2-3). Important and strategic policies will showcase the need to pinpoint avenues whereby potential outbreaks may occur in the future. Identification of these potential threats will help build preparedness and sustained health.

In December of 2013, the West African Ebola epidemic was first reported in a young boy in the town of Guéckédou, located in Guinea (4). The town is well known for having a large presence in traders across West African countries, thereby, making it a good hub for the spread of the Ebola virus. The Ebola outbreak which spread widely from 2014-2016 was the largest and the first outbreak which involved a few West African countries. The epicenters of the Ebola epidemic

were primarily in Guinea, Liberia, and Sierra Leone, with other countries including Nigeria, Senegal and Mali experiencing minor outbreaks (4). A total of 28,600 laboratory confirmed cases and over 11,000 deaths were reported in the worst affected countries (4). Unfortunately, this Ebola epidemic exposed the world to a potential pandemic that could spread like wildfire if not properly managed. This epidemic showed the world how ill equipped we are in the face of a potential pandemic in relation to contact tracing, quarantine and isolation protocols, effective health care, and global communication (4). Only West African countries bore the brunt of the Ebola virus in 2014, with Sierra Leone having the most cases. Lack of good health infrastructure, failure of appropriate response by those in authority, and lack of health research are a few factors that led to what is known as the largest outbreak of Ebola in Western Africa (5). Over the years, Africa has overly relied on the West for foreign assistance in terms of vaccines, financial aid, and military aid. And this reliance was exhibited during the Ebola outbreak as the United States military led a \$750 million dollar fight to eradicate Ebola by deployment of personnel and the creation of bed spaces, and various medical aid (6). Interestingly, Egypt and Ethio-

pia were the only African countries that sent substantial resources to help fight against the Ebola outbreak (7).

Fast forward to 2020, the COVID-19 pandemic has shown that resources from countries are being realigned to help aid their citizens because of the rising infection rate and the rising death. From creation of employment relief funds for those that lost access to their jobs, investment in research to help find a vaccine, increase in resources for contact tracing, increased aid directed towards mental health services. These are ways that the Western world has focused on their individual countries to help aid the burden created by COVID-19. However, from the African perspective, protocols are still being adopted based on what is done in the West without knowledge of what works for their citizens.

Insights from COVID-19 Pandemic in African communities

The effect of COVID-19 pandemic across the globe, which has caused massive death and disruption of life in the West, has seemingly not affected Africa as severely. Currently, Africa has about 4.1 million confirmed cases, as compared to 30 million and 16 million in North America and Asia respectively (8). The reduced numbers do not indicate a time of complacency, especially with the increase in the deadly and contagious variants emerging (9), rather it is imperative to unite to control the spread of this disease. A lot of African countries still lack sufficient intensive care beds and ventilators (10), with tons of overcrowding in the health care facilities. These challenges are not limited to improvement in health-care alone. However, improvement of the quality of life which will enable less compact living and a chance to practise social distancing among neighbors. Handwashing and sanitizing are practises put in place to improve or help eradicate the spread of COVID-19, however, how can this be practised when people do not have access to clean running water (11). As mentioned earlier, Africa has been primed for a pandemic with the recent Ebola that broke out in 2014. However, they have not heeded to the writing on the wall. Africa has more experience dealing with epidemics than the West, however, insufficient investment into health research and infrastructure have limited their ability to respond to COVID-19 or develop a suitable vaccine (11). Thankfully, the Africa Centers for Disease Control has hastened its work to

improve the diagnostic and monitoring capacity of the continent. This improvement has brought about a health care system that is quite durable compared to previously. However, more work needs to be done in terms of investment in a world class research and epidemiology center. Africa has developed highly educated researchers; however, majority keep leaving because of lack of funding or adequate research opportunities. Sadly, African governments contribution to research and development is very limited. In 2007, there was a signed agreement by the African Union member countries where they all committed to invest at least 1% of their GDP in research and development (12); however, this goal has remained unrealized. As of 2019, Africa's investment in research and development funding was a very low.42% of the GDP, with the global average resting at 1.7%. Presently, the ongoing COVID-19 pandemic has elucidated the dangers of minimal funding in research and development. Interestingly, Africa has 14% of the world population, but produces only 0.1% of the world's vaccines (13). This highlights the need for an increased funding from the government and, thereby will reduce the dependency on the West. Presently, 25% of people in Western countries have received a dose of the vaccine (14), compared to 0.2% in African countries (14). This showcases how Africa is at the back of the queue for receiving adequate resources during a pandemic.

One advantage that Africa has is time. Leaders in the health sector and community should see this as a perfect opportunity to act. Invest in the education of the universities by opening a state-of-the-art research institute with the aim to keep these educated individuals to lead discovery and reduce the overreliance on the West. One way this can be done is to maximize and invest in existing initiatives such as The African Centres of Excellence and African Research Universities Alliance to mention a few. Also, African universities should strategize and develop innovative ways to incorporate scientific teaching into their curriculum to reflect current world problems. This will serve as a good medium to develop research capacity and possibly standalone into self-sufficiency. Finally, governments should set a priority for science which runs beyond health ministry budgets. This will ensure adequate and sustained investment in research and development as the foundation of national security.

The recent pandemic has been an important reminder that most countries will default to protecting their nations policies during a crisis. This can thereby enhance global inequities when nations are faced with threats. Africa therefore needs to invest in her future and strengthen national research programmes and partnerships. Which side of history will you stand, invest in research, invest in education, and collaborate with the West. No one likes an over reliant partner.

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