

PERSPECTIVES

Perspectives on Fewer SARS-2 Coronavirus (COVID-19) Deaths in Africa

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ABSTRACT

Globally, more than two million people, about 53,000 in Africa have died from COVID-19 infection. By any metric, Africa has so far fared better than most parts of the world including, some of the most developed and affluent nations like the United States of America in the fight to contain the COVID-19 pandemic. Analysis of published COVID-19 data shows that Africa, with a population four times greater than that of the United States recorded forty times less number of positive cases and at least thirty fold decrease in the number of COVID-19 deaths. The data also demonstrates that the population case positivity and fatality rates in Europe are respectively ~24 and ~23 folds greater than those of Africa. The vast disparity in the metrics between advanced nations in Europe and the United States, with substantial healthcare budgets and the developing nations of Africa is worth examining. In this article, we offer some perspectives to explain Africa's low case positivity and death rates from COVID-19 infections. While many factors contribute to the world's collective vulnerability to the pandemic, structural, demographic and sound public health policy together are essential in fighting off the disease.

KEYWORDS: Sars-2 Coronavirus; Africa; Europe, USA; Deaths.

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INTRODUCTION

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV2) is a novel strain of the Coronavirus family, first observed in 2019 in Wuhan, China. The deadly virus contains four protein spikes: S, M, E and N that helps the virus to attach and infect the respiratory system [1]. Easily contracted by inhaling respiratory droplets from an infected person, this contagious virus causes severe pain, respiratory distress and death. Infected persons can be asymptomatic, show mild to moderate cold and flulike symptoms or develop acute respiratory distress, organ failure and death.

Summarized in the table below are current COVID-19 positive cases and deaths per WHO data [2]. With a global population of 7.8 billion, over 93 million positive cases of COVID-19 and more than 2 million deaths have been reported, representing a death to population ratio of about 0.26% worldwide [2, 3]. The data also shows that confirmed positive cases and deaths in the United States is higher by 10 and 8 folds respectively than in Africa. As a proportion of the population, positive cases and deaths

are respectively ~41 and ~30 times greater in United States than Africa. Death-to-population ratio for the United States (~1.2%) and Europe (~0.9%) remain close. However, the ratio in Africa is 0.03%, considerably lower than high-income, more affluent and developed communities such as the United States and Europe.

The general recommendation of the three “Ws” of wear mask, watch distance (at least 6 feet or 2 meters apart) and washing hands frequently to manage the spread of pandemic are often not always respected in many communities. In some communities in rural Africa, mask-less social gatherings are common, with very little regards or fear of contracting the virus. Despite evidence from serological antibody surveys suggesting that far more Africans have been infected [4], many in the rural communities still consider the coronavirus pandemic a hoax. This attitude may be explained by the lack of knowledge, evidence of or experience with sickness and deaths linked to the virus. This article offers perspectives as to why Africa nations have fared better, with low

positive cases and fewer deaths than other countries from the worldwide pandemic. The world's collective vulnerability to the virus and the unlikely fewer deaths in Africa is a function of many factors such as age and

demographic distribution, population density, the rural/urban divide, interaction within/between communities, diet and traditional medicine etc.

COVID-19 Statistics as of January 17, 2021					
	Population (millions)	Confirmed Cases	Confirmed Deaths	%Cases/Population	%Death/Population
Worldwide	7,773	93,194,922	2,014,729	1.198956928	0.259195806
United States	329.9	23,344,423	389,064	7.076211882	1.179339194
Canada	38.2	695,707	17,729	1.821222513	0.464109948
Europe	747	30,488,064	666,036	4.081400803	0.891614458
Africa	1,338	2,313,130	52,905	0.172879671	0.039540359
Ratios					
Europe/Africa	0.558295964	13.1804369	12.58928268	23.60833276	22.54947821
US/Africa	0.246562033	10.0921362	7.354011908	40.9314284	29.8262138

The table above summarizes the confirmed COVID-19 cases and fatalities in Europe, the United States and Africa as obtained from WHO Coronavirus Disease (COVID-19) Dashboard Data. The number of cases and deaths are respectively more than 10 and 8 folds higher in the US compared to Africa. As a proportion of the population, positive case and death rates are respectively 41 and 30 fold greater in United States than Africa. In Europe, both values are ~24 times higher than those of Africa. <https://covid19.who.int/>

POTENTIAL REASONS FOR LOW COVID-19 DEATHS IN AFRICA

Young Population on the Continent

Approximately 70% of the Africa's population is less than 30 years old, making it the youngest continent in the world. The median age in Africa is 19.7 years. When contracted, COVID-19 impacts disproportionately more the elderly, above 65 years old compared to the young. At 3%, sub-Saharan Africa has the smallest share of the population older than 60 years of age than any other region in the world [2]. The average life expectancy at birth in high-income countries stands at ~79 years compared to ~62 years in Africa [5]. The risk of dying from COVID-19 infection increases with age, with the most deaths recorded for individuals older than 65 years [6]. Unlike youths, elderly citizens are at higher risk of becoming seriously ill with COVID-19 because they are more likely to have comorbidities and weakened immune systems. The youthfulness of Africa's population explains in part the relatively high recovery and low death rates on the continent.

Sparse Population Density

The bulk of the continent of Africa is sparsely populated with a few crowded urban and commercial centers. With about 1.4 billion people, Africa's population density is 45 per square kilometer (117 people per square mile) per United Nations tracking [2]. The bulk of the population reside in less dense rural settings compared to the less than half of the population (43.8 %) crowded in urban/commercial centers. Most positive COVID-19 cases/deaths in Africa were recorded on the continent's major cities/urban centers such as Cairo, Lagos, and Johannesburg etc. The pattern is similar to that of the U.S., where the majority of COVID-19 deaths occurred

in heavily populated urban cities. However, and unlike in the United States, the level of economic activities and interactions between the urban and rural sectors in Africa are low. The rural-urban interactions and exchange via travel and commercial activities are minimal within/between African countries compared to developed economies. In the rural areas, it is common to find citizens who have not traveled out of their village for weeks, months, and perhaps years. Inadequate infrastructure and poor transportation networks further limits travel, thus minimizing gatherings and the spread of the pandemic on the continent. The large average African household size of ~5 should increase the potential for exposure of older generations from young infected asymptomatic household members. However, that expectation is not the case probably because of the reduced interactions between families within communities. The African family structure and unplanned urban/rural setups somehow contributes to social distancing (probably the most important of the three preventive recommendations) in mitigating, controlling and reducing the spread, infection and deaths from the virus.

Government Efforts

African governments and state institutions deserve some credits as well. With limited resources and the short notice, these governments quickly put in place and instituted measures to reduce the importation and spread of the virus in their respective countries. Measures such as halting flights from heavily infected countries, strict quarantine, testing and contact tracing were implemented. The governments also ordered the handling and swift burial of reported cases of all COVID-19 deaths at no cost to the bereaved family. Traditional customs of mourning the death, wailing for days and transporting corpses across the national territory for burial in the deceased ancestral village were suspended.

Today, proof of a negative PCR test result within 72 hours prior to boarding a flight bound for most countries in Africa is required as part of the government's travel policy. In some countries, positive cases are quarantined on arrival, following screening at the airports. Fearing an overburden of the medical facilities, the government of Cameroon, for example was proactive at establishing COVID-19 makeshift structures to house and treat

infected patients [7]. Fortunately, because of the low case numbers requiring hospitalization, these additional structures were not used and are currently being demolished. The World Health Organization (WHO) Regional Director for Africa noted that a key to combating Covid-19 involves rapid testing scale up, cases isolation and contact tracing. The Namibian government, with great support from WHO has put in place an effective contact-tracing program to help save lives and provide people with essentials, including efforts at reducing the negative stigma associated with COVID-19 infection within the communities [8]. The preparedness of trained surveillance and case investigation teams have been helpful in controlling community transmission, spread and low COVID-19 case numbers in many African countries.

Medicinal Plants and Herbs

Indigenous plants and herbal remedies are frequently used in African communities to treat patients for a variety of illnesses and ailments, including malaria, ulcers, low libido, respiratory disorders and fertility issues. In the rural sectors, traditional doctors are the main source of medical care for sexual impotence and erectile dysfunction [9, 10], snakebites envenomation [11], opportunistic HIV/AIDS infections [12], various respiratory illnesses [13]. These exposures to nonconventional sources of medication/treatment could have played a role in alleviating symptoms and improving recovery from COVID-19 infections on the continent. It may also explain the disparity in deaths rate seen between Africa Americans in the United States and Africans on the continent of Africa. Data from the Center for Disease Control & Prevention (CDC) showed that non-Hispanic Blacks make up only 13% of the total U.S. population and nearly 25% of COVID-19 deaths -the highest for any demographic group [6]. In Africa, the death rate is much lower. The low death rate is, perhaps attributed to the tropical location of the continent, dietary differences and consumption of medicinal plant base products.

Malaria epidemic and the use of Hydro-chloroquine

The bulk of Africa falls within the tropical belt, which is endemic to the anopheles mosquito, the vector that transmits malaria. The inhabitants have been exposed to chloroquine/hydrochloroquine tablets to prevent and/or treat malaria. It is also use occasionally to reduce symptoms of rheumatoid arthritis and to treat amebiasis, systemic and discoid lupus erythematosus, sarcoidosis, and porphyria cutanea tarda [14]. The FDA reported that chloroquine is unlikely to be effective for treatment of COVID-19 and serious side effects, such as irregular heartbeat in clinical studies of hospitalized patient with COVID-19 [15]. Nonetheless, the FDA and the National Institutes of Health (NIH) also stated that chloroquine should be taken for the treatment of COVID-19 only

under the direction of a doctor in a clinical study [15]. This ambiguity suggests that the verdict on chloroquine / hydrochloroquine as a treatment/management of COVID-19 infections remains unknown. Perhaps, the early exposures of Africans to these malaria tablets / medications could account for the high recovery rate and low deaths from COVID-19 infections experienced on the continent. This thought may not be far fetch, considering some suggestions that hydro chloroquine may be helpful in the management of COVID-19 infections.

CONCLUSION

In conclusion, challenges to the Covid-19 pandemic responses include relaxation and lukewarm attitude towards the wearing of masks in public areas, mask-less closed quarters at social gatherings and poor hygiene and sanitation. With the advent of a more infectious and perhaps virulent strain of SARS-CoV-2 in the UK (reportedly accounting for over 60% new infections in the London area), South Africa, the United States and other countries, strict barrier measures to contain the spread of the virus globally should be further emphasized and strictly enforced. The wearing of masks in public, social distancing, frequent hand washing and the use of hand sanitizers should constitute the bedrock policy for controlling the spread of the virus until when a sizeable proportion of the population is vaccinated to limit the transmission, improve care and reduce morbidity and mortality associated with the virus. Health threats go beyond the traditional domain of sovereign countries in a world. In an increasingly dependent and interconnected world, the efforts of every government, working synchronously is critical in the fight to rid the world of this virus and alleviate human misery.

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COMPETING INTERESTS

The author declares no competing interests with this case.

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