Review Article

Why has Africa reported relatively few COVID-19 cases so far? A web-based survey

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Abstract

Background: Africa's first COVID-19 case was identified in Egypt on 14 February 2020. Since then, almost all African countries have reported cases. The pandemic is transitioning to more widespread community transmission in most African countries, underscoring the need to further scale-up COVID-19 testing with a much wider geographic coverage. In Africa, the expected devastation caused by COVID-19 has been 'delayed' compared to some European countries and the USA. The reason behind this is not well understood. The aim of this Google survey was to collect speculations about the phenomena in Ethiopia, in particular.

Methods: This web-based survey used Google Forms to collect data from 28 April to 13 May 2020. Participants from the general public with different expertise were invited via email to take part in the survey. Participants' voluntarism to fill in the form, and their age, sex and educational status, were recorded. In addition, they were asked whether they worried about COVID-19 and the role of lockdowns to minimize the transmission rate of the disease in Africa. Multiple suggestions about the possible reasons behind the relative low number of COVID-19 case and fatalities were recorded, and the collected data were summarized using a Microsoft Excel spreadsheet.

Results: A total of 102 participants took part in the web-based survey. Respectively, 92.1% and 64.4% of the participants worried about COVID-19 in Africa and believed that lockdowns could contain the disease in Africa. As for the question why, Africa still has a low number of COVID-19 cases and fatalities compared to other continents, participants reported the following points as the main factors: poor COVID-19 screening practice in the continent (71.3%); God is saving Africa (33.7%); Africans are immune to the virus (18.8%); and poor connection to the rest of the world (18.8%).

Conclusions: There is a big concern about COVID-19 in Africa. Timely and accurate epidemiological data is one of the most important tools to inform and drive the COVID-19 response on the continent. Until researchers know exactly what is going on with COVID-19 in Africa, its member states need to keep on measuring and testing. [*Ethiop. J. Health Dev.* 2020; 34(4):313-316]

Key words: COVID-19, SARS-CoV-2, Africa

Background

The ongoing pandemic of coronavirus disease 2019 (COVID-19), caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is rapidly spreading worldwide from its place of origin in Wuhan City, Hubei Province, China in late 2019. The pandemic has brought a new wave of challenges to health care systems across the globe. At the time of writing (3 January 2021), the disease reportedly has affected more than 85 million people in over 210 countries and territories, and caused over 1.8 million deaths globally (1-3).

COVID-19 mostly causes benign symptoms in adults, although some cases become severely ill and require hospitalization with respiratory support. It spreads from person to person through infected air droplets that are projected during sneezing or coughing. It can also be transmitted when humans make contact with hands or surfaces that contain the virus and touch their eyes, nose, or mouth with their contaminated hands. In the absence of effective treatments or vaccines, the World Health Organization (WHO) has strongly recommended countries to implement interventions to curb the rapid spread of COVID-19 by minimizing contact between individuals and implementing physical distancing (4,5).

Africa's first COVID-19 case was reported in Egypt on 14 February 2020, when a Chinese national tested positive in the country. Since then, a total of more than 52 member countries have reported cases. According to the Worldometers website, Africa's share of COVID-19 cases was greater than 2.8 million infections and more than 66 thousand deaths, as at 3 Jan 2021 (2). Given the limited testing capacity, the numbers may greatly underestimate the true burden of the disease on the continent. The observed lower rate of transmission, lower age of people with severe disease and lower mortality rates compared to what has seen in most affected countries might be largely driven by social and environmental factors (6).

According to a recent report from the WHO, close to 190,000 people in Africa could die of COVID-19, and 29 to 44 million could be infected in the first year of the pandemic if containment measures fail. The research, which is based on prediction modelling, looks at 47 countries in the WHO African Region with a total population of 1 billion. There would be an estimated 3.6-5.5 million COVID-19 hospitalizations, of which 82,000-167,000 would be severe cases requiring oxygen, and 52,000-107,000 would be critical cases requiring breathing support. Such a huge number of

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patients in hospitals would severely strain the health care system capacities of African countries (6).

Even though Africa has reported relatively few confirmed COVID-19 cases and fatalities thus far, the African Centre for Disease Control and Prevention (CDC) and WHO are warning nations to take lessons from countries that have been more severely affected (5,6). Until experts know exactly what is going on with COVID-19 in Africa, its member states need to keep measuring and testing. Therefore, in this online-based short survey, the authors aimed at exploring the possible justifications behind the low number of COVID-19 cases and deaths compared with Europe and the USA.

Methods

This was an online-based survey using Google Forms. Data were collected in the period 28 April to 13 May 2020. Participants from the general public with different expertise were invited via email by the first author to take part in the survey and the web link of the online form was also shared on the first author's Facebook page. Participants' voluntarism to fill the form, and their age, sex and educational status, were recorded. In addition, the study participants were asked whether they worry about COVID-19 and the role of lockdown to minimize the transmission rate of the disease in Africa. Finally, participants were asked to provide multiple suggestions about the possible reasons behind the relatively low number of cases and death rate associated with COVID-19 in Africa. The collected data were summarized using a Microsoft Excel datasheet.

Ethical issues

All the participants were asked to voluntarily participate in the web-based survey and their consent was ensured. The names and identifiers of the participants were not collected.

Results

In this web-based survey, a total of 102 respondents participated. The mean (±SD) age of the study participants was 33.5±5.5 years. Of the 102 participants, 88.2% and 71.3% were males and had MSc/MA/MD educational qualifications, respectively. Further, 92.1% and 64.4% of the participants, respectively, worried about COVID-19 and believed that lockdown interventions could contain the spread of the disease in Africa (see Table 1).

Table 1: **Participants' sex and educational status, and their reflections on COVID-19 in Africa, April-May 2020**

Variables		n (%)
Sex (102)	Male	90 (88.2)
	Female	12 (11.8)
Educational status (94)	Diploma	2 (2)
	BSc/BA	12 (13.9)
	MSc/MA/MD	72 (71.3)
	PhD	8 (7.9)
You worried about COVID-19 in Africa? (101)	Yes	93 (92.1)
	No	3 (3)
	Maybe	5 (5)
Lockdown could work to contain the spread of COVID-19 in Africa? (101)	Yes	65 (64.4)
	No	11 (10.9)
	Maybe	25 (24.8)

BSc/BA: Bachelor of Science/Bachelor of Arts
MSc/MA/MD: Master of Science/Master of Arts/Medical Doctor

Participants in the current study were asked to provide responses to why Africa still has lower numbers of COVID-19 cases and fatalities compared with some European countries and the USA. They reported the following: poor COVID-19 screening practice on the continent (71.3%); God is saving Africa (33.7%); Africans are immune to the virus (18.8%); and Africa is less connected to the rest of the world (18.8%) (see Figure 1).

In addition, about 17 participants noted the following in relation to the lower rate of COVID-19 cases and deaths in Africa: difficult to conclude within this short period of time; high altitude of the continent; hot season in the tropical region; previous exposure to similar infections; the virus may preferentially attack some groups, probably white people; the virus may act differently in Africa; the African population is relatively young; widespread use of the Bacillus Calmette-Guérin (BCG) vaccine. One participant mentioned that the worst-case scenario is still to come in Africa.

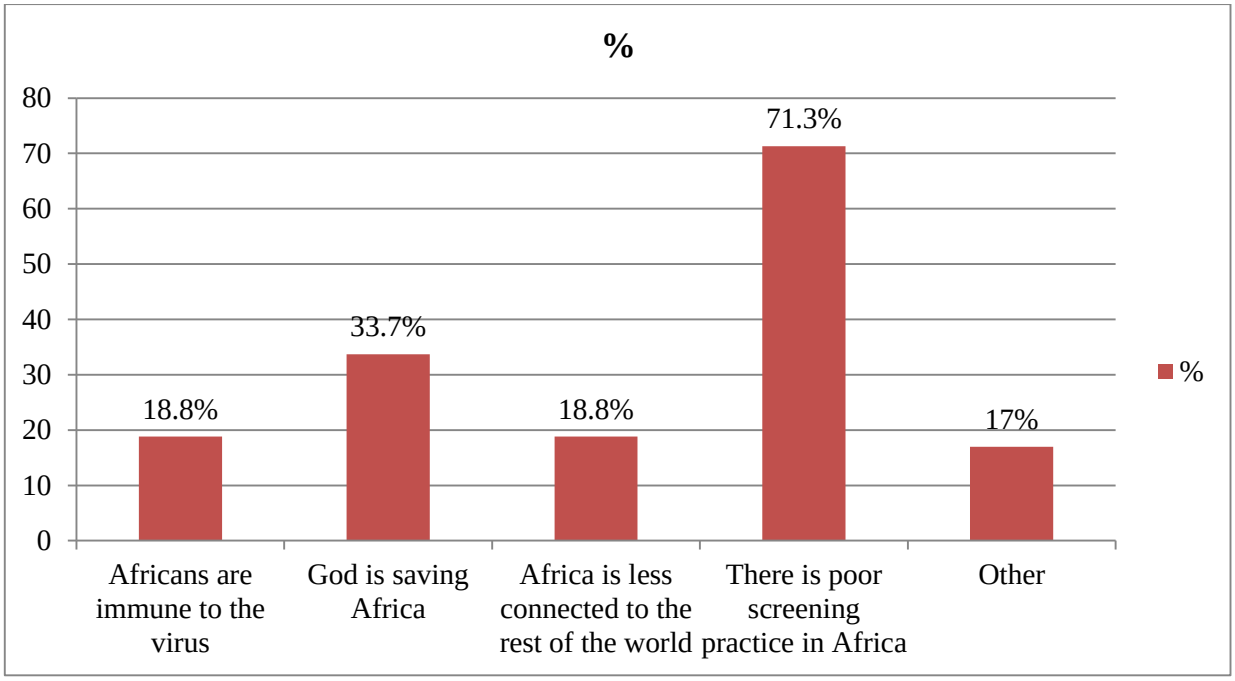

Figure 1: **Participants' response on possible reasons why Africa has had fewer COVID-19 cases so far, April-May 2020**

Discussion

According to the Worldometer and different international media reports, COVID-19 cases are increasing on a daily basis. This suggests that the African continent might simply be behind the curve, and the pandemic might get worse and speed up in the days, weeks and months to come (2).

Some experts claim that the slower spread of the disease in Africa might be attributable to less dense populations, the effect of ultraviolet light, or a climate that results in people spending more time outside. Africa's youthful population may also help to explain the low death rate so far. The median age in Africa is 19.4 years, compared with 40 in Europe and 38 in the USA (7). It has also been stated that the level of COVID-19 testing in Africa is extremely low, implying that many cases might have gone undetected. These points are reflected in our online survey. In fact, most of the participants stated that poor screening practice in Africa might contribute to the few cases and deaths reported on the continent. It could be possible, too, that people with underlying conditions, such as tuberculosis, might respond differently to the current pandemic, conceivably making patients more resistant because of a previously triggered immune response by similar microbial infection, rather than more vulnerable as is usually the cased. The most important thing is whether Africa is ready for this pandemic (1,9).

Other experts state that there is no solid evidence that any factors specific to Africa – a younger population, warm weather or even the higher prevalence of BCG vaccinations – have had any impact on the disease's spread. Thus, it is far too early to conclude from the data available that the disease has been spreading more slowly in Africa. However, it could be that the virus is spreading differently in Africa compared to the rest of the world, including with more asymptomatic cases (8). WHO has warned that the lower rate of COVID-19 cases/deaths in Africa might imply a more prolonged outbreak over a few years (6). Consequently, it is of critical importance to draw evidence-based conclusions, and experts in Africa should conduct research into the disease's progress to help governments implement informed decisions (6,7).

In Africa, COVID-19 cases and fatalities are increasing on a daily basis, which suggests the continent might simply be behind the curve, with the pandemic picking up speed in the days, weeks and months to come. There is concern about the huge impact of the COVID-19 pandemic on African member states, many of which have fragile health systems. Timely and accurate epidemiological data is one of the most important tools to inform and drive the COVID-19 response. To respond to the generational public health crisis caused by the global COVID-19 pandemic, a swift, coordinated effort across many sectors of society is compulsory. Further, African countries should adopt widespread SARS-CoV-2 testing, which member states have been practicing over the years in relation to HIV, tuberculosis and malaria detection.

Conclusions

Respectively, 92.1% and 64.4% of the participants worried about COVID-19 in Africa and believed that lockdown could contain the spread of the disease in Africa. Asked why Africa still has relatively low numbers of COVID-19 cases and fatalities, participants reported different views, of which poor COVID-19 screening practice on the continent (71.3%), God is

saving Africa (33.7%) and Africans are immune to the virus (18.8%) were the main reflections provided.

There is widespread concern about COVID-19 in Africa. Timely and accurate epidemiological data is one of the most important tools to inform and drive the COVID-19 response on the continent. Given the relatively few study participants who completed this online survey, an additional large-scale study is warranted.

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