

LETTER TO THE EDITOR

Limited transmissibility of coronavirus (SARS-1, MERS, and SARS-2) in certain regions of Africa

To the Editor,

A novel coronavirus disease (COVID-19) was first identified in Wuhan, China in December 2019,¹ and after a few weeks, the World Health Organization (WHO) declared the outbreak as a global pandemic.² Scientifically, the virus was named "severe acute respiratory syndrome 2 (SARS-2) coronavirus."³ High-level endemic transmissions occurred in several countries and, while yet very limited, have spread in certain regions of the globe, particularly in Africa.⁴ As of 4 April 2020, the virus continues to spread in more than 181 countries, infecting over 1, 170, 159 people and causing over 63 832 deaths.⁵

According to statistics, only low-level endemic transmissions were observed in parts of Africa.⁵ The United States has the most cases (297 575), followed by Spain (124 736), Italy (124 632), Germany (92 150), France (83 050), and China (82 543). However, the spread of the SARS-2 in the African continent appears affected by geographical regions. The highest number of SARS-2 cases has been reported in South Africa (1505 cases) and other North Africa regions, including (Algeria: 1251 cases, Egypt: 985 cases, Morocco: 858 cases, and Tunisia: 495 cases). The lowest number of SARS-2 cases in Africa have been reported in Papua New Guinea (one case), Sierra Leone (four cases), Botswana (four cases), Gambia (four cases), and Malawi (four cases) (Figure 1).

In the past, the coronavirus that is known to infect animals and humans showed limited geographical spread. For instance, the SARS-1 coronavirus emerged in China in 2002 and ended in 2003,

with a short period of circulation.⁶ The predominant cases 7082 of 8096 (87%) were found in China and Hong Kong. The African continent reported only one SARS-1 case, which was detected in a traveler having returned to South Africa from Hong Kong as per the WHO situation report Figure 2.

The Middle East respiratory syndrome (MERS) coronavirus was first reported in Saudi Arabia in September 2012.⁷ The virus is still circulating, primarily in the Arabian Peninsula, with sporadic cases, and tends to be correlated with climate factors.⁸ As of 3 April 2020, a total of 2521 MERS cases with 866 deaths with zoonotic cases (camels to humans) were limited to the Arabian Peninsula.⁹⁻¹² Studies show a long-term MERS coronavirus circulation in African camels.^{13,14} Although MERS-CoV antibodies have been detected in camels in Africa,¹³⁻¹⁵ no zoonotic transmission was found in Africa. For instance, a study from Sudan detected MERS virus in camels but not in camel workers.¹⁵ This is unlike the situation in the Arabian Peninsula, where a high incidence of MERS infections was found in camel workers.¹⁶ This indicates that the transmissions and viability of coronaviruses (SARS-1, MERS, and SARS-2) could vary by geographical regions. Environmental or climate factors may play a role in the decrease of intensity of coronavirus transmissions in parts of Africa. This study highlights the urgent need for environmental and seroepidemiological studies to address transmissions and viability of coronaviruses in Africa as a limited community transmissibility has been observed for coronaviruses (SARS-1, MERS, and SARS-2).

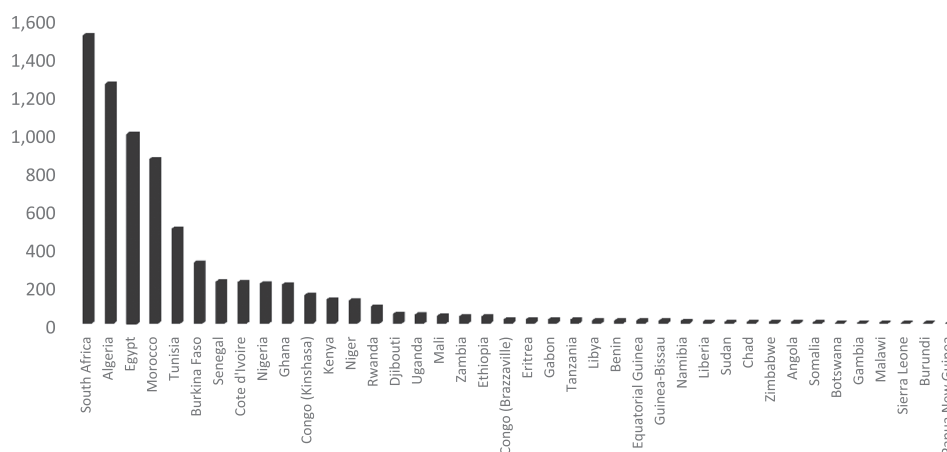


FIGURE 1 Severe acute respiratory syndrome 2 outbreaks in Africa by countries, since February 2020

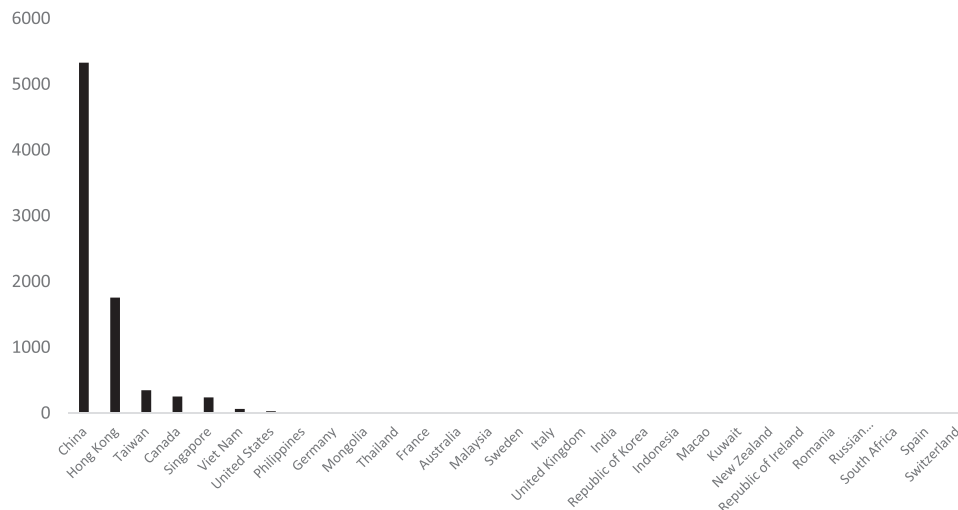



FIGURE 2 Severe acute respiratory syndrome 1 outbreaks by countries (2002-2003)

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CONFLICT OF INTERESTS

The author declares that there is no conflict of interests.

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