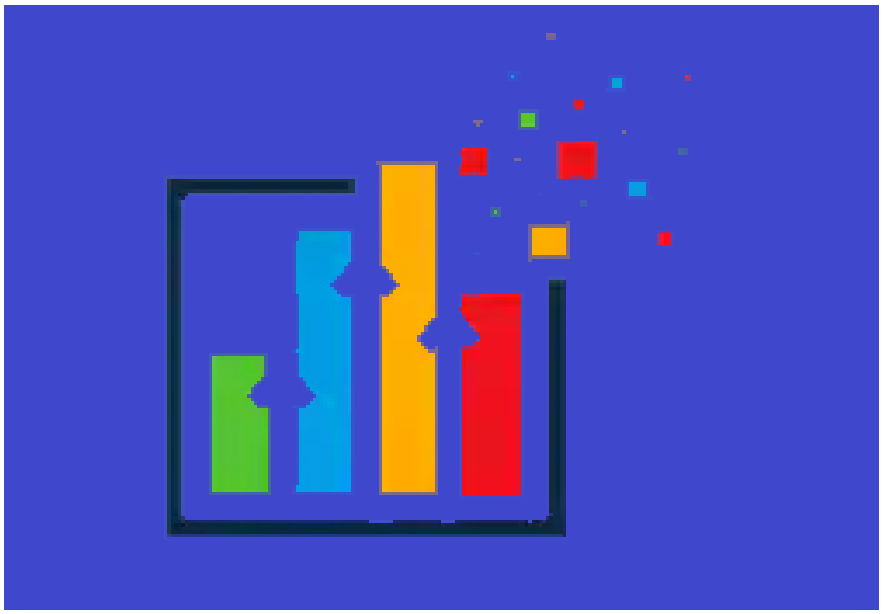
Statistics Daily

Quanell Biyana[1]

[1]University of Cape Town

May 25, 2020



Statistics Daily

What is Coronavirus (Covid-19)?

The name corona refers to a crown, because when they are viewed under an electron microscope they have crown-like spikes on their surface. Examples of these include the Middle East Coronavirus Respiratory Syndrome (MERS-CoV), first identified in Saudi Arabia in 2012, and Extreme ARS-CoV, first recognised in China in 2002. Serious Coronavirus ARS-CoV 2 (SARS-CoV-2) was verified as a causative agent of coronavirus disease in 2019 on January 7 , 2020. There is still no known source of the virus (NICD, 2020).

Who is at Most Risk for Covid-19?

As there is a population spread of SARS-CoV-2 in South Africa, all South Africans are at risk of infection with SARS-CoV-2 (a disease called COVID-19). There are areas in the country where the virus can be transmitted locally more frequently than other areas. The following websites www.nicd.ac.za and www.health.gov.za have regular updates which easily accessible.

Unpacking the worldwide Transmission of the Virus and What that Means for South Africa

COVID-19 has spread exponentially across the world to all continents. Africa was one of the last affected regions, with more than 34,000 confirmed cases since the end of April (as indicated by BBC Coronavirus in Africa) where the first case in Egypt, of a COVID-19 case was reported on 14 February 2020. South Africa announced on 5 March 2020 its first COVID-19 case, and is now one of the continent's most significant incidents since.

Figure 1: This Figure depicts the growth in the number of Confirmed cases, as a function of time (i.e months)

About a percentage of the total cases in the country are confirmed cases. Perhaps there are double the real number of incidents, or even 10 times the number of records. The image can be a little clearer as the tests scale up (Geffen, 2020). This speaks volumes to the resources available to any given country and the gravity of what this implies for our healthcare systems. Moreover, a dramatic increase in test capabilities could lead in confirmed cases to a rapid increase. This does not mean that the number of cases necessarily grows explosively; simply that we will discover more (Geffen, 2020) . In Fig .1, we see how the virus has spread throughout the world. However, what this figure does not accurately depicted is the countries with that lie in between the the major players (i.e. China, USA, Brazil etc.). This is due to the spread of confirmed cases amongst countries, i.e. the difference between the highest number of confirmed cases and the lowest. Having said that, this animation highlights the growing demand for resources to combat this disease i.e. the more cases there are the more the healthcare system is required to help in healing these additional cases. Despite, the majority of all cases not presenting with severe symptoms or requiring extensive healthcare, the marginal increase will definitely put a stress on the healthcare system as a whole.

Figure 2: This Figure depicts the number recovered cases worldwide, as a function of time (i.e. months)

Recovery form this disease is defined in the following ways:

- Surveillance:

  A person who has COVID-19 is known to be alive and has spent 14 days since the diagnosis (for asymptomatic) has stopped, or since a mild case (for moderate to serious hospital cases) or when the symptoms were there or when clinical stability / additional oxygen has stopped. However, one should note that this definition of surveillance does not specify fever resolution or symptom improvement at the time of isolation nor return to work for practical purposes (NICD, 2020).

- Clinical does not have specified definition for what a "Recovered" patient looks like, however , the following criteria are specified for de-isolation of a person who was confirmed to have COVID-19 (NICD, 2020):

1. Asymptomatic patients: 14 days after initial positive test
2. 14 days after the onset of their symptoms for cases of mild disease (this is defined as SpO2[?]95% and respiratory rate <25 and heart rate <120 and temperature 36-39°C and mental status normal)
3. 14 days after achieving clinical stability (e.g. after supplemental oxygen was discontinued) for cases with moderate-severe disease
4. Patients who are still symptomatic at the end of their isolation period can be de-isolated provided that their fever has resolved and their symptoms have shown.

Nonetheless, this provides immense encouragement to the masses. This does not imply that everything can carry on as normal. We see in the figure below the measure taken by the South African government to prevent the spread of this virus to vulnerable population of the country

Figure 3: Measure introduced to reduced the number of infections

The restriction of people's travel, social isolation and monitoring of all persons in contact (all of which are done in different ways worldwide) appear to be effective strategies for managing the spread of the disease. However, this must be taken with a pinch of salt, because COVID-19's emergence in South Africa greatly contributed to systemic weaknesses in the quality of service delivery in different municipalities across the country, such as water , sanitation, housing , health care and infrastructure. The efforts to contain the spread of the disease has also highlighted that the country's essential services for a public health pandemic of a global scale, such as COVID-19, do not have the key capacities.