

Population based survey reveals why SA is at a turning point in the pandemic

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/EINPresswire.com/ -- South Africans had extensive immunity against severe Covid-19 disease and death prior to Omicron, due to high infections in the first 3 waves and vaccination.

A recent study in Gauteng, where a quarter of South Africans – some 15.5 million – live, showed that three in four people had been infected by the SARS-CoV-2 virus (which causes Covid-19) at least once since the start of the pandemic in March 2020 and prior to the Omicron wave in SA in November 2021.



Wits University Professor of Vaccinology Shabir Madhi

The immunity induced by such infection, coupled with the rollout of Covid-19 vaccines to at least one-third of the population, contributed to major decoupling of infections relative to severe Covid-19 that transpired during the fourth wave compared with the three earlier waves in SA.

The findings from South Africa indicate that despite breakthrough infections (when people contract the virus after they have been vaccinated) or reinfections (in those with prior history of infections) likely having been common during the course of the Omicron wave, immunity induced by vaccine or past infection generally protected well against severe Covid-19 disease, hospitalisation, and death.

The study, titled "South African population immunity and severe Covid-19 with Omicron variant" was led by scientists at the Wits Vaccines and Infectious Diseases Analytics Research Unit (Wits-VIDA) and reported in the prestigious [New England Journal of Medicine](#) on 23 February 2022.

The study presents the first peer-reviewed and published data demonstrating decoupling between infections and Covid-19 severe disease and death.

The study aimed to determine sero-positivity against SARS-CoV-2 before the fourth wave of Covid-19, in which the Omicron variant was dominant.

'Sero-positivity' measures for the presence of antibodies against the virus as a metric of past infection – in this case, the SARS-CoV-2 virus.

Furthermore, the study analysed data provided by collaborators at the National Institute for Communicable Diseases (NICD) on trends in recorded Covid-19 cases, hospital admissions and deaths since the start of the pandemic. This was complemented by Covid-19 attributable death rates that were evaluated using excess mortality data obtained from the South African Medical Research Council (SAMRC).

Dry blood spots from 7010 randomly selected individuals in Gauteng were tested to determine sero-positivity.

Notable findings included: Sero-positivity ranged from 56.2% in children younger than 12 years to 79.9% in individuals older than 50 years; at a sub-district level, sero-positivity was as high as 85% in the inner city, densely populated areas; and sero-positivity was 68% in unvaccinated individuals and 93% in vaccinated individuals.

These data indicate that although less than one million cases of Covid-19 had been recorded when the sero-survey was completed in Gauteng, this represented less than 10% of the 10.4 million people imputed to having been infected by the virus at least once since the start of the pandemic and prior to the onset of the Omicron wave.

Furthermore, although only one-third of the population in Gauteng had received at least a single dose of Covid-19 vaccine prior to the onset of the Omicron dominated wave, the data suggest that the majority of vaccinated individuals also had natural infection-induced immunity (i.e., hybrid immunity). Extensive protection against severe Covid-19 was also prevalent in unvaccinated individuals, based on using sero-positivity as a proxy for presence of protection against severe Covid-19.

The analysis of trends in Covid-19 cases, hospitalisation and death rates over the course of the pandemic impressively reported major decoupling of incidence of infections relative to Covid-19 hospitalisation and death during the Omicron dominant wave in SA, compared with earlier waves.

Notably, compared with the Delta variant-dominant third wave in SA – which contributed to 44% of Covid-19 hospitalisations and 50% of deaths since the start of the pandemic in Gauteng – the Omicron wave only contributed to 10% hospitalisations and 3% of deaths.

The decoupling was also evident in people older than 50 years of age, among whom 61% had received at least a single dose of Covid-19 vaccine prior to the onset of the Omicron wave, who had contributed to more than 80% of Covid-19 deaths in SA.

In the older than 50 years age group, only 2% of deaths since the start of the pandemic in Gauteng occurred during the course of the Omicron wave, whereas 53% occurred in the Delta variant dominant wave, which transpired when vaccine roll-out had only belatedly started in SA.

“The study findings indicate that we have reached a turning point in the Covid-19 pandemic, even in countries with a modest uptake of vaccines, but where there has been a high force of natural infection, which has resulted in a massive loss of lives,” says lead author Shabir Madhi, Dean of the Faculty of Health Sciences and Professor of Vaccinology at Wits University, and Executive Director of Wits VIDa.

Madhi says that in South Africa, 490 people per 100 000 have died of Covid-19. This puts South Africa in the top 10 countries globally of Covid-19 fatality rates.

“When excess deaths are factored in, three times the official figure of 97 000 people in South Africa have died of Covid-19. The actual number of deaths from Covid-19 in South Africa is closer to 300 000 people,” he says.

The findings have significant implications for Africa, a continent where vaccines and resources to support vaccine roll out are limited and where hospitalisation for Covid-19 severely constrains public health facilities and resources.

“The findings from the study necessitates a recalibration of not only how we deal with the pandemic, which appears to be at its tail end, but also how we make the most efficient use of vaccines across Africa where only approximately one-tenth of the population have received at least a single dose of Covid-19 vaccine,” says Madhi.

Vaccines still have an important role to play in people who have past infection, as other studies have shown that hybrid immunity induces a more robust and broader repertoire of immune responses, that would heighten protection even against mild Covid and reduce infectiousness, compared with immunity induced by natural infection or vaccines alone.

Deborah Minors
University of the Witwatersrand, Johannesburg
722404990 ext.

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