

TB, HIV less likely to cause Covid-19 death than other comorbidities

 By [Nicci Botha](#)

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While it would be expected that the risk of Covid-19 death for people with tuberculosis (TB) or HIV to be very high, research in the Western Cape has shown that it is, in fact, fairly modest.



Mary-Ann Davies

Professor Mary-Ann Davies of the University of Cape Town School of Public Health said that people with these conditions only have a 2.5 times increased risk of Covid death.

“Two key comorbidities in our setting are, of course, TB and HIV and there really hasn’t been much data on whether these increase your risk of poor outcomes with Covid-19.

“Clearly we are seeing the same effects that we’ve seen in international studies of older age and comorbidities placing people at substantially increase risk. We’ve known about a lot of these, but what’s new from our data is that we’ve been able to quantify the effect of HIV and TB which until now we haven’t known, she told a webinar hosted by Bhekisisa Centre for Health Journalism.

She explained that to work out the different risk factors with death can be quite difficult because some of those risk factors

are linked to each other. “For example, people who are diabetic are also more likely to be overweight, and we know that both diabetes and being overweight increase your risk of Covid death. So, what we need to do is try to disentangle the different effects of each of these individual risk factors, to work out how big a role each risk factor is playing. In epidemiology we call this dealing with compounding.”

For that, scientists need good data at a population level on all of these factors, as well as on Covid-19 outcomes. “Getting that good data is not easy, but we are very fortunate in the Western Cape in that across all our public sector health services we are able to put together data from several different systems on individual patients through a unique identifier which is used across all of our data systems in the province.”

Davies said that the Provincial Health Data Centre is the repository for all this data from emergency centres, hospitals, primary health clinics, and chronic disease management systems, laboratories and pharmacies. “This gives us data which helps us to manage patients optimally, but also helps us to understand the comorbidity profile of our different patients. The way we can do that is to use the information we have on laboratory tests and medications that have been given to infer that patients have different conditions.

“If someone has had a laboratory diagnostic test for diabetes or if they are receiving anti diabetic medication we can infer that they are diabetic. Similarly if someone has had a laboratory diagnostic test for HIV or if they have had a viral load or CD4 test done or if they are receiving antiretroviral therapy, we can infer that they are HIV positive.

“There are a range of conditions that are quite easy to infer on that basis. Those are things that we don’t diagnose in the laboratory or we don’t treat with medications, so things like being overweight or obese, habits like smoking and things like socio economic status.

“But for the comorbidities that we do know about we were able to take all 3.5-million patients who are active in our public health system. In other words, someone who has had a visit to a health facility in the last three years and look at the factors associated with Covid death in association with each of those comorbidities in our population.”

“ What we really want to know is what are your chances of dying from Covid with the different risk factors. We are not so interested in the absolute risks that we see, but rather the range of values for those risks that are compatible with our data, which is something we call the confidence interval. ”

Looking at comorbidities that haven’t been looked at in other settings, the risk for people with current TB is about 2.5 times higher and people with HIV about 2.75 times higher risk. This is much smaller than the risks associated with people with diabetes, she said.

“What’s curious is that when we compare people who are virally suppressed and those who are not virally suppressed, we see that there is an increased risk for both those groups of patients and this is not what we expected. Because we thought that if there was any increased risk of death associated with HIV that it would be driven by people not on treatment and having poor immune function. But it seems that is whatever is going on it’s a little more complicated than that and there is clearly a whole lot more research that needs to be done to really understand this more.”

So what does all this mean at the level of the population?

“If we had to look at how much each of these comorbidities are contributing to the deaths we are seeing, and if we had to look at 100 people who have died from Covid-19 in the public sector in the Western Cape what we can see is that the overwhelming majority of those deaths are due to diabetes (52/100). We also see a large contribution from high blood pressure (19/100) and then smaller numbers from kidney disease, and about 12 of those deaths can be attributed to HIV and about half that number to either current or previous TB,” Davies said.

She added that these are very important findings to understand what’s driving the risk of Covid death in the South African setting. “But whenever we see results like this, we always try to confirm them by taking a different approach and seeing if

we get a different result, and also these results are limited to our public sector patients.

“So what we also did was calculate something called the standardised mortality ratio and what we’re looking at here is the actual number of deaths in people with Covid and HIV and we’re comparing that to how many deaths we would have expected if people with HIV and Covid had the same risk of death as people without HIV. The headline finding is that the standardised mortality ratio is about 2.3 so that’s very similar to the 2.75 we found in our public sector patients. A little bit lower probably because we are adding in private sector patients as well. And if we have to say how much more mortality across both private sector is due to HIV we estimate that to be about 8%.”

Take home messages

“The risk may be overestimated if we haven’t fully disentangled all of the comorbidities and risks that drive Covid death and particularly here I want to emphasise overweight and socio economic status as factors that need to be thought about. The other important factor to consider is that people with HIV and TB tend to be younger. Younger people tend to have an overall risk of Covid death that is low. So the absolute increase in deaths due to HIV or the absolute number of Covid deaths that HIV is responsible for is relatively low at a population level is less than 10%.

ABOUT NICCI BOTHA

Nicci Botha has been wordsmithing for more than 20 years, covering just about every subject under the sun and then some. She's strung together words on sustainable development, maritime matters, mining, marketing, medical, lifestyle... and that elixir of life - chocolate. Nicci has worked for local and international media houses including Primedia, Caxton, Lloyd's and Reuters. Her new passion is digital media.

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