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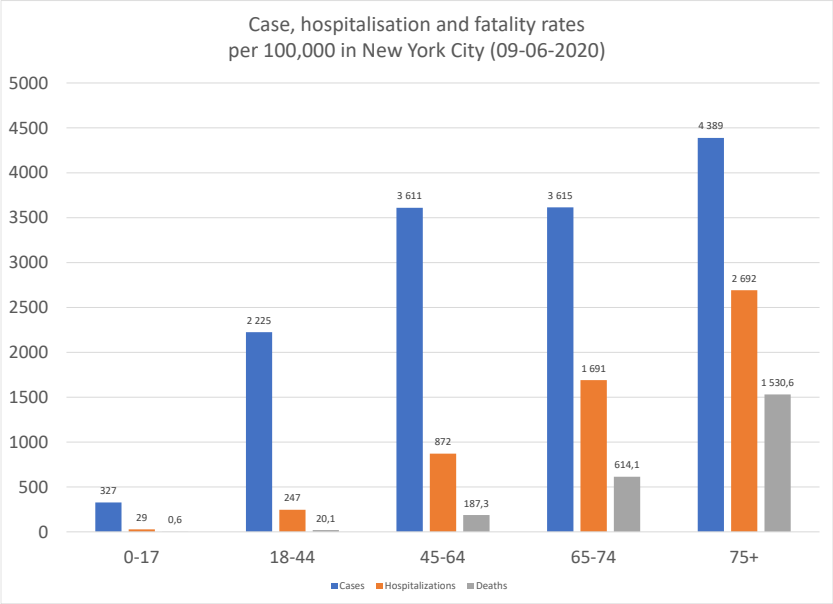
Data in the time of COVID-19: Age matters

South Africa instituted one of the strictest regulations with respect to lockdown globally. Only those deemed essential workers, such as those working in hospitals and in retail stores, could go to work. Schools and universities closed their doors, and scholars and students were expected to be stay at home. This created issues for essential workers who needed access to childcare for their children. School and university studies moved online. Online studies were only possible where there was both adequate access to bandwidth and quality of access.

Data internationally indicates children are less likely to be severely impacted by COVID-19 with lower rates of hospitalization and lower fatalities. As the lockdown is eased in South Africa, more people are expected to go back to work. With this, the issue of school closure becomes more problematic. There is the trade-off between risk to children's health, loss of their education and loss of family livelihood. Many children in South Africa face food security issues, with school providing the only meal of the day. In order to make policy decisions about schools and universities opening, we need to analyze the impact of COVID19 on different age groups. There is much we can learn from publicly available data locally and overseas.

International Data

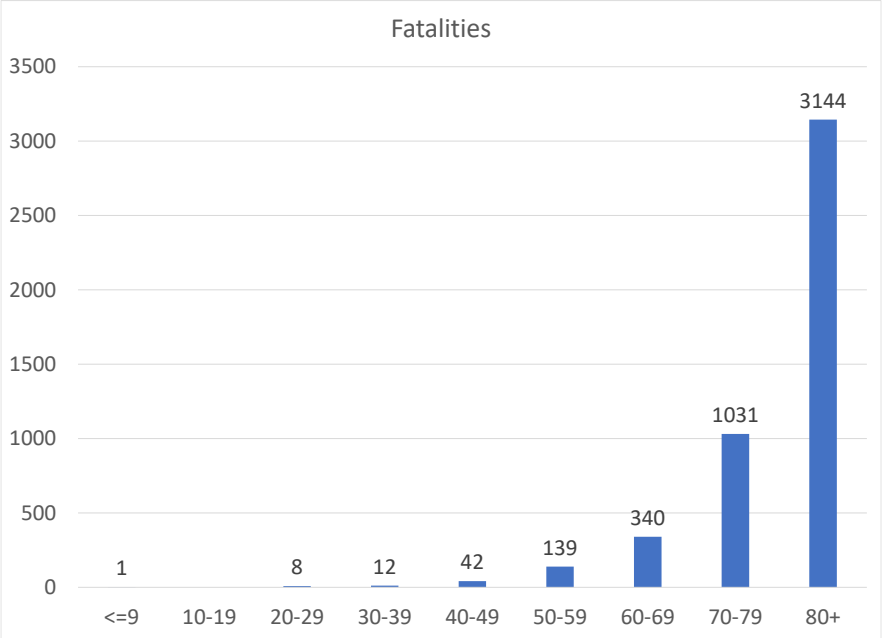
Data internationally show that children are less affected by COVID-19. Data in New York City indicate 11 confirmed and 3 probable fatalities related to COVID-19 in the age group 0 to 17. The number of cases, hospitalisation and fatalities in the age group 0-17 were respectively 327, 29, and 0.64 per 100,000 children, whereas the age group 75 and above experienced respectively 4389, 2692 and 1530 of cases, hospitalisation and fatalities per 100,000 population.



Data source: www1.nyc.gov

In Canada, the total COVID-19 related fatalities were 7290 (7th June), of which there has been zero COVID-19 related deaths among those under 20. In Germany, there were 3 fatalities among age group under 20, out of a total COVID-19 related fatality of 8608.

Sweden is a special case study among all the countries. Sweden had very few lockdown measures, instead advising their residents to social distance rather than lockdown their economy through strict regulations. Junior and middle schools in Sweden were kept open. Children are less likely to physically distance from each other, which means they form a highly interconnected network with greater opportunities to pass the virus to each other. There was a total of 45722 positive cases and 4717 fatalities in Sweden by 9th of June. Despite, schools remaining open for children under 16, there was only one death attributed to COVID-19 in Sweden under the age of 16.

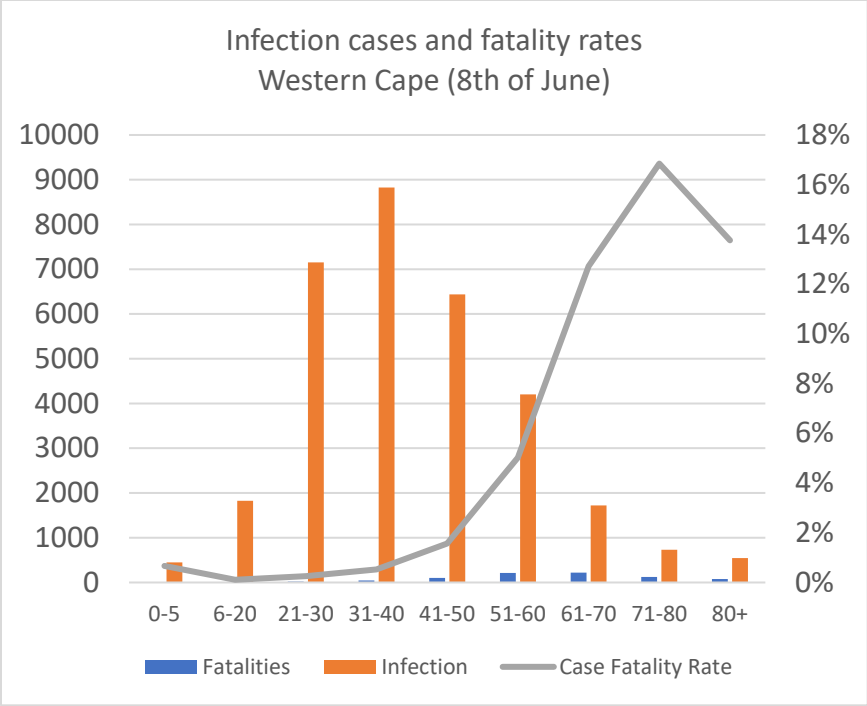


Data source: www.statista.com

However, while the fatality rates among school aged children in Sweden was much lower than those older than 70 years old, we need to understand children's propensity to transfer the disease. Given Sweden's lack of lockdown and keeping its economy open, there has been no study in the country, as far as we know, on virus transmission between children and from children to adults, such as teachers and parents.

South Africa

The South African government and the public have been grappling with sending children back to school. Publicly available data from the Western Cape provide some interesting insights into the impact of coronavirus on different age groups. The fatality rates are highly skewed towards older age population.



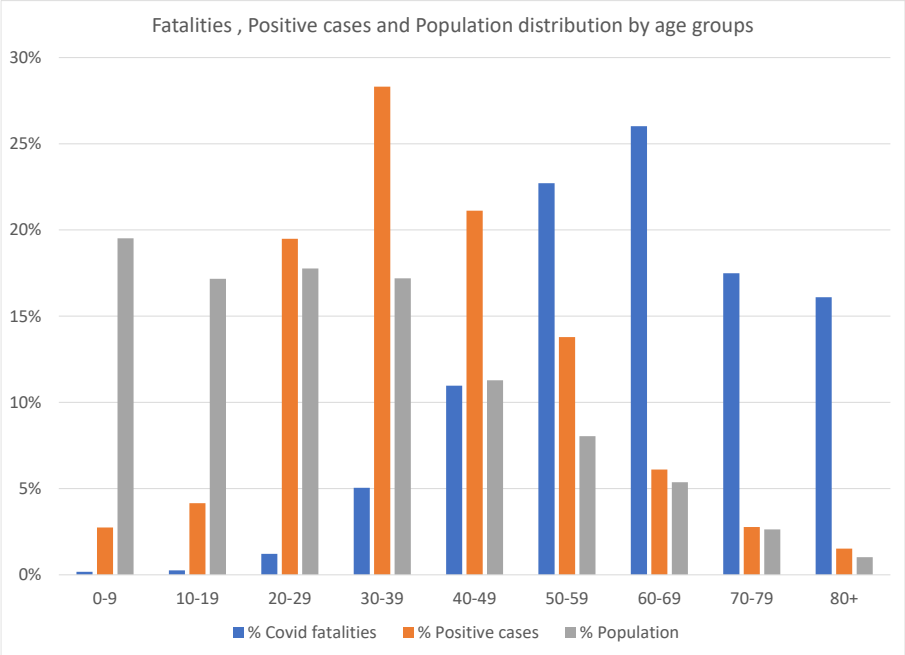
Data source: https://coronavirus.westerncape.gov.za/covid-19-dashboard

School going children fall in the age group 6-20 where the case fatality rate is 0.11% (Case fatality rate is the ratio of fatalities to the number of positively identified infections). The average case fatality rate for Western Cape is 2.5%.

An age factored policy is currently being implemented with respect to testing by the Western Cape's Department of Health. The new policy is not to test Capetonians younger than 55 unless there are other underlying health issues. This may be an indication of the Department's confidence in the lower severity of illness and higher recovery rate of those up to 55 years of age.

The most common comorbidities resulting in death in the province are diabetes, hypertension and HIV for those between 20 to 69, and hypertension, diabetes and chronic kidney disease for those older than 70 years of age. A high proportion of deaths (65%) in the Western Cape had more than one underlying health issues.

Across the country, all indications are that fatality rates among children is low compared to adults. We estimate the case fatality rate among age groups 0-9 and 10-19 were 0.23% and 0.14% respectively, while the country's average case fatality rate is 2.19% (10th of June).



Source: https://www.covid19sa.org/ and https://www.statsa.gov.za

The above graph illustrates the age-distribution across the country for COVID-19 fatalities, positive cases and population. The blue bars indicate that over 82% of the fatalities has been among those over 50 years of age, while almost half the infections (orange bars) are found in those between 30 and 49. By 9th of June, there has been two and three deaths attributed to COVID-19 in the age groups 0-9 and 10-19 respectively. The age distribution (grey bar) of the South African population is highly skewed towards the younger age groups. South Africa has a young demographic advantage compared to other countries with more than 70% of the population younger than 40 years of age. According to Professor Haroon Saloojee, executive member of the South African Paediatric Association, children are less like to get infected than adults, more likely like to be asymptomatic or have a lower viral load, and is less unlikely to be infectious.

More data is required.

An important line of study is child to adult transmission. This is a concern for parents and teachers, especially where children are cared for by their grandparents. Data is sorely needed for a focused study in child to adult transmission if we are to create policies with respect to children, such as school opening policies. This is especially important for households with elderly parents and grandparents and households with individuals who have health issues. Data across the country and internationally indicate comorbidity as a major factor resulting in death. More detailed data with respect to various age groups, particularly with other underlying issues is needed. It may be necessary to create policies that are not one size fits all for school-going children. For example, more care and social distancing may be required for children with certain comorbidity issues or those living with grandparents.