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Short Communication

COVID-19 fatality rate for Saudi Arabia, updated 8 August 2020

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We previously reported about the coronavirus disease 2019 (COVID-19) fatality rate for the Kingdom of Saudi Arabia (KSA) as per 3 June 2020 [1]. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections were showing a declining phase, however the number of likely infected was still a small percentage of the total population. Starting on 31 May 2020, KSA lifted bans on domestic travel, holding prayers in mosques and workplace attendance. This translated into a second wave of infection across most of the population that was not yet immune.

Fig. 1 (data from covid.ourworldindata.org) presents the COVID-19 data for KSA compared with data for the United Kingdom (UK). The total number of cases per million population of KSA has surpassed the number for the UK (8251 vs. 4563). The share of those likely infected who are very mild or asymptomatic is expected to be overwhelming (~80%). The share of the population of KSA that has been infected by SARS-CoV-2 starts to be relevant to provide some sort of background immunity from people who have been infected and have recovered (~41 250 per million). Despite the subject being controversial, most studies [2,3] show that people who have recovered from SARS-CoV-2 infection have antibodies to the virus. Daily new cases peaked on 18 June 2020 at 141 per million. The number of infected depends on the number of tests performed. This is similar in the UK and KSA. What is relevant to monitor the outbreak is the positive rate, i.e. the rate of infected over tested, which peaked in KSA on 16 June 2020 at ~25% and has been dropping continuously up to the present 2.5% and further reducing.

Regarding fatalities, while the UK is presently at 686 per million, KSA has 89.9 per million. The daily fatality rate is now about the same at 1 per million. At this more advanced stage of the COVID-19 outbreak, it is possible to re-evaluate the fatality rate of COVID-19 for KSA. Contradictory to Worldometer (www.worldometers.info/coronavirus) that reports the number of deaths and

recovered in closed cases and properly computes the fatality rate as the ratio between deaths and closed cases, Our World in Data (covid.ourworldindata.org) computes the case fatality rate (CFR) as the ratio between confirmed deaths and confirmed cases. The CFR is 1.09% for KSA while it is 15% in the UK, 15 times larger. The population density of KSA is 15.3 per km², the average age is 31.9 years, life expectancy is 75.13 years and per capita gross domestic product (GDP) is \$49 045. For the UK, the respective data are 272 per km², 40.8 years, 81.32 years and \$39 753. These environmental parameters do not explain the difference in CFR. One explanation is that during the peak of the epidemic, only serious cases were detected in the UK, while mild severity cases were missed. Other possible explanations are that those infected in KSA are mostly young expatriates and that nursing homes are not so popular in KSA as they are in the UK. Most of the fatalities occurred in nursing homes in the UK.

The total number of closed cases, either recovered or deaths, for KSA may be found in www.worldometers.info/coronavirus. Computed as the percentage of deaths in closed cases, the fatality rate is 1.24% (deaths 3167, recovered 252 039, closed cases 255 206). Updated on 3 June 2020 it was 0.83% (549/66 339).

Thus, associated with a much more widespread outbreak, over the last 2 months the percentage of deaths among closed cases has increased in KSA from 0.83% [1] to the latest 1.24%, which is still among the world's lowest. The total number of closed cases is not available for the UK in any of the databases.

We noticed [1] that the above data of fatality only refer to medium-to-severe COVID-19 cases that required medical attention. However, an overwhelming percentage of COVID-19 cases do not require medical attention, being either asymptomatic or very mild cases. If 80% of infections are mild or asymptomatic (www.who.int), by taking 20% of the 1.24% fatality rate in closed cases among the medium-to-severe COVID-19 cases, the fatality rate in KSA is therefore 0.248%. As a reference, the death rate for influenza and pneumonia for KSA [1] is 49.64 per 100 000, or 0.050%.

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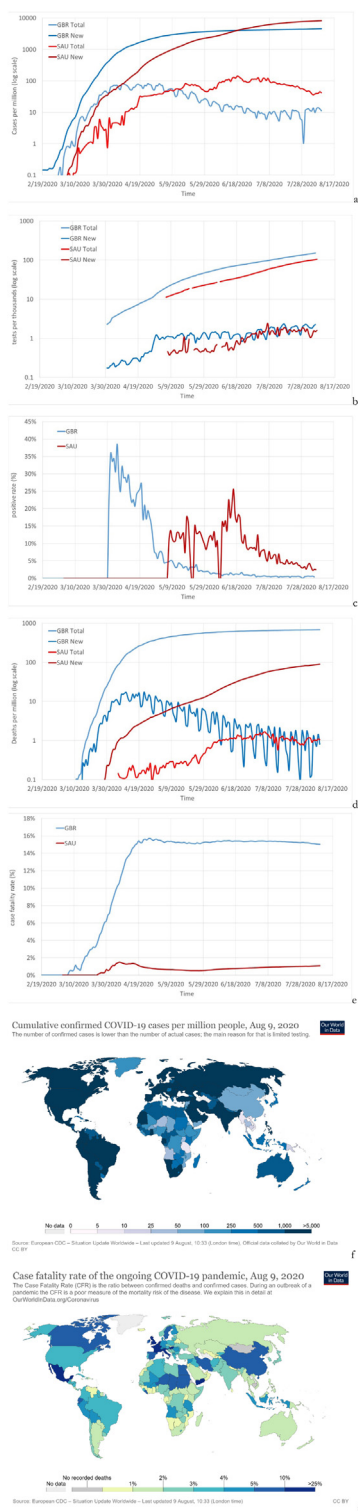


Fig. 1. Coronavirus disease 2019 (COVID-19) cases in the Kingdom of Saudi Arabia (SAU) compared with the United Kingdom (GBR): (a) number infected; (b) number of tests; (c) positive rate; (d) death rate; and (e) case fatality rate (CFR). Data from covid.ourworldindata.org. (f,g) Total number of infected and case fatality rate (CFR) across the world. Images from <http://www.covid.ourworldindata.org/>. Saudi Arabia is among the countries with the largest number of infected per million and the lowest case fatality rate in the world.

Thus, COVID-19 is much more serious than seasonal flu, but despite spreading to large sectors of the population, KSA has been able to keep the fatality rate among the world lowest. COVID-19 infectivity and fatality are lower than was initially thought in March [4]. Whilst the way out from this outbreak is still uncertain, long-lasting measures must be sustainable. The path to move forward in SARS-CoV-2 infection is not to limit infection through harsh restrictions enforced forever, which are everything but sustainable, and risk second waves [5], but to protect the vulnerable and to offer effective hospital care for those in urgent need of help.

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Competing interests

None declared.

Ethical approval

Not required.

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