

Risk Assessment Study for Office Work within Madrid, Spain

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The Author

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Purpose

The purpose of this study is to perform common-sense risk assessment regarding the proposition of working in an office in Spain with respect to SARS-CoV-2. Currently, there are no insurance plans available and there is no proven treatment.

Questions

What is the risk of working in an office in Madrid, Spain?

What is the risk of contracting the virus?

What is the risk after contracting the virus?

Why track case rates?

Why track death rates?

Methodology

To assess the risk, it must be understood where the risk originates. To do this, studies are used to determine how serious it is to contract SARS-CoV-2, post-recovery. Case rates are tracked to estimate the probability of contracting SARS-CoV-2. Per capita death rates are tracked to compare health outcomes and hospital performance of countries with different population sizes. Any per capita comparisons must also be between similar sample sizes (a.k.a. total number of cases in said country).

Russia and China have also been excluded from this study due to geographical distance and questionable accuracy of data.

Observations

As of the writing of this report, Spain is leading in the following metrics in Europe: total number of cases (305 935), cases per capita among countries with comparable total cases (6514) and daily increase of cases (1361). This shows an extremely significant marker of exponential growth as the daily rate of new SARS-CoV-2 cases has now doubled twice since July 8, 2020. Spain also has the second highest deaths per capita within Europe (608) nearly matching the UK (664). Notably both countries have significantly higher deaths per capita than the United States (423) and Germany (109).¹

The aggregate daily increase within Spain (3 and 7 day averages) is also showing early warning signs via other exponential growth markers. When consulting the 3 day average aggregated daily increase within Spain there are clear weekly cycles with less cases being reported Saturday through Monday and peaks Wednesday through Friday. Within the second last cycle (July 1-8) we see that the daily rate falls roughly half of the rise. The final cycle (July 8-14) shows a considerable rise with a flat-line (July 11-14) at approximately 680 cases, constituting a significant spike where we a weekly dip in reporting is expected. Switching to the 7 day average aggregated daily increase within Spain shows similar growth to the first half of March 2020.² Widely accepted models also predict a SARS-CoV-2 second wave in the fall within Spain and globally.⁶ This has held true for countries in the southern hemisphere.⁷

Further, it has been shown that even the most asymptomatic and seemingly benign cases of the virus can inflict permanent damage with a study from the European Heart Journal showing that 55% percent of observed cases within their study showed some form of heart damage.³⁴⁵ A similar statistic

1 <https://www.worldometers.info/coronavirus/#countries>

2 <https://www.worldometers.info/coronavirus/country/spain/>

6 <https://covid19.healthdata.org/spain>

7 <https://www.worldometers.info/coronavirus/country/australia/>

3 <https://www.newsweek.com/scans-reveal-heart-damage-over-half-covid-19-patients-study-1517293>

4 <https://academic.oup.com/ehjci/article/doi/10.1093/ehjci/jeaa178/5859292?searchresult=1>

5 <https://www.newsweek.com/coronavirus-damages-lungs-asymptomatic-patients-too-medical-examiner-says-1514084>

was found by the Spanish Neurology Association, showing that the majority of hospitalized SARS-CoV-2 have developed neurological problems indicating that the virus is attacking the nervous system and brain directly.^a It is also known that, as SARS-CoV-2 came to Europe it mutated into a more infectious strain (D614G)⁸ and that the virus is airborne.⁹

By the government's own admission, their contact tracing program is insufficient with an El Pais article describing the government's current inability to detect SARS-CoV-2 clusters and that the mysteriously low case numbers seen in Madrid are most likely the cause of inadequate staffing with respect to contact tracing. The article goes on to describe how SARS-CoV-2 cases are caught, saying that they are primarily detecting cases in patients that are visiting hospitals for unrelated reasons to SARS-CoV-2 (as it is now procedure to test anyone who is hospitalized).^b

Unknowns

- the origin of SARS-CoV-2 (lab, animal market or other)
- treatment
- full list symptoms

Conclusions

Without medical insurance, proven treatment or vaccine and a full list of symptoms, it is simply impossible to calculate the risk to the worker. However, it is known that SARS-CoV-2 has increased in infectability and is airborne. The case rates within Spain are showing early warning signs of exponential growth and therefore the probability of contracting the virus appears to be high, compared to the rest of Europe. and increasing, with the city of Madrid historically containing the majority of SARS-CoV-2 cases. Studies are showing that the risk **after** contracting the virus is also immense.

a https://english.elpais.com/science_tech/2020-07-17/over-half-of-coronavirus-hospital-patients-in-spain-have-developed-neurological-problems-studies-show.html

8 <https://www.sciencedaily.com/releases/2020/07/200702144054.htm>

9 <https://www.who.int/news-room/commentaries/detail/transmission-of-sars-cov-2-implications-for-infection-prevention-precautions>

b <https://english.elpais.com/society/2020-07-16/the-mystery-of-madrids-lack-of-coronavirus-outbreaks.html>

Lastly, given the death rate within Spain (compared to the UK, USA and Germany) the data shows a high likelihood of an unfavourable health outcome for a worker infected with SARS-CoV-2 and the government, based on their own statements, is not up to the task of contact tracing. Based on this decreased ability in contact tracing it should be assumed that there are unknown clusters within Madrid and that the case numbers are under-reported by an unknown but increasing factor. In summary, given the data available, the nature of the virus and the fundamental questions regarding the nature of SARS-CoV-2 left unanswered the risk to the worker is both extremely high and indefinite.