

COVID-19 statistics in 47 European countries: How do relate the number of conducted tests, the number of cases and the number of deaths?

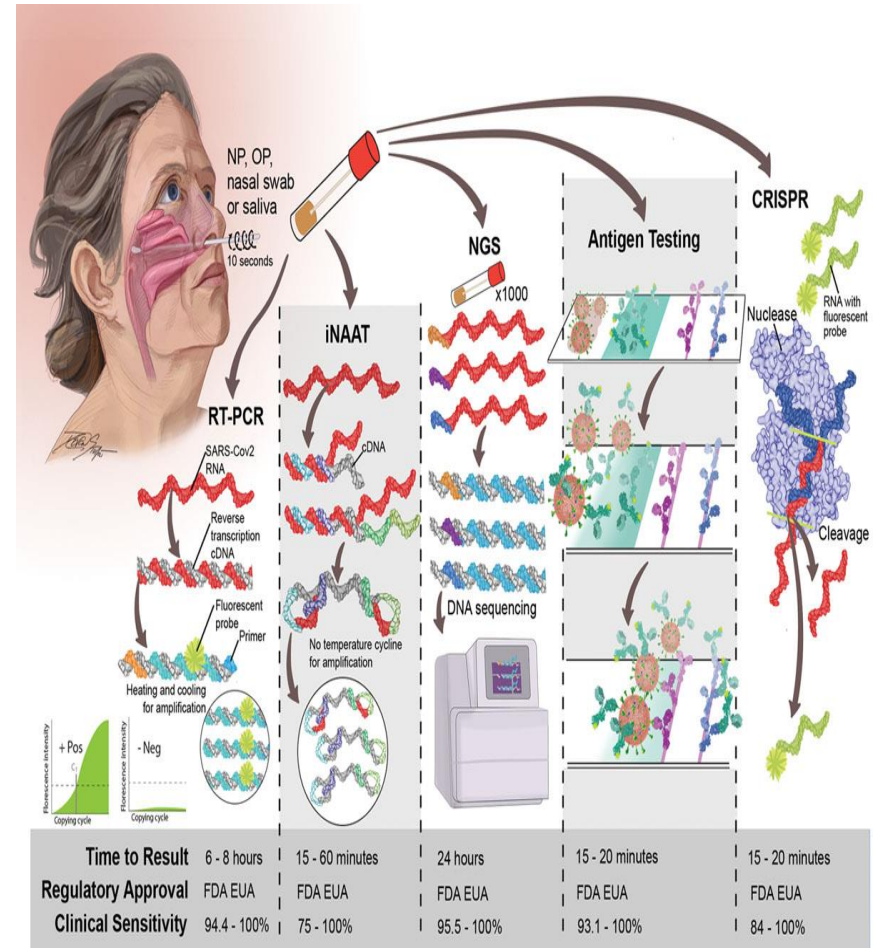
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Introduction

- ▶ Population testing for COVID-19 enables to:
 - take action to prevent further spread of the virus among people
 - initiate a timely and appropriate clinical treatment of all positive persons
 - Monitoring, analysing, planning and decision making, acting



The aim of this study was to examine the association between the cumulative number of tests conducted, cases of illness and death due to COVID-19, in 47 European countries/territories.

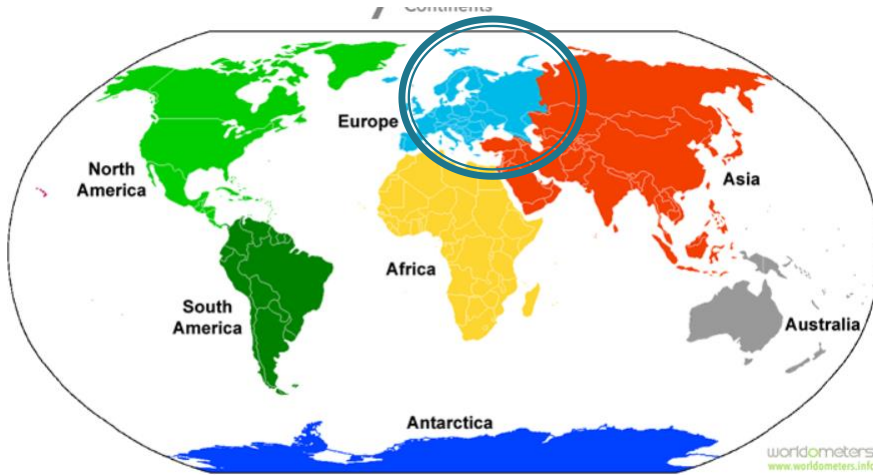
Methods



- Study unit
 - 47 European countries/ territories
- Study period
 - from the beginning of COVID-19 outbreak until 19th of July 2022
- Variables (proxy indicators)
 - country capacities for prevention (cumulative number of COVID-19 tests/1M)
 - morbidity dimension at country level (cumulative number of COVID-19 cases/1M)
 - Mortality dimension at country level (cumulative number of COVID-19 deaths/1MP)

Methods – data source

▶ Worldometer data



| | All | Europe | North America | Asia | South America | Africa | Oceania | |
|----|--|--------|-------------------|------|----------------|--------|---------------|-----------|
| # | Country, Other | ↑↓ | Tot Cases/ 1M pop | ↑↓ | Deaths/ 1M pop | ↑↓ | Tests/ 1M pop | ↑↓ |
| 1 | Bulgaria | | | | 182,292 | | 5,504 | 1,530,061 |
| 2 | Bosnia and Herzegovina | | | | 122,518 | | 4,969 | 570,675 |
| 3 | Hungary | | | | 213,235 | | 4,923 | 1,186,068 |
| 4 | North Macedonia | | | | 163,752 | | 4,560 | 1,017,652 |
| 5 | Montenegro | | | | 440,336 | | 4,422 | 4,143,484 |
| 6 | Croatia | | | | 300,462 | | 4,137 | 1,271,748 |
| 7 | Czechia | | | | 376,623 | | 3,801 | 5,208,270 |
| 8 | Slovakia | | | | 335,871 | | 3,727 | 1,330,808 |
| 9 | Romania | | | | 170,436 | | 3,523 | 1,305,295 |
| 10 | Lithuania | | | | 463,111 | | 3,522 | 3,835,374 |
| 11 | San Marino | | | | 599,601 | | 3,462 | 4,624,597 |
| 12 | Slovenia | | | | 545,512 | | 3,264 | 1,310,697 |
| 13 | Latvia | | | | 490,469 | | 3,234 | 4,102,492 |

Results needed 2 about

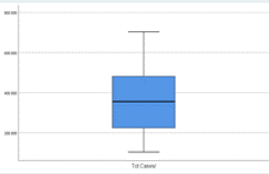
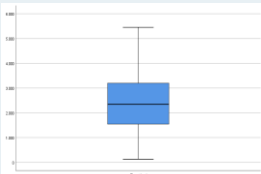
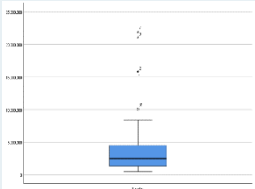
Over the study period, in total, 47 European countries:

- ▶ **203.9 M tests** / 1 MP on COVID-19
- ▶ **16.5M** cases of COVID-19 / 1 MP
- ▶ **114,540** deaths due to COVID-19 / 1 MP

Results



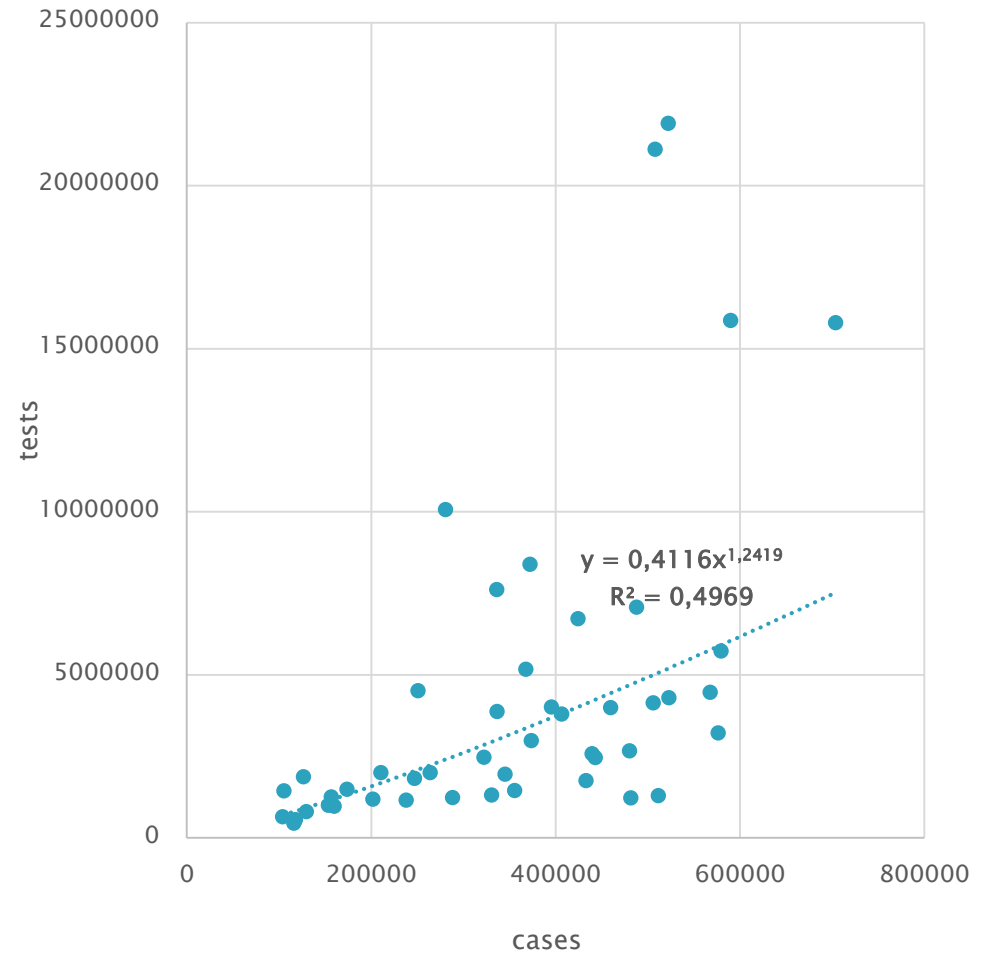
Over the study period, a participant country has recorded *on average*:

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|----|---------|----------|--------------------|----------------|
| Cases  | 47 | 103984 | 703830 | 351,223.3 | 156923.3 |
| Deaths  | 47 | 128 | 5453 | 2,437 | 1262.3 |
| Tests  | 47 | 451908 | 21918199 | 4,337,325.1 | 5007258.9 |
| Valid N (listwise) | 47 | | | | |

As expected,

| Correlations | | | |
|--------------|---------------------|--------|--------|
| | | Cases | Tests |
| Cases | Pearson Correlation | 1 | ,554** |
| | Sig. (2-tailed) | | ,000 |
| | N | 47 | 47 |
| Tests | Pearson Correlation | ,554** | 1 |
| | Sig. (2-tailed) | ,000 | |
| | N | 47 | 47 |

** . Correlation is significant at the 0.01 level (2-tailed).

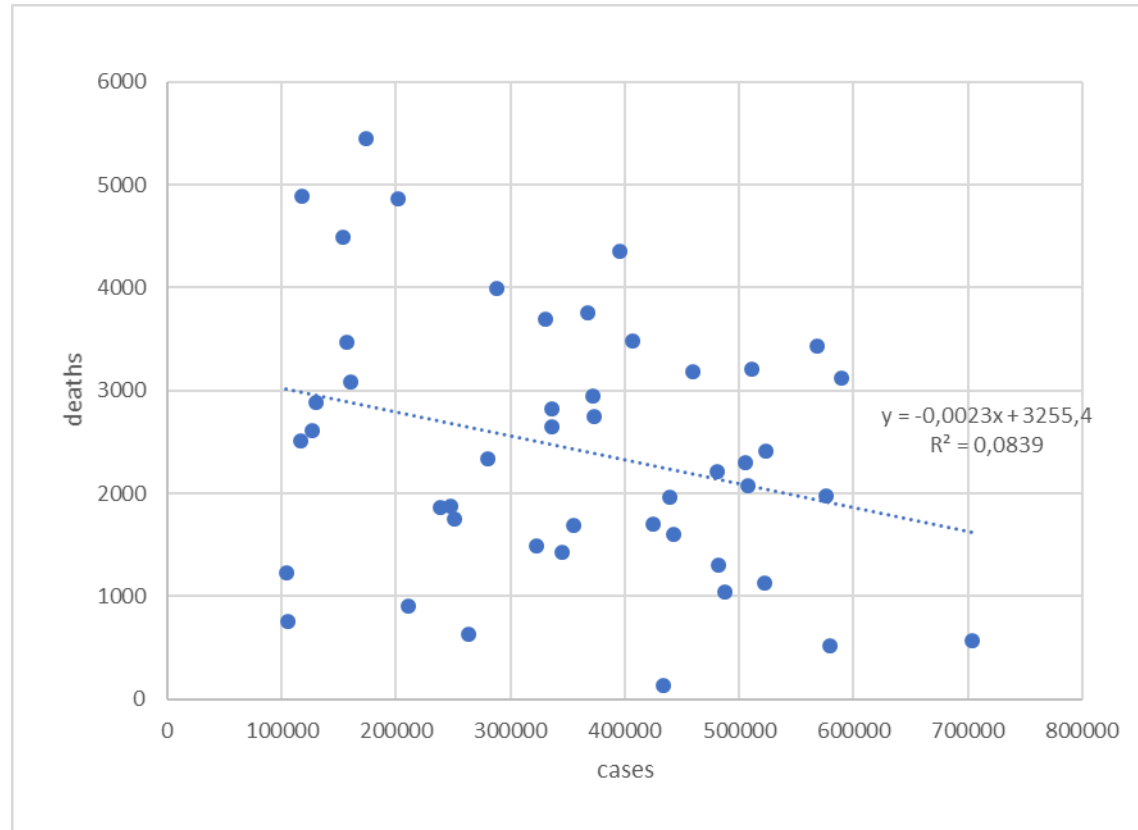


However,

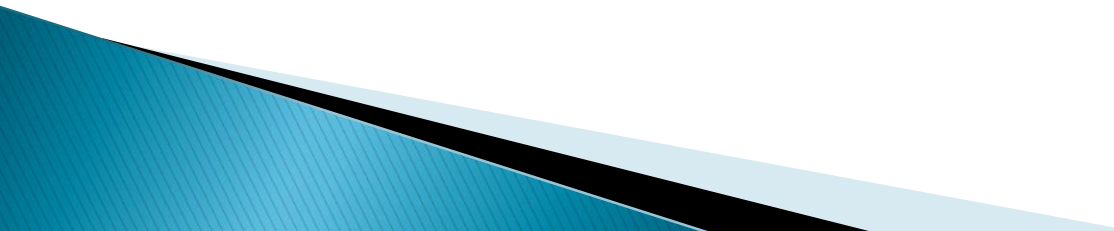


| Correlations | | | |
|--------------|-----------------|--------|--------|
| | | Cases | Deaths |
| Cases | Pearson | 1 | -,290* |
| | Correlation | | |
| | Sig. (2-tailed) | | ,048 |
| | N | 47 | 47 |
| Deaths | Pearson | -,290* | 1 |
| | Correlation | | |
| | Sig. (2-tailed) | ,048 | |
| | N | 47 | 47 |

*. Correlation is significant at the 0.05 level (2-tailed).

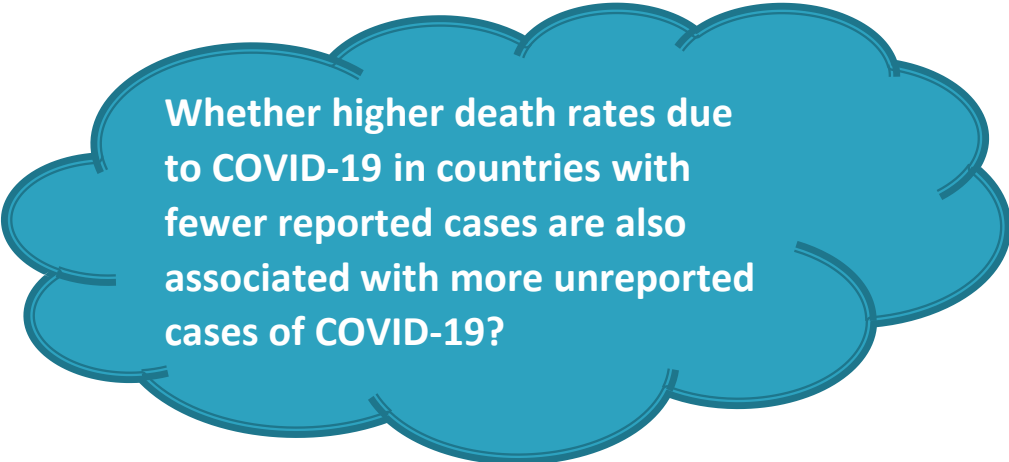


Conclusion

- ▶ There is a positive association between a country's capacity to test cases of COVID-19 and to register cases of COVID-19.
 - ▶ Cumulative calculations show high death toll due to COVID-19 in European countries.
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Key messages

- Cumulative number of testing and cases of COVID-19 are positively correlated.
- More research is needed on the mortality and incidence statistics of COVID-19.



Whether higher death rates due to COVID-19 in countries with fewer reported cases are also associated with more unreported cases of COVID-19?