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Lower COVID-19 incidence in low-continentiality west-coast areas of Europe

Bakgrund/Frågeställning

The incidence of COVID-19 comprises spatial heterogeneity, with manifesting patterns of high or low total incidence. Unravelling factors that explain why certain places have higher versus lower total COVID-19 incidence can help health decision makers understand and plan for future waves of the pandemic. We test whether differences in the total incidence of COVID-19 in counties/municipalities within five European countries (Norway, Sweden, Germany, Italy and Spain), correlate with two environmental factors: the Köppen-Geiger climate zones and the Continentiality Index, while statistically controlling for crowding. Our results show that during the first 16 months of the pandemic (March 2020 to July 2021), climate zones with larger annual differences in temperature and annually distributed precipitation show a higher total incidence than climate zones with smaller differences in temperature and dry seasons. Low continentiality (high oceanic influence) appears to be a strong suppressing factor for COVID-19 spread. The incidence in our study area is lowest at open low continentiality west coast areas. In the Nordic countries, the Norwegian south-west coast is such a low-continentiality low-incidence area. Sweden has no such area. The “worst climatic conditions” for forestalling COVID-19 spread in the countries studied would be the Oslo area and the south-eastern coast stretch of Norway, southern central Sweden and the west-east area bordering to that, including Göteborg and Stockholm, south-eastern Germany including Saxony and Bavaria, northern central Italy including Lombardia, and central Spain, including Madrid. Healthcare decision makers in these area should expect greater COVID-19 spread.

Metod och Resultat

Konklusion