

# Letter to the Editor: Scherb H. Time-Varying Associations Between Daily SARS-Cov-2 Positive Rates, Positive Deaths, and Total Deaths in Germany

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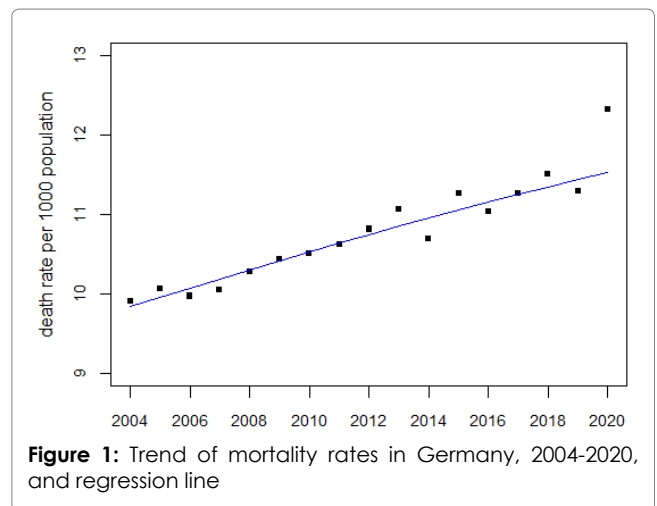
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In his recent article [1], Scherb states that there was no statistically significant increase in overall mortality in Germany in 2020 relative to the mortality predicted from the trend of annual mortalities in 1990-2019. Table 1 in [1] contains weekly numbers of deaths beginning in calendar week 9, 2020, and ending with calendar week 19, 2021. Table 2 in [1] provides annual population counts and death numbers from 1990 through 2019. For 2020, a population count of 83,190,556 was predicted and a preliminary number of 985,996 deaths was given. On the basis of these numbers, 12,667 (-20,886, 45,115) excess deaths were found in 2020 (95% CI: -20,886; 45,115).

In my reanalysis of the data, I determined the population count in 2020 from the trend of the data in 1995-1999 using Poisson regression with a linear-quadratic time trend. It yielded a population of 83,298,665, somewhat more than the population count in table 1 which was based on a third-degree polynomial fit of the data in 1990-2019. Instead of the preliminary number of deaths in 2020, I used the sum of weekly numbers of deaths in table 1 of [1] from week 9, 2020, through week 8, 2021, which was 1,025,220, i.e., greater than the number for 2020 given in table 1.

A Poisson regression of mortality rates in 2004-2000 with a linear-quadratic time trend and a dummy variable for 2020 - which is used to estimate the excess rate in 2020 - yielded a 6.93 (95% CI: 3.52; 10.44) percent increase ( $p=0.0014$ ), see Figure 1. The excess mortality translates to 66,426 (33,732; 100,121) excess deaths in 52 weeks from calendar week 9, 2020, to calendar week 8, 2021.



**Figure 1:** Trend of mortality rates in Germany, 2004-2020, and regression line

In conclusion, my analysis finds a highly significant excess mortality in Germany in 2020 in contrast to Scherb's study which reports no significant increase ( $p=0.45$ ). The discrepancy of our results will soon be resolved when the final data for population count and death numbers will be published by the German Robert-Koch Institute (RKI).

## REFERENCE

1. Scherb H. Time-varying associations between daily SARS-CoV-2 positive rates, positive deaths, and total deaths in Germany. *Epidem Pub Hel Res.* 2021; 1(1):1-12.