

Study details highest-risk groups for dying of COVID-19 in Sweden

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Gunnar Andersson, professor of demography, Stockholm University. Credit: Leila Zoubir/Stockholm University

Being a man, having a lower income, having a lower level of education, not being married, and being born abroad in low- or middle-income

countries—these are factors that, independent of one another, are related to an elevated risk of dying from COVID-19 in Sweden. These are the findings of a new study in the journal *Nature Communications* from Stockholm University.

"We can show that there are independent effects of various separate risk factors that have been brought up in debates and news about COVID-19. All of these factors are accordingly individually associated with a strongly elevated risk of dying from COVID-19," said Sven Drefahl, Associate Professor of Demography at Stockholm University Demography Unit in the Department of Sociology, and main-author of the study.

When it comes to the elevated risk for people from low- and middle-income countries in, for example, the Middle East and North Africa of dying from COVID-19, it does not agree with the general patterns of [mortality](#) for that group. Sven Drefahl explains that those born abroad generally have a lower mortality than people born in Sweden. This also applies when the research took income and level of education into account. The elevated risk of dying from COVID-19 for this group remains after the researchers controlled for circumstances, such as income and level of education. The study also shows that the risk of dying from COVID-19 was much higher in the Stockholm area than outside, both for those born in Sweden and those born abroad, which can be explained by the spread of disease being greater in that area.

The study shows that being a man, having a [lower income](#) and lower level of education also result in a strongly elevated risk of dying from COVID-19. As to these aspects, this also agrees with the patterns for mortality from other diseases.

"Men generally have a higher mortality at comparable ages, which is considered to be due to a combination of biology and lifestyle. The fact

that people with little education or a low income have a higher mortality may largely be due to lifestyle factors including finances –how much one can afford to prioritize one's health. Similarly, we can explain the elevated mortality from COVID-19 for these groups," said Gunnar Andersson.

A number of earlier studies have also shown that single and unmarried people have a higher mortality from various diseases. This is usually to some part explained by selection, meaning that people who have worse health from the beginning are less attractive on the partner market and therefore get married to a lesser degree.

"The explanation is also considered to be in singles having a less protected environment than those who live in a couple relationship. Accordingly, marriage can lead to a healthier life with a lower risk of disease than for the unmarried. This can also explain the elevated risk of dying from COVID-19 for unmarried individuals shown by our study," said Sven Drefahl.

Facts: How the study was done

The study is based on data from the Swedish National Board of Health and Welfare on all registered deaths from COVID-19 in Sweden for adults aged 20 and older, until 7 May 2020. This was combined with register data from Statistics Sweden on city of residence, marital status, country of birth, income, level of education and age. The research is being funded by Forte, the Swedish Research Council for Health, Working Life and Welfare.

Facts: Mortality from COVID-19

- Men had more than twice as high a risk of dying from

COVID-19 than women.

- Unmarried men and women (including those never married, widows/widowers and the divorced) had a 1.5-2 times as high a risk of dying from COVID-19 as those who were married.
- Living in the Stockholm area was linked to a 4.5 times as high risk of dying from COVID-19 (for both men and women) compared with the rest of the country.
- Those born abroad from low- and middle-income countries in the Middle East and North Africa had twice as high a mortality from COVID-19 for women and 3 times as high for men compared with people born in Sweden.
- Those born abroad from low- and [middle-income countries](#) outside the Middle East and North Africa had a more than 1.5 times as high mortality from COVID-19.
- Men with a compulsory-school and upper-secondary education ran an approximately 25 per-cent higher risk of dying from COVID-19 compared with men with post-upper-secondary education.
- Women with a compulsory-school and upper-secondary education ran a 40-50 per-cent higher risk of dying from COVID-19 compared with women with post-upper-secondary [education](#).

More information: Sven Drefahl et al. A population-based cohort study of socio-demographic risk factors for COVID-19 deaths in Sweden, *Nature Communications* (2020). [DOI: 10.1038/s41467-020-18926-3](#)

Provided by Stockholm University

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