

Does COVID hit men harder? Not everywhere, and not all the time, says new study

January 18 2022



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A new study by the Harvard GenderSci Lab in *Social Science and Medicine* has found large variations in the magnitude and direction of sex

differences in COVID-19 outcomes across localities and over time during the pandemic in the U.S.—demonstrating that observed sex disparities cannot be explained without reference to social-contextual factors.

The research, led by senior author Sarah S. Richardson, who directs the GenderSci Lab at Harvard University, is the first to quantify variation in COVID-19 [mortality](#) across states and over time. Results show that 30% of the variation in the sex [disparity](#) in the US can be attributed to differences between states and 10% to differences over time.

According to Richardson, "Sex disparities should not be quickly assumed to be directly caused by sex-related biological factors. A focus on biology can restrict the range of public health engagement and create additional vulnerabilities. Scientists risk misdirecting time, energy, and resources if they are not attentive to gender-related social factors."

The findings by Danielsen, Lee, Rushovich and others demonstrate that the sex disparity in COVID-19 is widely dissimilar across states and has not been stable over the course of the pandemic. For example, in Texas men consistently had higher mortality rates across the pandemic, while in Connecticut women had higher mortality than men for 22 weeks.

The sex disparity also varied dramatically across the waves of the pandemic. For example, the sex disparity in cumulative mortality rates in New York is actually driven by a large sex disparity at the beginning of the pandemic. In a related article currently in preprint, Danielsen and the research team demonstrate that 72.7% of the excess male deaths in the state of New York occurred during the first wave of the pandemic, between March 14 and May 4, 2020. Since that time, the sex disparity in New York has greatly attenuated and is closer to parity.

Danielsen notes, "A single factor approach, focused on sex-linked traits,

cannot explain the variation we observe across time and geography. Our data do not support the view that sex disparity in COVID is large, stable, and consistent over time."

Since the start of the pandemic, scientists have consistently attributed higher COVID-19 mortality among men to factors related to biological sex, assuming that sex disparity patterns are stable across context and over time. In contrast, Danielsen's team concludes that there is "little reason to expect that interventions centering sex-related biological factors will play a primary or sizable role in explaining and ameliorating sex disparities."

Danielsen's team argues that gendered health behaviors, occupational exposures, and pre-existing health conditions, in interaction with differences in state-level responses such as timing and length of mask mandates, business shutdowns, and school closures, likely contribute to state-level and temporal variation in men's and women's vulnerability to severe outcomes for COVID-19.

The study also shows that the cumulative sex disparity in COVID 19 outcomes from April 27, 2020 through May 10, 2021 in the US, with male mortality about 10-20% higher than that of females, is considerably more modest than the 50% higher rates frequently claimed and similar to the persistent male-female mortality gap present before the pandemic.

More information: Study: Ann Caroline Danielsen et al, Sex disparities in COVID-19 outcomes in the United States: Quantifying and contextualizing variation, *Social Science & Medicine* (2022). [DOI: 10.1016/j.socscimed.2022.114716](https://doi.org/10.1016/j.socscimed.2022.114716)

Related article: Ann Caroline Danielsen et al, Sex disparities in COVID-19 mortality vary considerably across time: The case of New York State, (2022). [DOI: 10.1101/2022.01.11.22269104](https://doi.org/10.1101/2022.01.11.22269104)

Provided by Harvard University

Citation: Does COVID hit men harder? Not everywhere, and not all the time, says new study (2022, January 18) retrieved 24 May 2024 from <https://medicalxpress.com/news/2022-01-covid-men-harder.html>

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