Long COVID is most prevalent in the most seriously ill, large-scale study finds

October 27 2023

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A collaborative study involving researchers from Karolinska Institutet has charted the prevalence of severe physical symptom burden among Scandinavians for up to two years after a SARS-CoV-2 infection. Most

affected were people who had a severe COVID-19 infection, while the researchers found no elevated prevalence of long COVID in those who had never been bedridden. The study is published in *The Lancet Regional Health—Europe.*

By mid-October 2023, over 771 million cases of COVID-19 had been reported to the World Health Organization (WHO). An estimated 10%–20% of the affected have persistent symptoms.

Close to 65,000 participants

In the present study, researchers examined the prevalence of persistent physical symptoms in people with different degrees of COVID-19 severity and compared them with people who had not had a confirmed COVID-19 diagnosis. The study included 64,880 adults from Sweden, Denmark, Norway and Iceland with self-reported physical symptoms between April 2020 and August 2022.

Over 22,000 of the participants were diagnosed with COVID-19 during the period, almost 10% of whom were bedridden for at least seven days. The prevalence of chronic symptoms such as shortness of breath, chest pain, dizziness, headaches, and low energy/ fatigue, was 37% higher in those who had had a COVID-19 diagnosis than in those who had not.

Patients who had been bedridden for at least seven days during the SARS-CoV-2 infection had the highest prevalence of severe physical symptom burden, over double that of those not diagnosed with COVID-19. They also had the most persistent symptoms for up to two years after diagnosis.

The symptoms might need longer monitoring

"Long COVID has grown into a major public health problem since a large proportion of the global population has been infected," says Emily Joyce, doctoral student at the Institute of Environmental Medicine, Karolinska Institutet in Sweden and one of the study's first authors. "Our results show the long-term health consequences of the pandemic and highlight the importance of monitoring physical symptoms for up to two years after diagnosis, especially in people who experienced severe COVID-19."

The majority of the participants were fully or partially vaccinated, and the results were largely the same in analyses of exclusively vaccinated individuals.

Participants who had never been bedridden during their infection presented with a similar prevalence to people who had not been diagnosed with COVID-19.

For this study, the researchers combined four cohorts from COVIDMENT, a large-scale collaborative project among Sweden, Denmark, Norway, Iceland, Estonia and Scotland.

Studying the long-term health impact

"We'll continue to assess the long-term health impact of the COVID-19 pandemic in this project," says corresponding author Qing Shen, affiliated researcher at the Institute of Environmental Medicine and the Department of Medical Epidemiology and Biostatistics, Karolinska Institutet. "Multiple projects are underway, including studies of how COVID-19 has affected cognitive function and mental health, and how social isolation affected the elderly."

The study was conducted in close collaboration with the universities of Oslo (Norway), Tartu (Estonia) and Edinburgh (Scotland), the University

of Iceland and Copenhagen University Hospital, Rigshospitalet in Denmark.

More information: COVID-19 illness severity and 2-year prevalence of physical symptoms: an observational study in Iceland, Sweden, Norway and Denmark, *The Lancet Regional Health—Europe* (2023). DOI: 10.1016/j.lanepe.2023.100756

Provided by Karolinska Institutet