

A Systematic Review of Chronic Neurologic Complications of COVID-19; A Potential Risk Factor for Narcolepsy, Parkinson's Disease, and Multiple Sclerosis.

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Abstract : Background: The severity of the COVID-19 pandemic, brought on by the SARS-CoV-2 coronavirus, has been unprecedented since the 1918 influenza pandemic. SARS-CoV-2 cases of CNS and peripheral nervous system disease, including neurodegenerative disorders and chronic immune-mediated diseases, may be anticipated based on knowledge of past coronaviruses, particularly those that caused the severe acute respiratory syndrome and Middle East respiratory syndrome outbreaks. Although respiratory symptoms are the most common clinical presentation, neurological symptoms are becoming increasingly recognized, raising concerns about their potential role in causing Parkinson's disease, Multiple sclerosis, and Narcolepsy. This systematic review aims to summarize the current evidence by exploring the association between COVID-19 infection and how it may overlap with etiological mechanisms resulting in Narcolepsy, Parkinson's disease, and Multiple sclerosis. Methods: A systematic search was conducted using electronic databases ((PubMed/MedLine, Embase, PsycINFO, ScieLO, Web of Science, ProQuest (Biotechnology, Virology, and AIDS), Scopus, and CINAHL)) to identify studies published between January 2020 and December 2022 that investigated the association between COVID-19 and Parkinson's disease, multiple sclerosis, and Narcolepsy. Per the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, the review was performed and reported. Study quality was assessed using the Critical Appraisal Skills Programme Checklist and the Joanna Briggs Institute Critical appraisal tools. Results: A total of 21 studies out of 1025 met the inclusion criteria, including 8 studies reporting Parkinson's disease, 11 on multiple sclerosis, and 2 on Narcolepsy. In COVID-19 individuals compared to the general population, Narcolepsy, Parkinson's disease, and multiple sclerosis were shown to have a higher incidence. The findings imply that COVID-19 may worsen the signs or induce multiple sclerosis and Parkinson's disease and may raise the risk of developing Narcolepsy. Further research is required to confirm these connections because the available data is insufficient. Conclusion: According to the existing data, COVID-19 may raise the risk of Narcolepsy and have a causative relationship with Parkinson's disease, multiple sclerosis, and other diseases. More study is required to confirm these correlations and pinpoint probable mechanisms behind these interactions. Clinicians should be aware of how COVID-19 may affect various neurological illnesses and should treat patients who are affected accordingly.

Keywords : COVID-19, parkinson's disease, multiple sclerosis, narcolepsy, neurological disorders, sars-cov-2, neurodegenerative disorders, chronic immune-mediated diseases

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