COVID and Cognition: Part 2

Frontiers in Aging Neuroscience has just published the second paper on Cognitive and Memory Deficits in Long COVID from *The COVID and Cognition Study (COVCOG)*.

Although COVID-19 has largely been considered a respiratory disease, study results have indicated that between 35% and 85 % of patients reported neurological symptoms including headache, dizziness, myalgia, or loss of taste and smell– most prevalent in patients who become severely ill. Growing evidence associates COVID infections and neural damage, especially when neurological symptoms manifest. Changes observed in multiple studies are thought to be both structural and functional.

In the first paper (Guo et al., 2022), investigators described the characteristics of 181 participants (130 women) who had been infected with COVID-19. The second paper, presented here, discusses the researcher's subset of initial findings from a cross-sectional/longitudinal study that investigates cognition post-COVID-19: *The COVID and Cognition Study*. Here, researchers looked at how different factors associated with COVID-19 infection may impact cognition, and sought answers to three main questions:

1. "What are the associations between reported symptoms and cognitive outcomes?"
2. "Given the heterogeneous nature of Long COVID, is diversity reflected in a diversity of cognitive issues, or is there a specific sub-phenotype of Long COVID that is associated with cognitive deficits?"
3. "Are those that report "subjective" cognition and memory

> complaints more likely to demonstrate impairments in "objective" cognitive assessments of the same functions?"

The study recruited 421 participants aged 18+ who completed a baseline questionnaire indicating demographics, previous health condition/status, as well as their experience of COVID infection. Participants were then evaluated with a series of cognitive tasks/tests.

Significant differences in Memory were observed between the No COVID group and Ongoing (Mild/Moderate COVID) subgroups, as well as between the No COVID and Ongoing (Severe COVID) subgroups. Those with ongoing symptoms were less accurate and slower in a test of verbal memory, but no significant group effects were sustained in any other cognitive area.

Authors of this paper suggest that increased findings of neural and cognitive dysfunction in Long COVID patient groups are a concern for the long term impacts on individual's cognitive health and warrant further investigation. Loss of gray matter within the temporal lobe caused by COVID-19 infection combined with evidence of reduced memory performance presented in this study, supports the idea that people that have been infected by COVID-19 may be at higher risk for future neurodegeneration as well as dementia.

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Read first paper on the *The COVID and Cognition Study* here

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