

Neurocognitive Performance in Post-Acute Sequelae of COVID-19 (PASC)

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Introduction:

- It is now well-documented that SARS-CoV-2 can directly (neuroinvasive) and indirectly (neurovirulent) affect the CNS
- Severe course of COVID-19, delirium during acute illness, pre-existing neurodegenerative disease and psychiatric co-morbidities result in poorer neurocognitive outcomes
- However, patients with even mild course of COVID-19 are reporting persistent cognitive change post-infection
- Few studies have examined neurocognitive performance in patients >12-weeks post infection in an outpatient clinical setting with sensitive neuropsychological measures

Objective:

- Describe cognitive function in patients seeking treatment for Post-Acute Sequelae of COVID-19 (PASC)

Methods:

- 92 patients presented for evaluation of “brain fog” following COVID-19 infection
- Patients were referred from the UAB Post-COVID Treatment Program
- Comprehensive neuropsychological assessments were administered

Results:

Table 1. Descriptive Statistics of the Sample

Demographic Category	Description
Age	49.42 (18-74)
Gender	Female (77%)
Race	Caucasian (73%) Black (25%)
Education	15.49

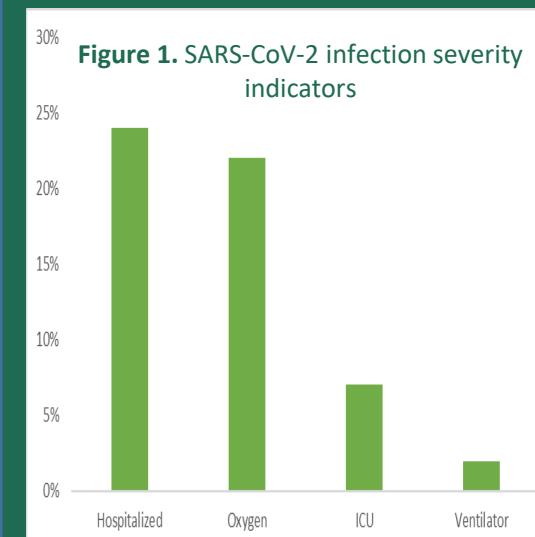


Table 2: Average Assessment Scores by Cognitive Domain

Assessment	Standard Score M(SD)	Classification
Global Cognitive Function		
MoCA (Raw Score)	24.78(3.46)	Impaired
Attention & Concentration		
WAIS-IV Digit Span	96.75(12.54)	Average
Processing Speed		
Oral SDMT	72.80(20.37)	Below Average
Oral TMT Part A	88.31(37.76)	Low Average
D-KEFS Color Naming	92.16(18.11)	Average
D-KEFS Word Reading	92.86(17.44)	Average
COWAT FAS	92.03(14.19)	Average
Executive Function		
Oral TMT Part B	92.71(28.48)	Average
D-KEFS Inhibition	90.26(20.66)	Average
D-KEFS Inhibition/Switching	92.95(18.81)	Average
Language		
Animals	95.05(15.78)	Average
Visuospatial Construction		
RBANS Figure Copy	104.04(16.08)	Average
Memory		
CVLT-3 Total Word Recall (Raw Score)	25.28(4.77)	
CVLT-3 Long Delay Free Recall	94.17(19.11)	Average
Effort & Validity		
WAIS-IV Reliable Digit Span (Raw Score)	8.99	95% Valid
CVLT-3 Forced Choice (Raw Score)	8.87	93% Valid

Conclusion:

- Literature on neuropsychological outcomes of COVID-19 is scarce and poorly described (heterogeneity of patients, methods, time frame, screening measures versus full battery of tests)
- Findings from this study suggest that patients with “brain fog” following COVID-19 infection experience difficulties in specific domains of cognitive functioning
- “Brain fog” secondary to PASC can result in reported persistent health and neuropsychiatric issues that can impact ability to work and QOL
- Further investigation of neuropsychological profiles associated with PASC is warranted to inform diagnosis, neurocognitive trajectory, and treatment planning

Acknowledgments

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Check out our other posters and supplemental information regarding our UAB NeuroCOVID Database here:

