

# The Relationship Between Mood, Cognition, and Functional Impairment in Recovered COVID-19 Patients

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## INTRODUCTION

- Research suggests that COVID-19 is associated with neurological and psychological sequelae.
- Evidence from recent studies indicates that decline in memory, language, and executive functioning, as well as symptoms of depression and anxiety are common in recovered COVID-19 patients.

## OBJECTIVE

- The aim of this study was to explore the relationship between acute COVID-19 symptom load (CSL) and cognitive, psychological, and functional outcomes after recovery.

## METHOD

- Sample included 65 adults over the age of 18, who were treated at Staten Island University Hospital for COVID-19.
- 61.8% females (n = 40), 38.2% males (n = 25).
- A brief phone battery was administered 2-6 months after discharge.
- Screening measures assessed for anxiety (Generalized Anxiety Disorder 2 item; GAD-2), depression (Patient Health Questionnaire; PHQ-2), traumatic stress symptoms (Primary Care PTSD Screen for DSM-5; PC-PTSD-5), and functional impairment (World Health Organization Disability Assessment Survey; WHODAS 2.0).
- CSL was assessed by “yes/no” endorsement of 11 common symptoms experienced during acute COVID-19 illness.
- Current cognitive symptoms were assessed by “yes/no” endorsement of memory, concentration, and word finding problems.

## DATA ANALYSIS

- Pearson’s correlation was utilized to investigate associations between variables.

## RESULTS

- There was no significant correlation between the CSL and total WHODAS score.
- CSL was weakly correlated with the Self-care ( $r=0.27$ ,  $p=0.03$ ) and Life Activities ( $r=0.24$ ,  $p=0.05$ ) domains of the WHODAS.
- There was a moderate significant correlation between current cognitive symptom load and many WHODAS domains.
- The WHODAS domain of Understanding and Communication had the strongest association with current cognitive symptom load ( $r=0.36$ ,  $p<0.001$ ).
- There was a significant correlation between psychological symptoms and WHODAS impairment ( $r=0.40$ ,  $p<0.001$ ).
- Depressive symptoms had the strongest association with WHODAS impairment ( $r=0.43$ ,  $p<0.000$ ).

WHODAS DOMAIN	COVID-19 SYMPTOM LOAD	CURRENT COGNITIVE SYMPTOMS	CURRENT PSYCHOLOGICAL SYMPTOMS
UNDERSTANDING & COMMUNICATION	$r = 0.03$ , $p = 0.81$	$r = 0.36$ , $p < 0.001$	$r = 0.35$ , $p < 0.001$
GETTING AROUND ALONE	$r = 0.16$ , $p = 0.20$	$r = 0.34$ , $p = 0.005$	$r = 0.39$ , $p < 0.001$
SELF-CARE	$r = 0.27$ , $p = 0.03$	$r = 0.32$ , $p < 0.001$	$r = 0.31$ , $p = 0.02$
GETTING ALONG WITH OTHERS	$r = 0.03$ , $p = 0.82$	$r = 0.27$ , $p = 0.029$	$r = 0.40$ , $p < 0.001$
LIFE ACTIVITIES	$r = 0.24$ , $p = 0.05$	$r = 0.32$ , $p < 0.001$	$r = 0.39$ , $p < 0.001$
PARTICIPATION IN SOCIETY	$r = 0.14$ , $p = 0.26$	$r = 0.26$ , $p = 0.038$	$r = 0.30$ , $p = 0.02$

## CONCLUSIONS

- CSL may be a poor proxy for the functional impact of COVID-19.
- Psychological factors, particularly dysphoric symptoms, appear to be more associated with functional impairment than cognitive symptoms.
- Results of this study highlight the importance of targeting interventions for current cognitive and psychological symptoms in recovered COVID-19 patients, regardless of CSL.
- Limitations of our study include small sample size and the use of self-report measures.
- Future studies should investigate the relationship between cognitive and psychological symptoms in a larger sample of recovered COVID-19 patients, perhaps by incorporating objective measures of cognitions.

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## REFERENCES

Please contact us at [ykeren@northwell.edu](mailto:ykeren@northwell.edu) with further questions or for a copy of our full reference list.

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