CLINICAL MANIFESTATIONS

POSTER PRESENTATION

Alzheimer's & Dementia®
THE JOURNAL OF THE ALZHEIMER'S ASSOCIATION

# Investigating the prevalence of cognitive impairment in mild and moderate COVID-19 patients two months post-discharge: Associations with physical fitness and respiratory function

**George D. Vavougios** | Vasileios Stavrou | Eirini Papayianni | Evangelos C Fradelos | Kyriaki Astara | Konstantinos Tourlakopoulos | Stylianos Boutlas | Konstantinos Gourgoulianis

University of Thessaly, Larisa, Greece

**Correspondence**
George D. Vavougios, University of Thessaly, Larisa, Greece
Email: dantevavougios@hotmail.com

## Abstract

**Background:** The aim of our study was to investigate the prevalence and associations of cognitive impairment in previously COVID-19 patients 2 months after discharge.

**Method:** Our study included previously hospitalized, consecutive COVID-19 patients with mild to moderate disease, followed up 2 months post discharge at a tertiary hospital's outpatient clinic during May 2021. Exclusion criteria included intensive care unit admission, intubation, or a history of neurodegenerative disease and stroke prior to COVID-19. Prior to inclusion, eligible patients had provided written informed consent. The full battery of measurements in our study included demographics, medical and family history, anthropometrics, the 6-minute walk test (6MWT), the Borg Dyspnea Scale, spirometry, the Pittsburgh Sleep Quality Index (PSQI), the Epworth Sleepiness Scale (ESS), the Short Form 36 health Survey (SF-36), the Montreal Cognitive Assessment (MoCA) and the Symptom Checklist 90-R (SLC90-R), reactive oxygen metabolites (dROMs) and plasma antioxidant capacity (PAT test; FRAS5, Parma, Italy). Cognitive impairment was considered on a MoCA cutoff $\leq 24$. Data are presented as mean $\pm$SD or Frequencies (%). Correlations between continuous data were assessed via the Spearman's Rho correlation coefficient, whereas associations were assessed via multiple linear regression (MLR) models. For all tests, a p-value <0.05 was considered statistically significant.

**Results:** A total of 32 subjects were included in the study (35 Male, 17 Female; Mean age of 61.6$\pm$9.4). A total of 56.2% presented with cognitive decline (CD) as indicated by a MoCA score <24. Principal component analysis revealed that short-term memory impairments and multidomain impairment without short-term memory deficits were the predominant patterns of cognitive impairment. MoCA score correlated with age ($\rho$=-0.513, p=0.003), waist circumference ($\rho$=-0.388, p=0.028) waist to hip ratio ($\rho$=-0.361, p=0.042) and $SpO_2$ during 6MWT (1st, 4th and 6th minute; p<0.05). MLR indicated that after adjusting for age and gender, $SpO_2$ at the 6th minute of the 6MWT was independently associated with MoCA score (Beta=0.579, p-value=0.001).

**Conclusion:** Our findings indicated that among 32 outpatient clinic subjects, 56.2% presented with cognitive decline. The associations with oxygen saturation and physical condition as detected by the 6MWT may indicate overlap with post-COVID-19 fatigue and warrants further investigation.