



Prior COVID-19 Infection and Delayed Recall in Older Adults: A Pilot Study Relevant to AD/ADRD



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Introduction

- Cognitive effects of COVID-19 in older adults remain incompletely characterized, particularly in diverse populations.
- Because episodic memory is central to Alzheimer's disease and related dementias (AD/ADRD), we examined whether prior COVID-19 infection was associated with poorer delayed recall in older adults than in matched pre-pandemic controls.

Methods

- Participants were 100 adults aged 55 years and older with documented prior COVID-19 who were evaluated at the Icahn School of Medicine at Mount Sinai.
- Recruitment sources included the Mount Sinai Data Warehouse MyChart, the Mount Sinai COVID-19 Biobank, and referrals/flyers.
- Participants were compared with 400 demographically matched pre-pandemic controls from the National Alzheimer's Coordinating Center (NACC) using propensity-score matching on age, sex, race/ethnicity, and education (4:1).
- The primary outcome was a harmonized quintile-based verbal delayed recall measure derived from Craft Story delayed recall in NACC and Consortium to Establish a Registry for Alzheimer's Disease (CERAD) word-list delayed recall in the COVID-19 cohort.
- Montreal Cognitive Assessment (MoCA) served as a secondary screening measure. Prorating, scaling, and quintile-based approaches were examined as harmonization methods.
- Multivariable linear regression examined associations with delayed recall after partial demographic adjustment and full adjustment, including depressive symptoms measured by the Geriatric Depression Scale (GDS).

This project was supported by the Alzheimer's Association (ALZ-NAN-22-928181) and the Alzheimer's Disease Research Center at Mount Sinai. Data were obtained from the National Alzheimer's Coordinating Center (NACC) database, funded by NIA/NIH Grant U24 AG072122. NACC data are contributed by the NIA-funded Alzheimer's Disease Research Centers (ADRCs).

Table 1: Participant Characteristics

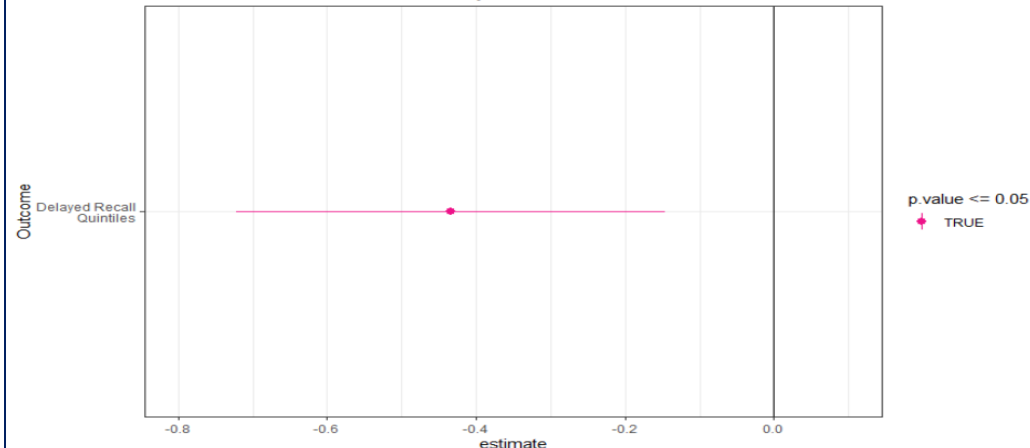
	Control N = 400 ¹	Covid N = 100 ¹	Difference ²	95% CI ²	p-value ²
Race			0.10	-0.12, 0.32	
Black/African American	88 (22%)	26 (26%)			
Hispanic	44 (11%)	10 (10%)			
Other	30 (7.5%)	8 (8.0%)			
White	238 (60%)	56 (56%)			
Age	70.23 (9.67)	69.87 (8.82)	0.36	-1.6, 2.3	0.7
Sex			0.07	-0.15, 0.29	
Male	194 (49%)	45 (45%)			
Female	206 (52%)	55 (55%)			
Education	16.26 (2.71)	16.08 (2.67)	0.18	-0.41, 0.77	0.6
GDS	1.91 (2.39)	3.21 (3.18)	-1.3	-2.0, -0.63	<0.001

¹n (%); Mean (SD)

²Standardized mean difference for race and sex; raw mean difference for age, education, and GDS. p-values for age, education, and GDS are from the Welch two-sample t-test.

Abbreviation: CI = Confidence Interval

Fully Adjusted Multivariable Linear Regression Models between 'Had COVID-19' and Delayed Recall



Note: Coefficient estimates and 95% CI for 'Had COVID-19' from multivariable linear regression models adjusted for age, sex, education, race and GDS

Results

- COVID-19 and control groups were balanced on matching variables; depressive symptoms were higher in the COVID-19 group (GDS: 3.21 [3.18] vs 1.91 [2.39], $p < 0.001$).
- Prior COVID-19 infection was associated with worse delayed recall and remained significant after full adjustment (estimate = -0.37, 95% CI = (-0.65, -0.08), SE = 0.15, $p = 0.012$).
- MoCA findings were inconsistent across harmonization methods and were not interpreted.

Conclusions

- In this pilot sample, prior COVID-19 infection was associated with poorer delayed recall in older adults independent of demographic characteristics and depressive symptoms.
- Although baseline cognition, vascular risk factors, and ApoE4 status were unavailable, findings support further study of post-COVID memory changes and possible AD/ADRD vulnerability in diverse aging populations.