Objective: Approximately half of people living with HIV (PWH) experience HIV-associated neurocognitive disorders (HAND), yet HAND often goes undiagnosed. There is an ongoing need to find efficient, cost-effective ways to screen for HAND and monitor its progression in order to intervene earlier in its course and more effectively treat it. Prior studies that analyzed brief HAND screening tools have demonstrated that certain cognitive test pairs are sensitive to HAND cross-sectionally and outperform other screening tools such as the HIV Dementia Scale (HDS). However, few studies have examined optimal tests for longitudinal screening. This study aims to identify the best cognitive test pairs for detecting cognitive decline longitudinally.
Participants and Methods: Participants were HIV+ adults (N=132; ages 25-68; 59% men; 92% Black) from the Temple/Drexel Comprehensive NeuroHIV Center cohort. Participants were currently well treated (98% on cART, 92% with undetectable viral load, and mean current CD4 count=686). They completed comprehensive neurocognitive assessments longitudinally (328 total visits, average follow-up time=4.9 years). Eighteen participants (14% of the cohort) demonstrated significant cognitive decline, defined as a decline in global cognitive z-score of 0.5 (SD) or more. In receiver operating characteristic (ROC) analyses, tests with an area under the curve (AUC) of greater than .7 were included in subsequent test pair analyses. Further ROC analyses examined the sensitivity and specificity of each test pair in detecting significant cognitive decline. Results were compared with the predictive ability of the Modified HIV Dementia Scale (MHDS).
Results: The following test pairs demonstrated the best balance between sensitivity and specificity in detecting global cognitive decline: Grooved Pegboard dominant hand (GPD) and category fluency (sensitivity=.89, specificity=.60, AUC=.75, p<.001), GPD and Coding (sensitivity=.76, specificity=.70, AUC=.73, p<.001), letter fluency and Trail Making Test (TMT) B (sensitivity=.82, specificity=.63, AUC=.73, p<.001), and GPD and TMT B (sensitivity=.81, specificity=.64, AUC=.73, p<.001). Change in MHDS predicted significant decline no better than chance (sensitivity=.61, specificity=.47, AUC=.53, p=.65).
Conclusions: Several cognitive test pairs, particularly those that include GPD, are sensitive to HIV-associated cognitive change, and far more sensitive and specific than the MHDS. Cognitive test pairs can serve as valid, rapid, cost-effective screening tools for detecting cognitive change in PWH, thereby better enabling early detection and intervention. Future research should validate the present findings in other cohorts and examine the implementation of test pair screenings in HIV care settings. Most of the optimal tests identified are consistent with the well-established impact of HAND on frontal-subcortical motor and executive networks. The utility of category fluency is somewhat unexpected as it places more demands on temporal semantic networks; future research should explore the factors driving this finding, such as the potential interaction of HIV with aging and neurodegenerative disease.

Categories: Infectious Disease (HIV/COVID/Hepatitis/Viruses)
Keyword 1: cognitive screening
Keyword 2: HIV/AIDS
Keyword 3: neuropsychological assessment
Correspondence: Sajda Adam, Drexel University, sa3754@drexel.edu

66 An Exploratory Analysis of the Moderating Effect of Internalizing Symptoms on Memory Performance Following COVID-19 Infection.

Samantha J Feldman[1], Katie C Benitah[1], Theone SE Paterson[2], Kristina M Gicas[1]
[1]York University, Toronto, Ontario, Canada. [2]University of Victoria, Victoria, British Columbia, Canada

Objective: Cognitive difficulties are amongst the most frequently reported sequelae following COVID-19 infection, even in those experiencing mild to moderate illness (Matos et al., 2021). Recent research has identified patterns of diminished cognitive performance on tests of memory and executive functioning in COVID-19 cases; however, the etiology of neurocognitive difficulties remains unclear (Delgado-Alonso et al., 2022). Emerging evidence has identified moderate associations between decreased performance on neuropsychological tests of memory and elevated anxiety and depression symptom reporting in COVID-19 patients. Similar associations are well-established in the literature in persons with anxiety and depression disorders, warranting further investigation as to

https://doi.org/10.1017/S1355617723001480 Published online by Cambridge University Press

whether mental health variables such as internalizing symptom severity may moderate the association between COVID-19 illness and cognitive difficulties. This study examined how internalizing symptoms as indexed by depression and anxiety symptom scales may differentially influence performance on neuropsychological tests of memory between persons who have and have not had COVID-19.
Participants and Methods: In this cross-sectional study, 104 adults aged 19-80, were recruited in Ontario and British Columbia, Canada; 84 adults met inclusion criteria and participated in neuropsychological testing. There were 40 participants who tested positive for COVID-19 infection (N=44 with no suspected exposures or confirmed diagnosis of COVID-19). Participants had no history of dementia, mild cognitive impairment, or other known neurological disorder. Anxiety and depression symptoms were measured using the Generalized Anxiety Disorder-7 (GAD-7) and Center for Epidemiologic Studies Depression Scale (CES-D) via self-report on Qualtrics. Memory encoding and delayed recognition performance were assessed using the Hopkins Verbal Learning Test Revised (HVLT-R) and the Neuropsychological Assessment Battery Shape Learning subtest (NAB-SL). To test for potential moderating effects of anxiety and depression symptoms on the association between COVID-19 infection status and memory performance, a series of multiple linear regressions were conducted. Age and sex were included as covariates in all analyses.
Results: Moderation analyses revealed that the interaction between COVID-19 infection and anxiety symptoms accounted for a significant portion of variance in both HVLT-R recognition (B= -0.78, SE= 0.34, $p<0.05$) and NAB-SL delayed recognition scores (B= -0.83, SE= 0.35, $p<0.05$). Simple slopes analyses revealed that among participants who tested positive for COVID-19 infection, higher GAD-7 scores were associated with lower verbal and visual recognition scores. A similar interaction was observed between COVID-19 and depressive symptoms in accounting for variance in NAB-SL delayed recognition scores, however, for that model the threshold of $p=0.05$ was not met in our small sample ($p=0.07$).
Conclusions: Findings demonstrate that anxiety symptom severity had a moderating effect on the impact of COVID-19 on delayed retrieval of verbal and visual information from memory. Future work in a larger sample is needed to further elucidate the potential moderating role of depression on memory in COVID-19 positive persons, as the current work suggests that depression symptoms could have a similar impact as anxiety. Further identifying the relationships between key modifiable psychological factors such as anxiety and memory following COVID-19 infection will provide insight into potential interventions to minimize the negative effects of internalizing symptoms on long-term cognitive outcomes.

Categories: Infectious Disease (HIV/COVID/Hepatitis/Viruses)
Keyword 1: memory complaints
Keyword 2: mood disorders
Keyword 3: infectious disease
Correspondence: Samantha J Feldman, York University, samantha.feldman@gmail.com

67 COVID-19 Mobile Brain Health

Stephanie Li[1], Phillip Hwang[1], Ashita Gurnani[2,1]
[1]Boston University, Boston, MA, USA.
[2]Framingham Heart Study, Framingham, MA, USA

Objective: Over 80% of hospitalized COVID-19 patients have neurological symptoms, including memory loss, attention difficulties, and trouble thinking clearly that can last for months. The long-term neurological impact of the SARS-CoV-2 virus is unknown and it remains to be seen whether it would create a surge in cases of dementia and cognitive decline years later, which is already a global public health challenge. Examining the cognitive effects of the virus will help with understanding its impact on the brain and inform treatment options. The goal of the present study was to examine cognitive performance among those who have had COVID-19 via mobile-based assessments using smartphone-based cognitive tests. Participants with a previous COVID-19 diagnosis (COVID+) were expected to have worse cognitive performance at baseline than those without COVID-19 (COVID-).
Participants and Methods: Participants (n=23) with self-reported positive or negative COVID-19 statuses based on polymerase chain reaction or antigen testing were recruited from the Boston area. Inclusion criteria included access to a smartphone with an Android or iOS operation

https://doi.org/10.1017/S1355617723001480 Published online by Cambridge University Press