

relationship between SART self-monitoring and real-world error-monitoring, and changes in everyday functions as rated by their informants. **Results:** As self-monitoring scores on the SART increased, so too did real-world error awareness scores, $r(133) = .18$, $p = .04$. Higher self-monitoring scores on the SART were also significantly positively associated with functional performance abilities on the Ecog total ($r(96) = -.24$, $p = .02$). Further, higher self-monitoring on the SART was related to better functional performance within the Ecog domains of everyday memory ($r(96) = -.23$, $p = .02$), everyday language ($r(96) = -.24$, $p = .02$), everyday spatial abilities ($r(96) = -.23$, $p = .02$), and everyday planning ($r(96) = -.21$, $p = .04$). SART self-monitoring was not significantly related to everyday organization or divided attention domains.

Conclusions: The findings revealed that better error-monitoring performance on a laboratory-based task was related to better error-monitoring when completing real-world activities, and less overall impairment in everyday function as reported by informants. Results support the ecological validity of the SART error-monitoring score and suggest that error-monitoring performance on the modified SART may have important clinical implications in predicting real-world error-monitoring and everyday function. Future research should consider how SART error-monitoring may predict everyday functioning, over and above other clinical measures.

Categories: Aging

Keyword 1: self-monitoring

Keyword 2: ecological validity

Keyword 3: everyday functioning

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55 Remote Cognitive Screening in Primary Care via a Mobile App: A Formative Usability Evaluation of MyCog Mobile

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Objective: In the context of primary care, cognitive screenings are brief, non-diagnostic

tests that clinicians can administer in order to provide appropriate referrals to neuropsychologists. Annual cognitive screening for adults over age 65 ("older adults") can help monitor cognitive functioning over time and ensure more patients with cognitive impairments receive neuropsychological assessment and care earlier. Unfortunately, time constraints and lack of training present major barriers to cognitive screening in primary care, and less than half of cognitive impairment cases are identified in these settings. A remote cognitive screening mobile app has the potential to save primary care clinics time, particularly for the majority of older adults who are cognitively healthy. Moreover, a screening app well-validated for remote clinical use can replace the inadequate or nonexistent screening practices currently employed by many primary care clinics. In order to achieve their potential, remote smartphone-enabled cognitive screening paradigms must be acceptable and feasible for both patients and clinical end users. With this goal in mind, we describe the collaborative, human-centered design process and proposed implementation of MyCog Mobile (MCM), a self-administered cognitive screening app based on well-validated NIH Toolbox measures.

Participants and Methods: We conducted foundational interviews with primary care clinicians (N=5) and clinic administrators (N=3) and created user journey maps of their existing and proposed cognitive screening workflows. We then conducted individual semi-structured interviews with healthy older adults (N=5) as well as participated in a community stakeholder panel of older adults and caregivers (N=11). Based on the data collected, we developed high-fidelity prototypes of the MCM app which we iteratively tested and refined with the older adult interview participants. Older adults rated the usability of the prototypes on the Simplified System Usability Scale (S-SUS) and After Scenario Questionnaire (ASQ).

Results: Clinicians and administrators were eager to use a well-validated remote screening app if it saved them time in their workflows and were fully integrated into their EHR. Clinicians prioritized easily interpretable score reports tied to automated best practice guidelines. Findings from interviews and user journey mapping further informed the details of the proposed implementation and core functionality of MCM. Older adult participants were motivated to complete a remote cognitive screener to ensure they were cognitively healthy, save time during

their in-person visit, and for privacy and comfort reasons. Older adults also identified several challenges to remote smartphone screening which informed the user experience design of the MCM app. The average rating across prototype versions was 91 (SD 5.18) on the S-SUS and 6.13 (SD 8.40), indicating above average usability.

Conclusions: Through our iterative, human-centered design process, we were able to develop a viable remote cognitive screening app and proposed implementation for primary care settings optimized for multiple stakeholders. Next steps include validating MCM in clinical and healthy populations, collaboratively developing best practice alerts for primary care EHRs with neuropsychologists, and piloting the finalized app in a community clinic. We hope the finalized MCM app will promote broader screening practices within primary care and improve early assessment and diagnosis of cognitive impairment for older adults.

Categories: Aging

Keyword 1: cognitive screening

Keyword 2: technology

Keyword 3: aging disorders

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56 TBI Severity Moderates the Association between Subjective and Objective Attention in Older Veterans

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Objective: Prior work on associations between self-reported cognition and objective cognitive performance in Veterans has yielded mixed findings, with some evidence indicating that mild

traumatic brain injury (TBI) may not impact the associations between subjective and objective cognition. However, few studies have examined these relationships in both mild and moderate-to-severe TBI, in older Veterans, and within specific cognitive domains. Therefore, we assessed the moderating effect of TBI severity on subjective and objective cognition across multiple cognitive domains.

Participants and Methods: This study included 246 predominately male Vietnam-Era Veterans (age $M=69.61$, $SD=4.18$, $Range = 60.87 - 85.16$) who completed neuropsychological testing and symptom questionnaires as part of the Department of Defense-Alzheimer's Disease Neuroimaging Initiative (DoD-ADNI). Participants were classified as having history of no TBI ($n=81$), mild TBI ($n=80$), or moderate-to-severe TBI ($n=85$). Neuropsychological composite scores in the domains of memory, attention/executive functioning, and language were included as the outcome variables. The Everyday Cognition (ECog) measure was used to capture subjective cognition and, specifically, the ECog domain scores of memory, divided attention, and language were chosen as independent variables to mirror the objective cognitive domains. General linear models, adjusting for age, education, apolipoprotein E $\epsilon 4$ carrier status, pulse pressure, depressive symptom severity, and PTSD symptom severity, tested whether TBI severity moderated the associations of domain-specific subjective and objective cognition.

Results: Across the sample, subjective memory was associated with objective memory ($\beta=-.205$, 95% CI $[-.332, -.078]$, $p=.002$) and subjective language was associated with objective language ($\beta=-.267$, 95% CI $[-.399, -.134]$, $p<.001$). However, the main effect of subjective divided attention was not associated with objective attention/executive functioning ($p=.124$). The main effect of TBI severity was not associated with any of the objective cognitive domain scores after adjusting for the other variables in the model. The TBI severity x subjective cognition interaction was significant for attention/executive functioning [$F(2,234)=5.18$, $p=.006$]. Specifically, relative to Veterans without a TBI, participants with mild TBI ($\beta=-.311$, 95% CI $[-.620, -.002]$, $p=.048$) and moderate-to-severe TBI ($\beta=-.499$, 95% CI $[-.806, -.193]$, $p=.002$) showed stronger negative associations between subjective divided attention and objective attention/executive functioning. TBI severity did not moderate the