

telemedicine, however. Additionally, changes in lifestyle and daily demands during the COVID-19 pandemic may have created unique circumstances that benefited sleep quality for some individuals but also increased symptoms of anxiety/uncertainty.

Categories: Teleneuropsychology/ Technology

Keyword 1: teleneuropsychology

Keyword 2: traumatic brain injury

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84 Feasibility and Validity of Remote Digital Assessment of Multi-Day Learning in Cognitively Unimpaired Older Adults

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Objective: Unsupervised remote digital cognitive assessment makes frequent testing feasible and allows for measurement of learning across days on participants' own devices. More rapid detection of diminished learning may provide a potentially valuable metric that is sensitive to cognitive change over short intervals. In this study we examine feasibility and predictive validity of a novel digital assessment that measures learning of the same material over 7 days in older adults.

Participants and Methods: The Boston Remote Assessment for Neurocognitive Health (BRANCH) (Papp et al., 2021) is a web-based assessment administered over 7 consecutive days repeating the same stimuli each day to capture multi-day-learning slopes. The assessment includes Face-Name (verbal-visual associative memory), Groceries-Prices (numeric-visual associative memory), and Digits-Signs (speeded processing of numeric-visual associations). Our sample consisted of 200 cognitively unimpaired older adults enrolled in

ongoing observational studies (mean age=74.5, 63% female, 87% Caucasian, mean education=16.6) who completed the tasks daily, at home, on their own digital devices.

Participants had previously completed in-clinic paper-and-pencil tests to compute a Preclinical Alzheimer's Cognitive Composite (PACC-5). Mixed-effects models controlling for age, sex, and education were used to observe the associations between PACC-5 scores and both initial performance and multi-day learning on the three BRANCH measures.

Results: Adherence was high with 96% of participants completing all seven days of consecutive assessment; demographic factors were not associated with differences in adherence. Younger participants had higher Day 1 scores all three measures, and learning slopes on Digit-Sign. Female participants performed better on Face-Name ($T=3.35$, $p<.001$) and Groceries-Prices ($T=2.00$, $p=0.04$) on Day 1 but no sex differences were seen in learning slopes; there were no sex differences on Digit-Sign. Black participants had lower Day 1 scores on Face-Name ($T=-3.34$, $p=0.003$) and Digit Sign ($T=3.44$, $p=0.002$), but no racial differences were seen on learning slopes for any measure. Education was not associated with any measure. First day performance on Face-Name ($B=0.39$, $p<.001$), but not learning slope ($B=0.008$, $p=0.302$) was associated with the PACC5. For Groceries-Prices, both Day 1 ($B=0.27$, $p<.001$) and learning slope ($B=0.02$, $p=0.03$) were associated with PACC-5. The Digit-Sign scores at Day 1 ($B=0.31$, $p<.001$) and learning slope ($B=0.06$, $p<.001$) were also both associated with PACC-5.

Conclusions: Seven days of remote, brief cognitive assessment was feasible in a sample of cognitively unimpaired older adults. Although various demographic factors were associated with initial performance on the tests, multi-day-learning slopes were largely unrelated to demographics, signaling the possibility of its utility in diverse samples. Both initial performance and learning scores on an associative memory and processing speed test were independently related to baseline cognition indicating that these tests' initial performance and learning metrics are convergent but unique in their contributions. The findings signal the value of measuring differences in learning across days as a means towards sensitively identifying differences in cognitive function before signs of frank impairment are observed. Next steps will involve identifying the optimal

way to model multi-day learning on these subtests to evaluate their potential associations with Alzheimer's disease biomarkers.

Categories: Teleneuropsychology/ Technology

Keyword 1: computerized neuropsychological testing

Keyword 2: technology

Keyword 3: learning

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85 Smartwatch reminders support prospective memory in Korsakoff's syndrome

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Objective: Korsakoff's syndrome (KS) is a neuropsychiatric disorder, caused by malnutrition. Central to KS are severe amnesia and executive dysfunctions. KS patients often fail to remember future intentions (prospective memory), and rely heavily on external support by caregivers. Recently, specialized smartwatches have been developed to support prospective memory verbally and by displaying pictures of future events. We investigated the benefit of a smartwatch and smartphone compared to no aid in supporting time accuracy and the ability to carry out future intentions in one case study. In three subsequent case studies, we investigated the possible benefits of a smartwatch aid for prospective memory (PM) compared to verbal in-person reminders.

Participants and Methods: In the first case study, one high-functioning KS patient with a WAIS IQ of 127 points, performed a total of 36 novel prospective memory tasks in three conditions (smartwatch, smartphone and no-aid).

In the second case series, three KS patients with average IQ performed 30 everyday PM tasks in two conditions (smartwatch, in-person).

Two dependent variables were indexed in both studies: PM time accuracy (in minutes), this was calculated as minutes difference from the assigned time, and precision of the PM task (correct or incorrect).

Results: In the first study, time accuracy was improved with a smartwatch compared to a smartphone and no-aid condition. Furthermore, the smartwatch and smartphone conditions were more effective than no aid in assisting memory for task content. In the second study, both the smartwatch and in-person instructions were equally effective in supporting prospective memory tasks.

Conclusions: Since prospective memory is compromised in KS, patients require assistance throughout the day in performing everyday and non-everyday tasks. The results of our case studies suggest that a smartwatch that gives specific verbal and visual reminders can be particularly helpful in supporting prospective memory for KS patients. Giving in-person instructions was equally effective as the use of this smartwatch, highlighting the possibility to support KS patients with less intensive everyday coaching. Together, these results are promising in applying smartwatches clinically to support prospective memory.

Categories: Teleneuropsychology/ Technology

Keyword 1: Korsakoff's syndrome/Wernicke's encephalopathy

Keyword 2: technology

Keyword 3: memory disorders

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86 Influence of Psychosocial Coronavirus Pandemic Stressors on Neuropsychological Functioning

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Objective: The objective of this study was to examine whether novel pandemic-related stressors have any effect on cognitive functioning. This study aimed to examine whether the overall number of pandemic-related