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13 Relationship Between Subjective Cognitive Decline and Episodic Memory Among Older Adults with and Without Neurocognitive Impairment

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Objective: Previous research has found that subjective cognitive decline corresponds with assessed memory impairment and could even be predictive of neurocognitive impairment. The purpose of this study was to investigate whether a single self-report item of subjective cognitive decline corresponds with the results of a performance-based measure of episodic memory.
Participants and Methods: Older adults (n = 100; age 60-90) were given the single item measure of subjective cognitive decline developed by Verfaille et al. (2018).
Results: Those who endorsed subjective cognitive decline (n = 68) had lower scores on the CVLT-II long delay free recall than those who did not endorse such a decline (n = 32). Additionally, older adults with a neurocognitive diagnosis believed their memory was becoming worse at a higher proportion than those without.
Conclusions: While a single item of subjective cognitive decline should not be substituted for a comprehensive evaluation of memory, the results suggest that it may have utility as a screening item.

Categories:
Assessment/Psychometrics/Methods (Adult)
Keyword 1: memory: normal
Keyword 2: self-report
Keyword 3: neurocognition
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14 Prevalence of Mid-Range Visual Functions and their Relationship to Higher-order Visual Functions after Stroke

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Objective: Visual deficits are common after stroke and are powerful predictors for the chronic functional outcome. However, while basic visual field and recognition deficits are relatively easy to assess with standardized methods, selective deficits in visual primitives, such as shape or motion, are harder to identify, as they often require a symmetrical bilateral posterior lesion in order to provoke full field deficits. We aimed to investigate the prevalence and co-occurrence of *hemifield* "mid-range" visual deficits. In addition, we looked at the repercussions of these mid-range deficits on higher-order visual cognitive functions, such as visuoconstruction and memory. At a more theoretical level, we investigated whether associations between deficits in 'mid-range' visual functions and deficits in higher-order visual cognitive functions are in line with a hierarchical, two-pathway model of the visual brain.
Participants and Methods: In 220 stroke patients and a healthy control group (N=49), we assessed the perception of colour (isoluminant stimuli in the red-green range), shape (Efron shapes), location (dot in a circle), orientation (lines at different angles), contrast (bars with converging grey-level differences), texture (from Brodatz grayscale texture album) and correlated motion (different percentages of dots moving in the same direction). All tasks started with a fixation dot presented at the centre of the screen. After one second, a target stimulus was presented on the horizontal midline at either 5º to the left or at 5º to the right side of the fixation. Then, after 1.5 seconds, two response items appeared in addition to the target stimulus for three seconds. To control for eye movements, we used an eye-tracker to present the target in a gaze contingent fashion. Thus, the target always remained in the correct retinal position

independent of eye movements. In a subset of 182 ischemic stroke patients, we also assessed visuoconstruction (Copy Rey-Complex Figure Test), visual emotion recognition (FEEST test) and visual memory (Doors-test).

Results: The results showed that deficits in motion-perception were most prevalent (26%), followed by colour (22%), texture (22%), location (21%), orientation (18%), contrast (14%), shape (14%) and glossiness (13%). 63% of the stroke patients showed one or more mid-range visual deficits. Overlap of deficits was small; they mostly occurred in isolation or co-occurred with only one or two other deficits. Impairments in mid-range visual functions could not predict performance on higher-order visual cognitive tasks. Impaired visuoconstruction and visual memory were only modestly predicted by a worse location perception. Impaired emotion perception was modestly predicted by a worse orientation perception. In addition, double dissociations were found: there were patients with selective deficits in 'mid-range' visual functions without higher-order visual deficits and vice versa.

Conclusions: First, deficits in "mid-range" visual functions are very prevalent. Since we found no strong patterns of co-occurrences, we suggest that an assessment of deficits at this level of visual processing requires screening the full range of visual functions. Second, the relationship between mid-range visual tasks and higher-order visual cognitive tasks is weak. Finally, our findings are not supportive of the hierarchical, two-pathway model but more in line with an alternative patchwork model.

Categories:
Assessment/Psychometrics/Methods (Adult)
Keyword 1: stroke
Keyword 2: visuospatial functions
Keyword 3: memory disorders
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15 Exploratory Factor Analysis of Cognitive and Positive Valence Measures for the RDoC

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Objective: As part of the Research Domain Criteria (RDoC) initiative, the NIMH seeks to improve experimental measures of cognitive and positive valence systems for use in intervention research. However, many RDoC tasks have not been psychometrically evaluated as a battery of measures. Our aim was to examine the factor structure of 7 such tasks chosen for their relevance to schizophrenia and other forms of serious mental illness. These include the n-back, Sternberg, and self-ordered pointing tasks (measures of the RDoC cognitive systems working memory construct); flanker and continuous performance tasks (measures of the RDoC cognitive systems cognitive control construct); and probabilistic learning and effort expenditure for reward tasks (measures of reward learning and reward valuation constructs).

Participants and Methods: The sample comprised 286 cognitively healthy participants who completed novel versions of all 7 tasks via an online recruitment platform, Prolific, in the summer of 2022. The mean age of participants was 38.6 years (SD = 14.5, range 18-74), 52% identified as female, and stratified recruitment ensured an ethnoracially diverse sample. Excluding time for instructions and practice, each task lasted approximately 6 minutes. Task order was randomized. We estimated optimal scores from each task including signal detection d-prime measures for the n-back, Sternberg, and continuous performance task, mean accuracy for the flanker task, win-stay to win-shift ratio for the probabilistic learning task, and trials completed for the effort expenditure for reward task. We used parallel analysis and a scree plot to determine the number of latent factors measured by the 7 task scores. Exploratory factor analysis with oblimin (oblique) rotation was used to examine the factor loading matrix.

Results: The scree plot and parallel analyses of the 7 task scores suggested three primary factors. The flanker and continuous performance task both strongly loaded onto the first factor, suggesting that these measures are strong indicators of cognitive control. The n-back,