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## A Comparative Review of Cognitive Assessment Tools for Adults in the Acute Care Setting

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# A Comparative Review of Cognitive Assessment Tools for

## Adults in the Acute Care Setting

Nicole Gagnet & Bethany Noffke



### 1. Ask: Research Question

Which cognitive assessments used with adults in the acute care setting have the strongest psychometric properties?

### 2a. Acquire: Search Terms

**Databases:** Proquest, CINAHL, PubMed, Sage, PsychInfo, Embase, Medline.

**Search Terms:** Cognitive assessment, cognitive screening, acute care, Mini Mental State Examination, Lowenstein Occupational Therapy Cognitive Assessment, Montreal Cognitive Assessment, Allen Cognitive Levels.

### 2b. Acquire: Selected Articles

**Van Heugten, Walton & Hentschell. (2015)** : A systematic review of the validity and other psychometric properties of cognitive screening assessments, such as the Mini Mental State Examination (MMSE), Montreal Cognitive Assessment (MoCA) and the Lowenstein Occupational Therapy Cognitive Assessment (LOTCA) for patients one month post-stroke.

**Douglas, Letts & Liu. (2008)**: A systematic review of various cognitive assessments for older adults as documented in occupational therapy literature that provides comprehensive information regarding their psychometric properties and recommendations for choosing what assessment to use in practice.

**Velayudhan et al. (2014)**: A systematic review of brief cognitive tests for patients with suspected dementia that provides information regarding their psychometric properties in order to help clinicians determine the most appropriate assessment suitable for the setting.

### 3a. Appraise: Study Quality

**Van Heugten, Walton & Hentschell. (2015)** : Level 1. A psychometric study investigating 51 studies that provided information regarding criterion, predictive, and convergent validity for 16 cognitive assessments used in the acute phase with stroke patients. A limitation of this study is that none of the 16 assessments provided testing for all cognitive domains observed in stroke patients.

**Douglas, Letts & Liu. (2008)**: Level 1. A psychometric study providing information regarding test-retest and interrater reliability, as well as concurrent and predictive validity of 32 cognitive assessments for older adults. A limitation of this study is that other assessments currently used by occupational therapists were not included.

**Velayudhan et al. (2014)**: Level 1. A psychometric study providing information regarding sensitivity/specificity, interrater and test-retest reliability across 22 brief cognitive tests for dementia. A limitation of this study is that the review was strictly for patients with suspected dementia, preventing the findings of the results to be generalized to other diagnoses.

### 3b. Appraise: Study Results

Table 1. Psychometric properties of the cognitive assessments reviewed

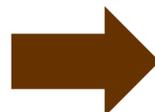
Assessment	Time	Cost	Administration Method	Reliability	Criterion Validity	Domains Tested
MMSE	10-15 min	Free	Client is asked specific questions regarding orientation, delayed recall, and executive functions. Client is asked to follow written and verbal instructions and copy geometric images.	Test-retest: excellent (0.887) Interrater: adequate (0.97)	Excellent	Orientation, attention, learning, calculation, delayed recall, and construction
MoCA	10-15 min	Free	Each subtest is different, but requires the client to answer questions and follow directions that test visuo-construction skills, memory, orientation and attention.	Test-retest: excellent (0.91) Interrater: excellent (0.9)	Excellent	Visuo-executive, naming, attention, language, abstraction, delayed recall, orientation
LOTCA	30-90 min	\$330	A therapist guided assessment where the client is asked to answer various questions and follow instructions related to basic cognitive skills that are needed for everyday function.	Interrater: adequate	Adequate- excellent	4 subscales: orientation, visual and spatial perception, visuomotor organization, and thinking operations
ACL	20-30 min	\$250	Client is asked to sew various patterns using a flat leather string that has a light side & dark side, a large blunt needle and a large piece of rectangular- shaped leather with premade holes around the outside edges. Patterns include a running stitch, whipstitch and cordovan stitch.	Test- retest: poor Interrater: excellent	Adequate	Grooming, dressing, demeanor, home management, telephone/transport, money management, planning leisure, practical recall.
Clock- Drawing Test	3-5 min	Free	Client asked to mark the hours around a circle to represent a clock and indicate a time.	Test- retest: excellent (0.94) Interrater: excellent (0.88-0.97)	Adequate	Executive functioning and visual spatial skills

### 4. Apply: Conclusions for Practice

Our findings suggest that the MMSE and MoCA are the two cognitive assessments with the strongest psychometric properties studied in the reviews. In addition, they are quick to administer and cost efficient. Although the ACL and LOTCA are commonly used, our findings concluded that they take more time to administer, are costly, and do not have as strong of psychometric properties as the MMSE and MoCA. Psychometric factors are one of the most important factors to consider when choosing a cognitive assessment, however it is also important to consider the diagnosis, client settings, specific client factors and information that the therapist is trying to obtain. Overall, there is no one cognitive assessment that can be used across all diagnoses and clients, but the MMSE and MoCA are proved to have some of the best psychometric properties among the ones that were examined in the articles reviewed.

### References:

- Douglas, A., Letts, L., & Liu, L. (2009). Review of cognitive assessments for older adults. *Physical & Occupational Therapy in Geriatrics*, 26(4), 13-43. doi:10.1080/02703180801963758
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**The MMSE and MoCA have the strongest psychometric properties for adults in the acute care setting.**