

## Reviewer's report

**Title:** Validation of the Cognitive Assessment of Later Life Status (CALLS) Instrument: A Computerized Telephonic Screen

**Version:** 1 **Date:** 19 September 2006

**Reviewer:** Celeste de Jager

### Reviewer's report:

#### General

Telephone screening instruments are useful for large scale studies, and thus a well constructed test battery that has been carefully tested in this hierarchical manner could be a useful addition to those already available. The author's suggestion of translating the test into other languages for wider use would be a major benefit. As the CALLS is based on standard neuropsychological tests with good construct and concurrent validity (shown by the authors) and includes a brief depression scale, one expects that it will be sensitive to cognitive impairment in older adults. Therefore development of norms tables will be useful. The novelty of this telephone screen is that it has processing speed tests such as simple and choice reaction time tests incorporated, and is scored by computer for accuracy.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1) My main criticism of the paper is the inconsistency in terminology used with regard to cognitive domains, which results in some confusion for the reader. Initially, it was stated that the necessary cognitive domains to include in the CALLS were verbal learning and memory, working memory, orientation, processing speed, attention and executive function. However, the final battery for the current study included verbal learning and memory, processing speed, attention and 'mental control' (which can surely be termed 'working memory' to be consistent), verbal fluency and semantic memory (not considered necessary in the initial list and with no justification for inclusion in the text). The terminology changes again when the principal components analysis is completed. Attention and mental control could again be called 'attention and working memory'; 'language processing' to be consistent could be termed 'verbal fluency and naming'.

2) The final CALLS has a preponderance of verbal items (which might account for the difference in male and female performance as suggested), but no executive function test and a very minor test of orientation (date), which is noted to be one of the first manifestations of early Alzheimer's Disease. Thus, although the CALLS has sufficient correlation with the MMSE and the neuropsychological test battery subtests and components to be a valid test for assessment of performance of older adults, it is missing a few cognitive domains which the author's themselves considered essential. This brings up the question of whether in fact it is any better than its competitors, namely the TICS and TICS-m. It would possibly have been more useful to compare the CALLS with the TICS-m than with the MMSE. Perhaps the authors should suggest that some modifications of the battery test items are necessary to address these shortcomings.

3) It is understood that the principal components analysis groups items together statistically, but there are a few tests that do not appear to fit into the group they are assigned to e.g. 'serial 7's in the language processing component. This is normally a test of attention and working memory. The Date score is normally a test of orientation, but here is grouped with the 'attention and mental control' component. A sentence to justify or explain these 'misfits' in terms of cognitive domains would be appropriate.

4) Page 10. Par.1, line 7. The word 'criteria' is used to refer to a single item and should therefore be corrected to 'criterion'.

5) Page 11. Par.1. If the MMSE correlation coefficient is 0.60, it does not logically follow that the variance in CALLS accounted for by the MMSE is 36%. A sentence to describe how this variance was derived would be helpful.

6) It would be useful to include the depression scores (mean, SD, range) in one of the tables so the reader can ascertain whether they were all in the normal range. As there was no correlation between depression and any cognitive score, this could be assumed.

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Discretionary Revisions (which the author can choose to ignore)

- 1) Page 14. Processing speed is known to decline with age. Although the discussion here is interesting, it could be noted that to be useful in detecting deficits associated with dementia, norms for age would be necessary in determining these.
- 2) The suggestion is made that because verbal memory correlated with processing speed, that poor verbal recall may be due to slower processing speed. It is also possible that slow processing speed may account for poor verbal encoding. This might be more likely here, as it was on trial 1 only of the verbal memory test where the correlation with processing speed was significant.
- 3) Page 14. Par.3,line 3. the term 'abstraction ability' would be clearer to the reader as 'abstract thinking'.

**What next?:** Accept after minor essential revisions

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No

**Declaration of competing interests:**

I declare that I have no competing interests.