Reviewer’s report

Title: The Beijing Version of the Montreal Cognitive Assessment as a Brief Screening Tool for Mild Cognitive Impairment: A Community-based Study

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Reviewer: Edmond Teng

Reviewer’s report:

In this manuscript, the authors assessed a large cohort of subjects (n=1001) diagnosed with normal cognition, mild cognitive impairment, or dementia with the Beijing version of the Montreal Cognitive Assessment (MoCA-BJ) and the MMSE. Participants were drawn from both rural and urban areas around Beijing. The investigators derived sensitivity and specificity data for the MoCA-BJ's identification of MCI or dementia relative to clinical diagnoses, and compared the MoCA-BJ's performance to that of the MMSE. The primary finding from ROC analyses was that the MoCA-BJ's performance for discriminating MCI from normal cognition was relatively mediocre (AUC=0.71), and essentially the same as that of the MMSE, which is typically much quicker to administer. The authors also found some differences in MoCA-BJ scores between different urban and rural settings, but these were accounted for by the differences in age and education levels in these settings. Despite the relatively large size of the study, the results are largely negative and are in contrast to a number of other studies suggesting the superiority of the MoCA over the MMSE for identifying MCI. There are a number of other issues with the current manuscript that limit its impact:

Major Essential Revisions:

1. Although this manuscript asserts in multiple places (p. 6, p. 13) that it is the first to study the utility of the MoCA-BJ in a large community-based cohort, a brief literature search indicates that a much larger (n=8411) multi-center study of the MoCA-BJ that also incorporated rural and urban samples was recently published (Lu et al. J Geriatr Psychiatry Neurol, 2011, 24:184-190). That study, in contrast to the current study, clearly demonstrated the superiority of the MoCA-BJ over the MMSE for distinguishing MCI from normal cognition. The authors should at least acknowledge this earlier study, and consider exploring possible causes for the divergent results. In a similar vein, the authors cite some previous smaller studies with the MoCA-BJ, but do not compare their results to those studies either. Since those papers are only available in Chinese language journals, a more detailed discussion of their results might be useful should the current manuscript be published in an English language journal.

2. The description of the how a diagnosis of MCI was reached needs further elaboration. It is not stated whether the Petersen or other criteria were used, and the specific neuropsychological tests and any cut-offs that might have been used are not listed. This information is should be included, since this clinical diagnosis
of MCI represents the gold standard against which the MoCA-BJ and MMSE are being judged.

Minor Essential vs. Discretionary Revisions:

3. A relatively low number of participants were diagnosed with dementia (n=21). Since the MoCA is primarily optimized for distinguishing cognitively impaired vs. cognitively intact individuals, perhaps the dementia and MCI groups should be combined for the statistical analyses.

4. Given the strong influence of age and in particular, education on MoCA-BJ scores the authors should consider calculating more demographically sensitive cut-points to determine whether adjusted cut-points could improve the utility of the MoCA-BJ in this sample, given that it was slightly better in among participants with >11 years of education.

Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.