Reviewer's report

Title: Cognitive Health among Older Adults in the United States and in England

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Reviewer: Kaarin J Anstey

Reviewer’s report:

This article presents the first comparison of cognitive function across the US and England using comparable data from the HRS and ELSA studies. The study makes a highly significant contribution to cross-national research, and research on cognitive aging. It allows for evaluation of the influence of social context, policy and other national differences on cognitive outcomes. The findings of the study will be of wide interest.

Major compulsory revisions:

1. Throughout the manuscript, more consideration needs to be given to the interpretation of unadjusted comparisons because the samples differ in demographic characteristics and surveys have design differences.

2. How did the authors overcome the difference in response rates between studies? Presumably this was achieved by weighting each study up to the population – this needs to be better described in the method section. i.e. an explanation of how the weights were used and how they achieve comparability between the studies. This is important because the interpretation of national differences depends on the assumption that both studies had comparable sample representativeness. Referring the reader to a website for information on derivation of sample weights is not sufficient.

3. Table 1 shows demographic differences between the samples (e.g. in education, gender, income as shown in table 1). It is useful to see the raw rates of disease and disability for each country, but meaningful comparisons also need to be adjusted for these demographic differences.

3. Similarly the differences in cognitive function shown in table 2 are not interpretable without adjusting for demographic differences.

Minor essential revisions

1. In some parts of the manuscript the text requires editing to improve expression. For example on page 3, paragraph 1, “...trends ...likely have had an important impact” could be rewritten as “…are likely to have had…” On page 13 “A number of us...” needs to be rephrased.

2. What is the source and validity of the self-assessed memory items?

3. It is unclear what is meant on page 5 by the statement “We grouped those who assessed their memory as ‘fair’ or ‘poor’ for our analyses – do the authors mean
they collapsed across these responses?
4. Which chronic conditions were not included in this article and what is the rationale for the inclusion of stroke, diabetes etc..
5. pge 5. ‘an abbreviated 8 item …CES-D’ is tautological. The authors need to provide information on the comparability of this short-form of the CES-D to the full scale.
6. What sort of information was obtained on current prescription medications ie type? Doseage? Number of prescriptions?
7. Is there any psychometric data available on the cognitive measures such as reliability or validity?
8. The layout and formatting of Table 4 could be improved. Is is possible to present these results with fewer models? It would be useful to indicate significant results.

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

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

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**
I declare I have no competing interests