Author’s response to reviews

Title: The comparative diagnostic accuracy of the Mini Mental State Examination (MMSE) and the General Practitioner assessment of Cognition (GPCOG) for identifying dementia in primary care: A systematic review protocol

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Author’s response to reviews:

Responses to Reviewer 1, followed by responses to Reviewer 2.

Reviewer comments given below, followed by an asterisk and our response:

R1 - Page 5, Section Methods, second paragraph. It writes "The secondary outcome of the review is to identify other common factors contributing to the overall usefulness of the tests when applied to the primary care setting, in order to make research and clinical recommendations where possible." This sentence is somewhat vague, I am not really sure what the authors mean here and how it reflects to the methods section. Do they maybe mean that they aim to identify subgroups of participants for which the tests work better? *

Thank you for highlighting. We have revised this sentence to read:

“The secondary outcome of the review is to identify other common test-related factors identified by included studies, such as ease of administration or administration time. Whilst beyond our primary focus of test accuracy, these other factors may contribute to the overall usefulness of the tests when applied to the primary care setting, and we will incorporate them in our findings in order to make useful research and clinical recommendations."
R1 - Page 5, line 50, correct the error message "Error! Reference source not found."

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This is now updated to read “Search strategies are shown in the supplementary files.”

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R1 - Page 6, it writes "The conventional threshold […] for the GPCOG-patient is <5 (where scores below 5 indicate impairment), and scores between 5 and 8 indicate ambiguity and require further assessment." This part is also a bit unclear. For the purposes of your review, how will you handle people with 5<GPCOG<8? As positives or negatives? What have the original studies done in such cases?

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Thank you – we have reworded this to:

“The conventional threshold for the MMSE is 24 (also shown as <24), where out of a maximum possible 30 points, scores below 24 indicate impairment. The GPCOG comprises of two sections: the section completed by the individual being assessed, known as GPCOG-patient, and an optional section for a relative or friend to complete (if present) known as GPCOG-informant. GPCOG-patient has 9 items with possible total scores of between 0 (indicating severe impairment) and 9 (indicating no impairment). GPCOG-informant has 6 items with possible total scores of between 0 (indicating severe impairment) and 6 (indicating no impairment). GPCOG-patient can be conducted by itself, with a conventional threshold of 8 out of 9 (<8). If informants are available, a score of GPCOG-patient between 5 and 8 precipitates the GPCOG-informant and the scores are combined (‘GPCOG-total’) with a conventional threshold of 11 out of a maximum 15 (<11). If no informant is available, the conventional threshold of 8 stands. It is also possible to conduct a staged GPCOG assessment where GPCOG-informant is only required if GPCOG-patient is scored between 5 and 8 out of 9. This is known as ‘GPCOG Two stage’.

For our assessment, we will stratify GPCOG into 3 types of test: GPCOG-patient with a threshold of <8; GPCOG-total with a threshold of <11; and GPCOG Two stage”.

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R1 - Page 9, line 24, it writes "…. (reference chapter 10 of handbook)". Probably a typo, just write the reference

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Updated with correct reference, thank you.

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R1 - Same page, line 34, it writes "However, we will consider using a bivariate meta regression model to estimate and compare summary points". Could the authors give some additional details about the "regression" part of this analysis? I understand they are referring to the bivariate binomial-normal model for analyzing Se-Spe, but what will they regress upon? The threshold value?

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Thank you - updated with the text below:

“We will perform meta-analysis if the quantity and nature of the included studies permit. Again, if data allow, we will use a hierarchical meta-regression model with test type as a covariate to estimate and compare summary receiver operating characteristic (SROC) curves or summary points. A priori uncertainty about thresholds for determining test positivity and the likelihood of implicit thresholds suggests estimation of SROC curves using a hierarchical SROC (HSROC) meta-regression model may be preferable [32]. However, we will consider using a bivariate meta-regression model to estimate and compare summary points [33, 34] if studies use a common threshold.”

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R2 - Is the review of systematic reviews published? If so, it's not clear in the text which reference this is.

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The overview is not yet published although this is intended.

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R2 - The conclusion of this previous review could be formulated a bit more specifically in the introduction.

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Thank you, this has been revised in the introduction.
R2 - Many items are already pre-determined for this review, but not how Quadas-2 will be tailored. It's not necessary for the protocol, especially as this is a comparative review, but it would be helpful to show that you thought about how quality would be assessed before beginning the review.

Thank you. We have explicitly acknowledged the need for tailoring of QUADAS-2 as well as our intention to pilot the tailored assessment. We hope this is sufficient to demonstrate how we have considered quality assessment within the review protocol.

R2 - There are 3 most frequently studied tests, but you only include 2. It's not clear why the 3rd is not included or what it was, but maybe I am missing something.

Thank you for highlighting; we have added the following sentences:

“The clock drawing test – CDT - was the third most frequently-assessed tool, featuring in 4 reviews. We judged this to be less comparable to the MMSE in terms of administration complexity, timing and domains assessed, compared to the GPCOG”.

R2 - It is not clear how many systematic reviews you have identified. You say 13, but I only see references for 7 in the introduction (pg. 3 line 34).

Apologies for the lack of clarity – we identified 13 systematic reviews for inclusion in the overview, and this is now updated in the references.

R2 - You could add a reference for a methods paper on comparative accuracy reviews.
Thank you, I have added the following references:


R2 - There were a few typos: o pg 8 line 7. I think you mean "articles" instead of "data". o pg 5. "Error! Reference source not found"

Thank you – ‘data’ replaced with ‘sources’. Error message removed and section updated.

[NB - Reviewers' comments and responses also attached as a Word file for ease of editing]