**Author’s response to reviews**

**Title:** Computer-based cognitive interventions for mild cognitive impairment and dementia in older adults: protocol for a systematic review of published studies and meta-analysis

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**Author’s response to reviews:**

**Reviewer reports:**

Reviewer #1

The authors are reporting a protocol of a systematic review of an important clinical question and I hope the final report contribute to the existing knowledge. I have made some comments and a few suggestions. Please feel free to ignore the suggestions.

1. **BACKGROUND:** Please mention the rationale for your interest in 'computer-based' intervention.

   // Our justification for looking at computer based interventions is that computer based interventions can be beneficial for MCI and dementia, see line 56 to 62.

2. **THESIS STATEMENT/OBJECTIVE:** Please move the thesis statement from the first part of methods and either add it at the end of Background or add it as a proper Objective heading between Background and Methods.

   // The paragraph under question has been moved from under the methods heading to the end of the background section under an Aim heading.

3. **PUBLISHED/UNPUBLISHED:** It is confusing when you say 'published' in title and then you search ClinicalTrials.Gov, which is the source of unpublished trials. Please remove the limitation to published literature from the title and the manuscript. If you intend to keep it this limitation please mention the publication bias in LIMITATIONS heading at the end of DISCUSSION.
4. SEARCH METHODS

Our search strategy has been revised in consultation with an expert librarian at our institution. The new strategy has been included in the protocol see lines 116 to 119.

4.1. You do not need to search KoreaMed; it introduces unnecessary geographical bias.

//KoreaMed has been removed from the search.

You do not need also Abstracts in Social Gerontology, Health Source: Nursing/Academic Edition, Psychology and Behavioural Sciences Collection, PsycARTIVLES, PsycBooks, and Scopus. It does not mean that you should not search them but they are not necessary because they are not recommended by evidence and not searching them will save your time/money. Instead, you can search Embase (via Ovid SP), MEDLINE (via Ovid SP), PsycINFO (via PsyNET), CINAHL via EBSCOhost, ClinicalTrials.Gov, CENTRAL (via Cochrane Library), ALOIS (https://alois.medsci.ox.ac.uk/), and Web of Science.

//Our revised strategy (line 114 to 130) now includes:

- MEDLINE via Pubmed
- CENTRAL
- Scopus (which includes most of Embase, see link below)
  https://www.elsevier.com/solutions/embase-biomedical-research/learn-and-support
- CINAHL (via EBSCOhost)
- ALOIS (https://alois.medsci.ox.ac.uk/)

4.2. You also do not have access to all Cochrane Specialised Registers so you cannot search them.

// Thank you for this clarification, the authors misunderstood the published description of how CENTRAL is created.

4.3. Unlike what you said about following Cochrane Handbook, you have not used the validated search filters of Embase, MEDLINE and CINAHL for searching RCTs.
As per our revised search method, Embase is included in our Scopus search, hence a Scopus filter rather than an Embase filter is needed. To date, we have not been able to identify a Scopus filter. Filters for MEDLINE and CINAHL have to be identified and included in the search strategy.

4.4. You do not need to search for random* terms in CENTRAL because it is the source of RCTs. Your search blocks in the text are not necessary if you report the strategies in the Appendix. Paediatrics has two correct spellings (British and American). Truncation has not been used properly.

// Thank you for pointing this out, we have removed the term ‘random*’ from our CENTRAL search strategy.

4.5. You have not searched for cognitive therapy, cognitive treatment, and cognitive interventions. Please check some of the existing relevant systematic reviews and definitely find a search expert librarian/information specialist in your institute or post a task on TaskExchange.Cochrane.Org.

// The recommended search terms have been included and we have consulted a specialist librarian.


// Language bias has been added to a limitation section. Please see line 205 to 207.

5. SCREENING: You should have two people for screening title/abstract/full-text and data extraction. Human error and disagreement is possible so may need a third researcher in some cases.

// We have reconsidered this point in relation to our available resources. The authors agree that the added rigor of including a second or third person in screening the search results is worthwhile. We have adjusted the manuscript accordingly; please see line 156 to 157.

6. [Suggestion] COVIDENCE: Covidence has limited use for data extraction and you might end up creating your own data extraction form in another program. As advice, first create the data extraction form on paper and then see if all your data points fits into Covidence, if not then think about another program.

// As suggested, we will use a paper-based data extraction form (line number 142-143)
7. [Suggestion] EXTRA DATA

7.1. One data point to extract could be Public and Patients Involvement in the included studies. I think it will be valuable finding for your review. But feel free to ignore this suggestion.

//On this point (7.1), the authors assume that the reviewer is suggesting that we include whether participants were recruited through a private vs public health care process. While an important question, it is outside of the scope of this review.

7.2. You can use items from Tidier Checklist for extracting the details of the intervention. It is a reporting checklist but also helpful in data extraction.

//This is a useful suggestion and we have included it in our ‘Data extraction and management section’, please see line number 150.

8. HETEROGENEITY: Sensitivity analysis has not been mentioned.

//We have added a sensitivity analysis between fixed and random effects models in the Assessment of heterogeneity section. Please see line number 177-180.

9. [Suggestion] AVAILABILITY OF DATA AND MATERIALS: You can easily share all the extracted data and accepted manuscript in RevMan file format openly.

// We are happy to make the extracted data available to the public, a note was added under the heading Data extraction and management, see line 159.

10. LIMITATIONS: Either remove the limitation to published literature that introduce Publication Bias or if it is too late for considering unpublished literature than please add a Limitations heading/paragraph at the end of the of Discussion and mention such bias. Same for Language bias please.

// We have noted publication and language bias in a limitations section (Please see line number: 205-207)

11. [Suggestion] REFERENCES: It seems that the references are out of date. Please try to cite at least the latest Cochrane reviews or other systematic reviews in the field in Background/Discussion.

// The latest systematic reviews on this topic have been included and critically summarized in the background section. For example, see reference number 13.
12. [Suggestion] REVIEWERS' COMMENTS: One of the reviewers have suggested that you can update the existing systematic review. Even if you do not update that systematic review, you can contact the authors and ask for the data from their systematic review. If they provide the data (search results for de-duplication, extracted data for meta-analysis) then it will save lots of time for your team. It will also be easily possible to run random effect model on their data as you criticised that they have run only fixed effect.

//We have elected not to update an existing systematic review because our inclusion criteria have some differences. Screening the data used by previous systematic reviews and meta-analyses may be helpful. We are happy to email the authors of previous meta-analyses for this practical reason. We have added a sensitivity analysis to our protocol to explore the fixed-effect vs random effects models, see point 8 above.

13. SEARCH STRATEGIES: This section requires a serious attention by a search expert librarian/information specialist. Cochrane Handbook has not been followed. EBSCOhost and APA PsycNET are not databases. Usually reporting only MEDLINE search strategy for protocol publication will be enough so you can ask a librarian to design it for you. You can include all search strategies only in the final report of your systematic review. Please revise all the search strategies with help from a search expert librarian.

//Our search strategy has been completely redesigned; see our response to point 4.1 above.