

## Peer Review Report

# Review Report on Longitudinal Association Between Depressive Symptoms and Cognitive Function Among Older Adults: A Parallel Latent Growth Curve Modeling Approach

Original Article, Int J Public Health

Reviewer: Reviewer 1

Submitted on: 23 Jun 2022

Article DOI: 10.3389/ijph.2022.1605124

### EVALUATION

#### **Q 1** Please summarize the main findings of the study.

Thank you for the opportunity to read your manuscript. The topic, how depressive symptoms and cognitive function co-exists in older persons and how they are associated with each other is very important. There are already several publications on the same topic, also describing the course of both cognitive function and depressive symptoms. The novelty of your study is the use of latent growth curve model to be able to study even better how these two variables are associated. This use of statistics is very elegant.

The main findings are an increased in depressive symptoms over time, and a decrease in cognitive function over time. Further, the better cognitive function, the less depressive symptoms but also a steeper worsening of the depressive symptoms over time. Moreover, the faster the cognitive decline was, the faster det the depressive symptoms worsened. Interestingly, higher education level was associated with faster decline in cognitive function.

#### **Q 2** Please highlight the limitations and strengths.

The strength of the study is the relatively high number of participants, the elegant statistic methods used, and the long follow up time. The limitations are the validity of the depression assessment, and the generalization of the findings.

#### **Q 3** Please provide your detailed review report to the authors. The editors prefer to receive your review structured in major and minor comments. Please consider in your review the methods (statistical methods valid and correctly applied (e.g. sample size, choice of test), is the study replicable based on the method description?), results, data interpretation and references. If there are any objective errors, or if the conclusions are not supported, you should detail your concerns.

I have divided my feedback in mayor and minor comments:

Mayor comments:

1. There is no description of the how many that were eligible for the study, but not included, nor if those excluded from the study were different from those included. Please add some information about the number of eligible participants, and possible differences in gender and age. I also miss a discussion about if the study cohort is representative for the Chinese population, and for elderly in the whole world.
2. The assessment of the depressive symptoms is based on the CLHLS scale/assessment, which is described as a scale used in the Chinese national survey. The scale is described in detail, but it is unclear if the scale has been validated against another depression assessment scale like MADRS? Please also revise the description, as you write that the scale has two positive and three negative items (page 5, line 91) and three positive items (page 5, line 96). You also write that a higher score indicates greater DS, I would suggest writing 'indicates more severe DS'.
3. The assessment of cognitive function is based on the MMSE. At page 5, lines 108-109, you write "Excluding the questions asking to recall the name and quantity of food in one minute for seven points...". Is this a different MMSE that the original MMSE? I do not recognize the naming of the food. Please also rephrase the sentence as it is unclear.

4. The first assessment was done in 2011, the last in 2018. In my mind the follow up period is then 7 years, but you write several places in the manuscript has a eight-years follow-up period. Please explain.

Minor comments:

1. In the abstract, please explain the abbreviations TLI, CFI, and RMSEA. Please also on a general basis consider reducing the use of abbreviations, especially the use of CF and DS (see below).
2. Page 2, line 29–34: “A large proportion of...” and “.....to dementia takes a long time....” Are rather imprecise descriptions. Please add some more information.
3. Page 5, line 104: “The Mini-mental State Examination (MMSE) in 1974...” should perhaps read “The Mini-mental State Examination (MMSE) developed in 1974...”
4. Page 8, line 170: Do you mean “baseline cognitive level”, not “baseline depression level”?
5. Page 9, line 195: You state that a result is shown in figure 1. I can’t find a figure 1 in the supplement material. Please help me.

#### PLEASE COMMENT

**Q 4** Is the title appropriate, concise, attractive?

Yes

**Q 5** Are the keywords appropriate?

Yes

**Q 6** Is the English language of sufficient quality?

Yes, my only feedback is that the manuscript would be better off with less use of abbreviations. As an example, one sentence in lines 217 and 218 at page 10, reads: "Elderly patients with CF and DS should receive....". When replacing the abbreviations, it reads: "Elderly patients with cognitive function and depressive symptoms should receive....". All persons have cognitive function, I suppose the authors mean reduced cognitive function or cognitive impairment. Such misunderstanding could be reduced if not using abbreviations.

**Q 7** Is the quality of the figures and tables satisfactory?

Yes.

**Q 8** Does the reference list cover the relevant literature adequately and in an unbiased manner?)

Yes

#### QUALITY ASSESSMENT

**Q 9** Originality



**Q 10** Rigor



**Q 11** Significance to the field



**Q 12** Interest to a general audience



**Q 13** Quality of the writing



**Q 14** Overall scientific quality of the study



REVISION LEVEL

**Q 15** Please make a recommendation based on your comments:

Major revisions.