Reviewer’s report

Title: Item response analysis of the Geriatric Anxiety Inventory among the elderly in China: Dimensionality and differential item functioning test

Version: 1 Date: 23 Sep 2019

Reviewer: Helge Molde

Reviewer's report:

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Review of manuscript entitled:
"Item response analysis of the Geriatric Anxiety Inventory among the elderly in china: Dimensionality and differential item functioning"
Thank you for inviting me to review this paper.
I am happy to see that the Mokken scale analysis are sufficient reported.

Major:
In the abstract the authors states the following: «However, reports regarding its dimensionality are mixed,......." I would suggest some rewriting of this argument, as the 10 cross-nation analysis of the dimensionality of the Geriatric Anxiety Inventory (GAI) by Molde et al (2019) suggest otherwise. Molde et al (2019) report primary uni-dimensionality of the GAI across nations. Hence, this study support earlier research, more than being novel in itself.

Introduction:
In the introduction, I urge the authors to rewrite the story, as there is less support to two-, three and four factor solutions in comparison with a unidimensional structure of the GAI, because of the findings by Molde et al. (2019). The arguments the authors uses are not new, but the same as provided by Molde et al (2017; 2019). Hence, this study does not solve the issue, it compliments earlier research. I think this has to be acknowledged.

Method and Discussion:
Mokken is an ordinal IRT model, thus it is more flexible, but one may only draw conclusions using sumscores of the scale on an ordinal scale level. This should be stated in the method section and in the conclusion.

In the conclusion the authors write: "Previous studies have indicated confliction findings regarding the factor structure of the GAI.......To address the contradictions about the dimensionality of the GAI, we
introduced Mokken scale analysis,....."

Again, as stated above, I urge the authors to rewrite the story, as there is less support to two-, three and four factor solutions in comparison with a unidimensional structure of the GAI, because of the findings by Molde et al. (2019). The arguments the authors uses are not new, but the same as provided by Molde et al (2017; 2019). Hence, this study does not solve the issue, it compliments earlier research. I think this has to be acknowledged.

Language:
The grammar and language still needs to be sharpened and closely scrutinized. For example; In the introduction:
1. "Besides confusion with other disorders[4], cognitive deficits and somatic symptoms account together for the unsatisfactory validity of most measuring strategies".
Do the authors mean measuring instruments?
2. "Different populations express differently in anxiety and depression, such as highly concerned gender gap."
Comment: I think this is poor language, it needs to be rewritten

3. As such, I believe the manuscript still is in need to be checked for bad writing, grammar and tenses, all over.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:
Needs some language corrections before being published

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