Reviewer’s report

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

Version: 0 Date: 09 Jul 2019

Reviewer: Research Square

Reviewer's report:

"STATISTICAL REVIEWER ASSESSMENT:

Is the study design appropriate for the research question (considering whether the analyzed population accurately reflects the design and whether you see any problems with control/comparison groups, e.g., likely confounders)?
No - there are minor issues

Are methodologies adequate and well implemented (considering whether assumptions are addressed and whether analyses are robust)?
No - there are major issues

Are the analyses adequately communicated (considering whether reporting details are adequate and whether figures and tables are well labeled and described)?
No - there are major issues

Does the interpretation accurately reflect the analyses without overstatement (considering whether limitations/bias are acknowledged and whether accurate descriptors, e.g., 'significant', are used)?
No - there are major issues

Could an appropriately REVISED version of this work represent a statistically sound contribution?
Maybe - with major revisions

STATISTICAL REVIEWER COMMENTS:

Overall, the study objective is clear. The literature review is comprehensive. However, the study design, survey sampling and statistical analyses are not well performed.

REQUESTED REVISIONS:
The authors need to address following issues:
1. the survey has two other surveys except the one that was used for this analysis. What other two surveys? What the main objective of this whole study? Was this study a secondary analysis? More sampling information is needed, such as what difference between this study and the paper already published used the same data. How was the survey conducted?
2. The study stated that item response analysis is better than EFA and CFA. There are two concerns here: (1) readers expect more solid evidences to the statement, such as theory adjustment, more literature citations. (2) since EFA and CFA are inferior to IRA, why the study stated that the results confirmed one dimensionality from EFA and CFA?
3. The study section did not cover descriptive analyses. The methods used in this study also need to be clear and full described.
4. The results and discussion are not well presented.

ADDITIONAL REQUESTS/SUGGESTIONS:
Authors need correct grammar errors. Some sentences are not complete. 

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

No

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

No

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

No

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:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this
1. Do you have any financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

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