Reviewer’s report

Title: Relative importance of four functional measures as predictors of 15-year mortality in the older Dutch population

Version: 0 Date: 16 Sep 2018

Reviewer: Siti Setiati

Reviewer's report:

Overall, the manuscript is good. I appreciate the work on such an interesting topic and the results are also interesting and important. However, there are several things that can be improved in writing this manuscript. Comments will be given per section.

Comments for abstract:

The methods section should state the total number of sample (page 4 line 19-21). Also, the sampling method should be mentioned.

The result section should state the percentage of subject who died (page 4 line 39).

The statistical value of lower body performance and hand grip strength for woman and self-reported physical limitations in men should be reported (page 4 line 50-53).

Comments on Background:

Overall, explanation about the evidence gap from previous study and the novelty of this study needs to be improved.

Background should explain what is physical function and elaborate the effect of ageing and physical function. (page 6 line 6).

Explanation about tests (its division into objective and subjective and their examples) currently is unclear and needs to be improved/rephrased. (page 6 line 6-13)

Explanation of self-reported functional limitations as "experienced difficulty doing activity of daily living" needs grammatical correction and should be rephrased for it to make sense. (page 6 line 11-13)

Confirmation for information on Page 6 line 15-27: were those previous study done in elderly? did it differentiate between men and women? Please mention in the manuscript to highlight the novelty of your study.
Page 6 line 33-41: you write about previous researches that answer similar question to your own research question, which raise the question on the novelty of your study. There had been studies that examine predictive value of those measurements for mortality, why is the current study still needed? Once again please highlight the novelty of your study by stressing the difference/remaining gap of knowledge/limitations from previous study that explain the importance of your study.

Page 7 line 7: please explain what did you mean by "with almost disappearance of significance in woman"

Page 7 line 11: I think you may elaborate on previous study on self-reported functional limitations or other subjective measure. You may want to include information from reference no 12-14, 5, 26 that seems to report this topic.

My advice is to group information related to objective tests into one paragraph and subjective test into another.

I think it's excellent that you mentioned the importance of doing these test to help with clinical decision making (page 7 line 15-17), you should elaborate it and place this information in the opening paragraph instead.

Comments for Methods:
-Aim:

You stated that the aim of the study was to compare objective and subjective physical performance test in predicting mortality and gender effect. There are several things that need confirmation:

1. Did your study compare objective versus subjective or did you mean that the comparison was made among those tests that include both objective and subjective tests? I think you need to clarify this, since currently the written aim can be misleading, because the data analysis and result did not compare objective (3 tests) vs subjective (1 test), rather it compared those tests. Please state an aim that best reflect the content of the rest of this paper.

2. Is it physical function test or physical performance test?

3. What did you mean by "gender effect" in older men and woman? Did you mean the difference of predictive value of those tests according to the gender? Please clarify/rephrase.
- Study Sample

Please mention the sampling methods

How many was the total participants in LASA cycle 95-96? How many had sufficient data to be included in this study? Were they all included? What's the reason for exclusion? (page 8 line 1-5)

Please mention the sample calculation for this study to get the number of 680 for men and 702 for women as minimum sample of this study (page 8 line 7-9)

- lower body performance

usually methods for how a test is performed referenced previous study, please include citations for the methods of each tests.

The description of how the test were performed should be improved.

The explanation of how the scoring was done for chair stand test and walking test is made clearer so that it become easier to understand. Please give citation to the scoring system (the quartile or table for scoring).

- Hand grip strengths

Please explain the methods to perform the hand grip strength was measured and give citation

- Lung function

Please state the measuring unit for peak flow meter

- Functional limitations

what questionnaire were used for this measurement? Please give citation to the questionnaire.

- 15-year mortality follow-up

please explain how did you handle with missing data or lost to follow up

- potential confounders

please include citation for the mentioned potential confounders (page 9 line 53-39)

- statistical analysis

please explain the test that you used for data distribution test (page 10 line 29)

Please explain the purpose of the second step (page 10 line33-36)

On the third step, how was the tertiles were obtained? (page 10 line 38-43)
Page 10 line 54-56: "one model adjusted for age and gender (If no interaction was present)" how about when interaction was present.

In the result section in table 4, two models were presented for each gender, please explain the methodology in methods section.

Comments for Result

- Note about data presentation (Page 12 line 54-55) should be included in methods section

- According to the method section, only those with p<0.1 needs analysis with stratification for sex, which means that those with no interaction did not need stratification. Please justify why at the end all measures were further analysis were stratified by sex. (page 15 line 1-5)

- Please mention the statistical value of each result in the last paragraph (page 15 line 35-45)

You may want to highlight the result that Lower body performance is better predictor for woman.

Typo in page 15 line 22 should be HR

Some explanations were unclear Please explain what is model 1 and what is model 2. Please highlight the difference between results in model 1 and model 2 for both men and woman.

- Table 3 and 4:

the notes should be incorporated into the table for easier reading. For example: lower body performance (0-12), men teritel 1 (0-7), tertile 2 (8-9), tertile 3 (10-12), etc.

please explain in the text how did those confounders in model 2 were considered relevant to be included in the model.

- figure 1 and 2: please explain what di you mean by separate model and combined model

Comments for Discussion

Please describe the relevant confounders on page 15 line 57

Page 16 line 10-12 "these remaining as the only significant predictors…” please confirm what did it remain from (i.e. remains after adjusting to what factors?

Please explain how do the peak flow with least correlation with the others turns out to contribute the most in predicting mortality (page 16 line 20-25)
Page 16 line 38-43: Excellent! you pointed out the importance of your study (difference observed for men and women) Please highlight this and elaborate more.

Page 17 line 3-9: please explain how grip strength may relate to the mortality.

Page 17 line 16-25: very good! You have explain well hoe peak flow may relate to mortality.

About the strength of your study: Don't forget to add the comparison between genders as one of your strength (page 17 line 38-39)

About the limitation of your study: Pease mention the limitation related to the bias of a retrospective cohort study. (page 17 line 43-45)

Future study (page 17 line 55-59): future study may be done to developed scoring system to predict mortality from your findings.

Overall, the discussion part contains important information but the information seems scattered. My suggestion is for the discussion to focus first on comparing the prediction values of the measures in men vs women (which I think is one of the most important finding in the study). Then, the discussion is followed by discussing the result of each measures; Group the information (comparison of your result vs previous result) according to each measures (e.g. one paragraph about each peak flow, lower body performance, hand grip strength and self-reported functional limitation).

Comments for Conclusion

The first sentence contained several grammatical errors, please apply some correction.

What did you mean by "relative contribution model"

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 recommend additional statistical review

Quality of written English
Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited

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 manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-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.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal