

## **Reviewer's report**

**Title:** Association between traditional cardiovascular risk factors and mortality in the oldest old: untangling the role of frailty

**Version: 0 Date:** 14 Jun 2017

**Reviewer:** Fang Yang

### **Reviewer's report:**

It is a very interesting study that examined the effect of frailty on the association between traditional cardiovascular risk factors and mortality in the oldest old. Results show that no cardiovascular risk factor was associated with mortality in the study population, and frailty was a strong risk factor for mortality. The study suggests that it would be more important to look at frailty rather than traditional cardiovascular risk factor when examining mortality in the oldest old. However, revisions are needed to improve the quality of the manuscript.

### **Introduction**

Overall the introduction is quite weak and lacks some important justification.

1. Lines 3-10. The authors claim the importance of examining cardiovascular disease by stating that cardiovascular disease is a highly prevalent,....the leading contributor to overall burden of disease in older people. It would provide a clearer picture of the cardiovascular diseases in their country if they provide relevant latest statistics.
2. Lines 22-30. The authors tried to explain why the association between classical cardiovascular risk factors and mortality is lost or even inverted in the oldest old and then introduce the purpose of the study, that is, examining the role of frailty. It reads to me that the justification is rather weak, and it is very difficult for the audience to understand the logic. The authors need to provide a stronger justification here to talk about why examining the role of frailty could possible explain the absence or the negative of the role of cardiovascular risk factors in the oldest old. Otherwise, it is very difficult to follow the logic.

### **Method**

Elder patients may report fatigue and this could influence the quality of survey and results, if they are asked to fill out a too long survey. I notice that this study used three different assessment

of frailty. It is very important to explain the purpose of doing this way in the method part or the part where they first mentioned the three models. Although they talked about the purpose of using three different models in the discussion, it would be better to do so in the method part and explain the strength by doing so.

Participants were considered robust if they were not frail according to all three models. If so, the criterion for "robust" participants is much stricter. However, in the literature most studies define robust or frail elderly based on only one model. I'd like the authors to discuss how the results using such a definition of robust or frail elderly based on three models would be different from those if they use only one frailty model, and how such a method would contribute to the literature.

## Discussion

The results are very clearly stated that no traditional cardiovascular risk factors predict mortality, instead frailty is a significant predictor. It would be great to provide possible explanations for such findings, and discuss implications for future research and intervention. Such discussions are very important.

## Minor issue

1. The paper used many multiple brackets, e.g., (xxx,(xxx)). Please use [xxx(xxx)], or {xxx[xxx(xxx)]}.
2. primary and secondary prevention. I can understand that primary prevention means patients without cardiovascular disease, and secondary prevention means those with cardiovascular diseases. Not sure if it is a routine to use this way. Or it would be better to use "patients with/without cardiovascular disease" in the text.

**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.

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

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