Reviewer's report

Title: Operationalizing Frailty among Older Residents of Assisted Living Facilities.

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Reviewer: Nader Fallah

Reviewer's report:

Comments to the authors:

1- This is well-written manuscript complying with all standards of the BMC Geriatric.

2- Because several measures of frailty are available, I would like to suggest keep them as they are, for prevent any confusion, I think it is better to use frailty phenotype for Linda Fried model, Frailty Index for Mitnitski/Rockwood model and so on. Therefore I recommend using “phenotype frailty “term instead of “frailty index”.

3- The authors used phenotype frailty (proposed by Linda Fried) and its modification (namely Frailty-absolute and Frailty-relative), although they explained them in RESULTS, but it should be define more clearly in METHODS section as well.

4- Page 9 Analysis: The authors explained about modeling with “generalize linear models” but is not clear which type of generalized linear model they used (logistic regression, Poisson regression, etc). Moreover they mentioned about random effect model that they applied, but their explanation on page 12 is not clear.

5- In Table 3, separation of death and hospitalization and put similar result of each model in the same line can be useful. (Optional)

6- In this paper authors compared Frailty-absolute and Frailty-relative in table 4 and concluded that frailty doesn’t have enough power to increase AUC values, but it is not clear AUC is the best index for this purpose. Surprisingly the modified index (Frailty-relative) works worse than Frailty-absolute. It seems when data come from very frail people (AL) some ceiling effect can happen and this type of modeling might be inappropriate.

7- It would be useful to compare the results obtained with the frailty index (Mitnitski/Rockwood model) to see how it can improve model prediction.

8- In discussion they did not discuses about other available approach such as Frailty Index” or “Clinical Frailty Scale”.


9. The limitations of the study should be clearly discussed. It is also necessary to discuss advantages and disadvantages of the each frailty model.

10. I would like to see more explanation about how they frailty modification was choose and used, especially more technical detail of cut points. In general, there is a problem with effects of many continuous variables such as age or sex issue. Consequently a naive percentile cutpoint might not be the best solution.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.