Reviewer's report

Title: The frail older person does not exist: development of frailty profiles with latent class analysis

Version: 1 Date: 30 Jan 2018

Reviewer: Elsa Dent

Reviewer's report:

Paper: "The frail older person does not exist: distinguishing subpopulations of frail older persons with latent class analysis" This paper identified six different sub-classifications of frailty, and concluded that frailty should be based on (a combination of) dimensions rather than one dichotomy of frail/non-frail, or on frailty scores. A latent class analysis was performed, as well as focus group analysis.

MAJOR COMMENTS
1. The paper is confusing. The main issue is that the word "subpopulation" in English refers to an identifiable fraction or subdivision of a population. Thus, when you use the term "subpopulations of frail older persons" it refers to a subdivision of older people with frailty. However, in your paper, you have subdivided the entire population of people aged over 60 years, and not just the population of frail older persons as per what your paper describes. That is, your study is not looking at distinguishing subpopulations of older people with frailty; it is looking at distinguishing subpopulations of older people into frailty classifications. Therefore, I would suggest changing the word "subpopulations" to a more appropriate word, or reworking your paper so that this confusion in terminology is ironed out. The phrase you have coined in your introduction section, "frailty taxonomy" is actually a very good phrase to replace the term "subpopulations", and may fit well into your title too.
2. The introduction is researched well. However, your discussion section needs to compare and contrast your results with the literature. There are other studies on frailty that have used latent class analyses (and which are quite similar to your study) and it is suggested that you cite these.
3. What is unique about your study? In its current form, your paper does not appear to add much to the literature, and you have not highlighted why your study is needed.
4. What are the clinical and research implications of your study? Will anyone use your frailty types? If so, who? General Practitioners? Geriatricians? Epidemiologists? In your introduction you allude to integrated care not working for frail older people, perhaps because older people with frailty are grouped together as one homogenous group. This is the type of information that your discussion section urgently needs - eg I would suggest cutting this information out of your introduction and adding it to your discussion section.
5. Your results and discussion sections are confusing when you talk about "subpopulations A,B,C,D,E,F". To make these sections much more clear, can you refer to these groups/classifications/phenotypes as per the names you have given them in your methods section (Table 2). Eg "As for the Multi-Frail" group" (page 7, line 49). This would save for a lot of page flicking back and forwards to the Table to work out which group you are talking about.

MINOR COMMENTS
1. Can you change the title? It is slightly misleading: many academics and clinicians (including geriatricians) actually do not believe in the concept of frailty at all. The title only makes sense once you read the discussion section.
2. Can you use the phrase "older people with frailty", "older persons with frailty" or similar, rather than "frail older persons". The reason: in many countries, it is important not to label a person as frail, but rather acknowledge that they are still a person, yet happen to be...
3. Rather than the term "extremely frail", can you use the standard term in the literature, which is "severely frail" (eg in your abstract and throughout your paper).

4. Can you state what the subpopulations of frailty are in your abstract? This is priority information that needs to be in your abstract in order for it to be clearer.

5. Abstract: can you state the percentage of male/female in your paper?

6. Introduction: please keep your language formal (eg the word "real" is not formal in the context you have used it on page 3, line 21).

7. Can you use consistent terminology for the reporting of Standard Deviation? (eg lines 14 and lines 25 on page 6 are different). The international modern standard is mean (SD) = x (y).

8. Page 8, Discussion section: lines 33-35 are good, and really adds weight to the argument in your discussion section.

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:

Needs some language corrections before being published

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