Reviewer’s report

Title: Assessing frailty in community-dwelling older people: a systematic review of the psychometric properties of the frailty index

Version: 1 Date: 21 August 2013

Reviewer: Olga Theou

Reviewer’s report:

This is an interesting study on a rapidly growing body of research in the areas of frailty and aging. This manuscript is a systematic review on the psychometric properties of the frailty index. As such, it would be of interest to researchers and clinicians. Strengths of this study are the considerable amount of detailed work and the careful preparation of the manuscript. The methodology is well described and limitations are clearly stated. However, a number of points should be clarified by the authors.

Major comment

1) Overall it is not clear to me what the main purpose of this study was. There are some inconsistencies between the title, research question, and analysis. If the reader just looks at the title he/she will think the focus of the paper will be in community-dwelling older adults (the studies that you call “research studies”) and would expect other studies such as those using routine care data to be excluded. The intro focuses on primary care whereas in the results section the primary care data is only briefly mentioned. For clarity purposed it may have been easier to exclude the primary care data study (and possible home care studies) and focus only in community-dwelling older adults. In the discussion authors can talk about the possibility of using this tool in primary care and highlight this study there. It would also have been really nice if the authors would not have excluded studies based on the setting; this would have been a great summary of all the frailty index studies and would identify gaps where more research needs to be done (I understand that this was beyond the scope of this systematic review).

2) The authors need to tone town their statement about the difference between primary care vs research based studies. If only one study exists then the conclusion is that there is not enough evidence and not that primary care is different. In addition, in your results you mentioned that the rate of increase with age is different in the primary care study with a much lower score. This comparison is not possible since you are comparing a linear slope with logarithmic slopes (the ones reported in other studies). You need to calculate the logarithmic slope of your data in order to compare. With some briefly calculation looking at the figure 1 of your primary care data paper the logarithmic slope is around 0.03 which is similar to what other studies have shown. If this is true then actually the findings of this study are very similar to the other studies however I still believe that there is not enough evidence to support this comparison.
3) The section “3.4.3. Responsiveness, utility and interpretability” seems confusing. Especially the utility and interpretability part of it which is not really discussed. You cannot really conclude about how the frailty index can be used in clinical settings and what it means there when only one of the included studies was in clinical settings. The only thing that they can conclude is again that more studies need to be done in primary care settings in order to talk about “utility and interpretability” in this setting.

4) In your discussion you mentioned many studies which reported FI changes which seems like evidence for “responsiveness” to me. Just because they did not compare the change in FI scores with other instruments does not mean that they did not examine the responsiveness of the FI. I would suggest including these studies in your review.

5) In addition, including the studies that measured frailty using comprehensive geriatric assessments would have improve this systematic review especially if you want to focus on routine care. For example the Davis et al. 2011 paper included a frailty index based on comprehensive geriatric assessment using the Canadian Study on Health and Aging. This study does not look very different than those you included.

Minor Comments
1) You mention that one of the exclusion criteria is to exclude people from nursing homes but then you mention that “Ten studies were population-based and used a representative sample of independently living or institutionalized older people” and “and two studies focused specifically on home-care clients or older people in assisted living facilities”. Please clarify

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.