Reviewer's report

Title: The predictive validity of three self-report screening instruments for identifying frail older people in the community

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Reviewer: James Graham

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Identifying frailty in community-dwelling older adults has been and is indeed a popular pursuit. Yet, the ever-growing literature on this topic, has led to little certainty. The objectives and approach in this study are both reasonable and clearly described. Unfortunately, the results are not too interesting and likewise do not bring us any closer to a consensus. However, the authors do an excellent job of acknowledging the relatively poor predictive ability of the three screening tools. Typically, in our pursuit to show (statistical and/or clinical) significance, we tend to over interpret our results. This was not done here. Given the journal's policy to emphasize clarity and sound methodology more than projected interest levels, I believe this article fits these criteria pending the following two revisions.

Major Compulsory Revisions:

1. Screening suggests divergence in actions based on the results, but with frailty there is no definitive next step or clinical pathway. There is mention that screening may be followed by extensive assessments, but this simply extends and hopefully refines the classification process with no explicit clinical decisions dependent upon the results. The last paragraph in the Discussion seems to contain the ‘take home’ message and identifies one potential consequence of excessive false positives, but this whole concept should be expanded and improved (i.e. clarified). Comparing / contrasting the potential consequences (costs or risks) associated with both misclassifications (false positives and false negatives) would greatly improve the implications of this article. Specifically, this information would allow clinicians / researchers to better weight the diagnostic attributes (e.g. sensitivity and specificity) and choose the measure that best meets their individual goals.

2. The prevalence values of frailty across the three instruments (40-59%) are many fold higher than the values reported in previous studies using established frailty measures in community-dwelling older adults. This brings several questions to mind; e.g. the construct validity of the screening tools, the choice of cut-points for classifying frailty, etc. At the very least these differences need to be acknowledged and discussed.

Minor Essential Revisions:

3. Comment on sensitivity analysis to describe differences in models with missing vs. imputed values.
4. Include summary of differences / similarities in participants and non-participants for generalization and possibly interpretation purposes.

5. The authors state that “All instruments perform best at their proposed cut off points.” It is not clear where the data are that could lead to this conclusion.

6. Frailty prevalence is slightly lower at T2 compared to T1 for all 3 measures. I realize that people are missing from T2, but frailty was not universally more prevalent among T2 non-responders, which was the case for the observed decreases in disability across the different GARS scales. Comment on the stability (or lack thereof) of the frailty indicators within people over the year.

Discretionary Revisions:

7. Second and third sentences in paragraph describing the TFI are unnecessary and confusing. I suggest deleting them and revising the next sentence; e.g. “The frailty subscale of the TFI contains 15 items…”

8. I’m not sure of the relevance in reporting the AUCs for the ROC curves when using the dichotomous scores from the screening measures (independent variables). That indicator is better reserved for numerical predictors, and I assume the previous articles validating the instruments and determining the cut-points presented that information. For the current purposes, simply reporting overall accuracy of each measure for the different outcomes would be just as informative.

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

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I declare that I have no competing interests.