Reviewer's report

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

Version: 1 Date: 30 November 2009

Reviewer: Lisa Lix

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Required Compulsory Revisions

1. The authors must provide more detail about missing responses and the potential impact of missing data on estimates of internal consistency, agreement, and prevalence of frailty. For example, in the Discussion section, the authors note that the frailty prevalence estimate was 67% instead of 59% if non-respondents were considered at risk. What were the characteristics of non-respondents and the difference in characteristics between respondents and non-respondents. Furthermore, the single imputation strategy that was adopted will result in under-estimation of the variability in the population parameters. The authors should adopt a multiple imputation strategy for their analyses.

2. The use of item response theory to evaluate individual questions is an important step in the development of psychometrically sound instruments. Why was this method not adopted in the present study?

3. The Kruskal-Wallis test appears to be used incorrectly. On page 10, the authors report that this test (along with the Mann-Whitney U test) was used to conduct pairwise comparisons of frailty scores. However, the Kruskal-Wallis test produces an omnibus test of equality of the distribution of scores for three or more groups. The authors should clarify the method used to conduct analyses of group differences.

4. In Table 3, the percentages that are reported beside each of the response categories should be removed because they repeat information that is already provided in Table 1. As well, in Table 3, the authors should use a different method to report statistical significance. For each group comparison that was conducted, the test statistic value and p-value should be reported for each frailty instrument. For age, education, and income, the symbols * and ** could be erroneous if the Kruskal-Wallis test was used (see my note above) to conduct omnibus tests.

5. Report confidence intervals (i.e., 99% confidence intervals) for the Spearman rank correlations in Table 2.

Minor Essential Revisions

6. The Groningen Frailty Indicator, as described in Appendix 1, is written from a third-person perspective rather than a first-person perspective. In this study, were
the items reworded to reflect a first-person perspective, consistent with the Tilburg Frailty Indicator and the Sherbrooke Postal Questionnaire? If not, provide a rationale why the same perspective was not used.

7. In Table 3, all numbers should use a decimal point, rather than a comma, to separate the tenths position from the integer position.

8. The authors should provide information about the geographic location of residence (e.g., urban, rural) of study participants.

9. In Table 3, the Sherbrooke Postal Questionnaire results in a higher score for males than for females, while the converse is true for the Groningen Frailty Indicator and the Tilburg Frailty Indicator. The authors should provide some explanation for this discrepant finding.

10. In the Discussion section, the authors repeat some of the findings already reported in the Results section. This section should be limited to an interpretation of the study findings and a discussion of the strengths and limitations of the research.

Discretionary Revisions
11. While Cronbach’s alpha will produce the same result as the Kuder-Richardson Formula 20 for evaluating internal consistency, this may not be known to all readers. Some may mistakenly believe that Cronbach’s alpha is not an appropriate choice for dichotomous responses. An appropriate reference should be provided about their equivalence.

Level of interest: An article of limited interest
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 not competing interests.