Reviewer’s report

Title: Reliability of mobility measures in older medical patients with cognitive impairment

Version: 0 Date: 08 Sep 2018

Reviewer: Ian Cameron

Reviewer's report:

This is an interesting and important study that has been well conducted. The results are clinically useful and will assist with the mobilization and rehabilitation of older people with cognitive impairment. My comments are relatively minor in nature.

The issues with fluctuations in status of the participants are dealt with reasonably well by conducting the assessments on a Saturday. On this day there should be fewer factors operating that might increase fatigue. However, the section of the paper describing this is a little unclear and the authors should confirm this.

The participants also have been asked about stability of their status. The reliability of this in a cognitively impaired population is not known.

The study participants are expected to vary to some extent across a day due to biological (and probably psychological and social) factors and this will affect interpretation of the data. This will negatively impact reliability.

Some of the observations are more important than others. The most important issues are likely to detect group or individual changes over time. However, using these types of measurements to assess aspects of sarcopenia and / or frailty in older people who are hospitalized and unwell should not be undertaken because this is not their usual or future state.

Some other aspects are of interest. Are there differences in reliability of the measures between women and men? In theory women may be operating at closer to maximum capacity and therefore their data might be associated with lower reliability.

Minor issues
P13 Line 13 "There was no considerable variance due to systematic differences over time in any assessment except for the 2-minute walk test" - the meaning of this statement is not clear

What is the time between the cognitive assessments and the reliability testing? It seemed that the cognitive assessments had been conducted at another time. This is an issue because cognitive function will be fluctuating in a number of participants.
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 am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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