Reviewer's report

Title: The minimal clinically important difference of six-minute walk in Asian older adults

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Reviewer: Torunn Askim

Reviewer's report:

Dear Authors

This is a report of a study using data from a randomised controlled trial to assess the minimal clinical important difference of 6 minute walk distance in a frail old Asian population. There are several concerns regarding this manuscript that need to be addressed before the paper is accepted for publication in BMC geriatrics.

Major revision:

1. The research question is not very original in itself as several studies have assessed the MCID of 6MWD earlier. The authors give reference to two of these previous studies but have not mentioned a third study by Gremeaux et al, published in Archives of Rehabilitation Medicine in April 2011. This study should also be added as a reference to the Introduction. However, the MCID in a frail old Asian population is not investigated earlier and could be of interest to its field.

2. The aim is to 'determine the MCID for 6MWD from a modified 6-minute walk test protocol in moderately frail older adults with a fear of falling.' The phrase 'modified 6-minute walk test' is a bit confusing. If the only modification is the 10 versus 15 metres walking distance it would be better to not mention the modification in the aim but describe the test protocol in detail in the methods section. If you have done other modifications, please explain and revise the text accordingly. The aim should also include 'Asian older adults' as this is the specific population under investigation.

3. The definition of 6 minute walk distance (6MWD) is rather unclear. How does the 6MWD differ from the 6 minute walk test? And, how is the modified 6-minute walk test protocol defined? This issue need to be clarified.

It is also unclear to me how and when the GROC was administered. I assume that you assessed the patients on a range of different outcome measures in the RCT. Was the GROC administered in close relation to the 6MWD or not? How did you ensure that the included patient gave their answer in relation to their change in walking distance and not for example in relation to their change in quality of life?

Please describe in detail the test protocol applied in the Methods section.
4. Another weakness is the poor report of change in outcome measures from before to after the intervention period. Did a real change occur or not? What is the actual distance walked at baseline and at follow up? These results should be reported either in a separate figure or in a table to help interpretation of the results.

5. A mean change of 35 metres is reported. Was this a statistical significant difference? Did the change exceed the measurement error for the 6MWD in this population? It is recommended that calculation of MCID is based on both an anchor-based and distribution based method. It will strengthen this paper significantly if the authors add a distribution-based method, such as SEM or effect size to their analyses.

6. The MCID results need to be discussed against the measurement error reported for 6MWD in other studies. The results also need to be discussed against the actual distance walked. It is likely that MCID will change along the scale of 6MWD. Hence, the MCID will be different in patients/populations with a walking distance of 300 metres compared to patients with a walking distance of 600 metres.

7. The MCID found in the present study is the smallest MCID reported in any population so far. The reliability and validity of this result should be more thoroughly discussed. Assumable, the Asian people have a lower body height compared to western populations and consequently a shorter walking distance, which again could be a possible explanation of the small MCID. BMI, which includes height, is reported so it should be easy to add body height to the patient characteristics to help interpretation of the results.

8. This study was conducted in relation to a randomised controlled trial and not primarily designed to answer the present research question. This issue should also be listed as a limitation of the study and suggestions for an even more optimal study design should be proposed.

9. Please also add a reference to the statement; ‘…other definitions of frailty exist’ in the last paragraph on page 8.

10. The relationship to the randomised controlled trial is rather unclear. Are the results from the RCT already published? The authors only give reference to the protocol. It is not sound to publish the results from one of the outcome measures (6MWD) before the main results from the trial are published. It is also unclear whether you included patients randomised to one or both groups. More details about the intervention should also be added to the Methods section. These issues need further clarification.

Minor revision:

11. In the title the term ‘6 minute walk’ is used. Please be uniform and use the same term as in the rest of the manuscript (6 minute walk distance or 6 minute walk test).
12. In the Methods of the abstract, it is stated that ‘Patients who completed the trial rated the intervention efficacy on the GROC’. This is not in line with information given in the full text. Please also see my previous comment on the administration of GROC.

I hope these comments will help in your further work with the manuscript.

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

**Quality of written English:** Needs some language corrections before being published

**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