Reviewer’s report

Title: Age independency of mobility decrease assessed using the Locomotive Syndrome Risk Test in elderly with disability: a cross-sectional study

Version: 0 Date: 14 Jul 2017

Reviewer: Gerd Ahlström

Reviewer’s report:

Thank you so much for the opportunity to review this manuscript. This study is about a vulnerable group of geriatric patients and therefore is the study relevant for BMC Geriatrics.

The three used measurements on lower extremity mobility are well known both from clinical and scientific perspective. This is a strength in the study. Disability is defined as being certified as "requiring care" according the LTCI system in Japan. This means the two sub-groups; lighter (support-level) and heavier (care-level) of long-term care. However, some main issues or questions arise before this study is a useful contribution to the already existing knowledge in the international literature about the mobility decline among disabled elderly;

- How can the control group be considered as having health when they were selected in connection with a medical check-up at a medical center?

- The authors need to describe how the examination was conducted, which resulted in no specific movement disorders among the persons in the healthy group? Which data is this based on? Who or how many done the examination? The authors need to explain this in detail.

- Which criteria have been used in the selection of the relatively small group of elderly with disability (n = 135) compared with a relatively large group of "healthy individuals" (n = 1,469). Has power analysis been made before decision of the size of the study groups? Are these groups convenience sampling?

- The authors do not report about the diagnoses or sociodemographic characteristics in the study groups. Could it be that the care need in the elderly group do not depend on the nature of the disease? Several other reason may exists and need to be investigated. One example could be elderly who live alone and who do not have relatives that can take care of them. This example means that one confounder can be whether they have significant others who is informal caregivers or not. Investigation of the characteristics of the two study groups is necessary in order to draw valid conclusions from the results and to answer the aim of the study.

- During how long time was the retrospective observation ongoing?
- The author need to clarify the reason of interaction test between the "healthy group" and elderly group. Background to this statistic analysis should be better explained in the study.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

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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