Reviewer’s report

Title: Poor condition on admission does not ascertain stroke rehabilitation outcome of geriatric patients: results of a cluster analysis

Version: 2 Date: 12 July 2012

Reviewer: Tinne Dilles

Reviewer’s report:

Dear authors

With interest I have read your manuscript. It took me a while to get a clear image of the direction it was going. The title and the abstract made me expect something different of the main document than in actually is. I do believe that the paper can be improved a lot before publication and I hope my comments and advises are helpful.

Major Compulsory Revisions

1) When I read the title, I did not know what to expect from the article. Why would poor condition on admission ascertain stroke rehabilitation? When I went on, reading the abstract, I was confused. Isn’t it normal to have patients in good and poor condition on admission? One of the objectives is to investigate how subgroups respond after admission, yet, respond to what? Another objective was to investigate differences between patients who were discharged to independent living situation and nursing homes (not specified), yet, differences in what?

It is advisable to choose one, clear aim, and to adjust the manuscript, writing it to give an answer to that aim. Cluster analysis, dividing the population in two groups, can be considered as a means, not a goal.

2) Background:

It is advisable to evaluate the relevance of certain parts of the background, when the aim is clarified. Why are the consequences for relatives important in this context? You mention rehabilitation centres and SNFs as options for geriatric stroke patients to rehabilitate. Can you tell a little bit more about the rehabilitation centres and why these centres are not part of your research? When reading the determinants of rehabilitation outcome after stroke, I hoped you had investigated these determinants (comorbidity, therapy intensity, ...). Do you have data on these factors to compare the impact in both groups on discharge? That would be very interesting.

3) Results

In the results section, you mention a total 84 patients had been discharged to an independent/assisted-living situation and 43 to LTC. In Table 2 these data are different: for DILS: 28+60=88, for LTC: 24+15=39
4) Cluster analysis was performed to divide the population into groups based on their condition on admission. Why did you include the factors age and sex in the cluster analysis? Or were these factors not included in the analysis? If they were not included, please make a clear distinction in table 1 and explain in the methods section.

5) As a reader you need to search very hard into the results of the second table, to try to find an answer to the research questions. This can be improved by
- clarifying the names of the variables and clusters in the table
(for example 'walking ability' i.s.o. FAC)
- giving the differences of differences scores. For example: calculate the %difference between admission and discharge score in cluster one and the % difference between admission and discharge score in cluster two. This makes it easier for readers to interpret. Which differences you calculate, should be adjusted to the aim. Make sure the results required to answer the research question are clearly stated.

Minor essential revisions
6) details on stroke/ pathology are not demographic data
7) ADL and functional status measured by the BI are both used. If I have understood correctly, ADL is not measured, only functional status.
8) In the statistical analysis section, you mention baseline data on cognition, aphasia and swallowing. How were these data collected?
9) Background section: Therefor, the purpose of rehabilitation IS not... (word IS is missing)
10) add a separate table of the characteristics of the population

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

**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 no competing interests