Reviewer's report

Title: Singapore Tele-technology Aided Rehabilitation in Stroke (STARS) trial: Protocol of a Randomized Clinical Trial on Tele-rehabilitation for stroke patients

Version: 3

Date: 30 April 2015

Reviewer: Charlotte Ytterberg

Reviewer's report:

- Minor Essential Revisions
  1. Methods, Inclusion criteria: Inclusion criteria include recent stroke defined as "stroke symptoms". I suggest changing this to recent "stroke diagnosis" as defined in the preceding paragraph. It is also unclear why age equal to or below 40 was an inclusion criteria, I suggest that this criteria is omitted.
  2. Inclusion criteria 7; living in the community before discharge. Should this be changed into living in the community before stroke?
  3. Figure 1: Baseline assessments are performed both after randomization and at 3 months. I suggest omitting the word "baseline" at 3 months.
  4. Table 1: The abbreviation COPD should be altered to Chronic obstructive pulmonary disease

- Major Compulsory Revisions
  1. Background, fourth paragraph: The following statement needs to be supplied with a reference: "Furthermore, home rehabilitation is less efficient than centre-based rehabilitation". Are the authors referring to cost-efficiency? There are several studies showing that home rehabilitation is equally efficient as inpatient rehabilitation but that it may be more expensive.
  2. Background, fifth paragraph: "Tele-rehabilitation .... encourages rehabilitation within the patient's natural environment" This is true but the exercises in the tele-rehabilitation intervention do not seem to make use of the environment or to be individualized to the patient's environment as was the case in the study that the authors refer to in reference 7 by Sanford et al. The authors may want to clarify how they plan to take advantage of the benefits of the home environment.
  3. Background, sixth paragraph: The study hypothesis is that the Tele-rehabilitation intervention will result in greater functional recovery compared to usual care. The authors need to consider how they define "functional recovery" and whether it is operationalised by the assessments.
  4. Methods: General concern: Have the procedures, interventions and assessments been tested in a pilot study as is recommended before the evaluations of effects in a RCT?
  5. Methods, Study design: Participants will be randomized once they are discharged from the hospital but it is not clear at what stage of the rehabilitation
process this is and how long after stroke, at discharge from the acute stroke unit or from inpatient rehabilitation? This needs clarification.

6. Primary outcome is the Jette Late Life Functional and Disability Instrument which measures social activity participation in life tasks. The authors need to motivate why this instrument was chosen as the primary outcome. The exercises in the intervention seem to focus mainly on reducing impairments and it is not clear how potential effects will be transferred to activities and participation. Extensive evidence shows that the patient gets better at what they train to do and that transfer of effects to other areas are often lacking.

7. Methods, Participant recruitment: Some additional information is needed on the two sites. Are the participants recruited from acute stroke unit or from rehabilitation hospitals or both?

8. Methods, Screening process: Will participants receive both written and oral information about the study?

9. Methods, Standardization: The authors need to be consistent in their use of the terms recruiter, assessor, research assistant etc and their different obligations. For example, will eligibility be assessed by the recruiters or by the tele-therapists?

10. Methods, Process measures: Participants will be instructed to record the time they spend doing unsupervised and supervised exercises. The term exercise can have many different meanings among individuals and will need to be defined to the participants to ensure valid data.

11. Methods, Primary and Secondary outcome variables: The rationale for the selection of outcome variables is unclear. Why were these assessments chosen and are they likely to capture plausible effects of the intervention? As I have mentioned previously, people usually get better at what they actually do and since the exercises described in Table 2 are mainly impairment focused it is unclear why assessments of activity were chosen.

12. Methods, Statistical Analysis: Why was a difference in mean scores of 8 chosen?

Level of interest: An article of importance in its field

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