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: 14 April 2015

Reviewer: denise taylor

Reviewer’s report:

Major Compulsory Revisions

L. 183-190. The primary hypothesis is around functional recovery based on LLDFI. Secondary outcomes are: increased time with a therapist, improved balance, enhanced QoL, decreased health service utilisation, reduced caregiver burden, and an evaluation of sustainability of improvements at 6 months. This don’t match the earlier stated (L172) aim to “determine if a novel Tele-rehabilitation intervention can improve participation in rehabilitation and functional recovery of post-stroke patients, and evaluate its cost-effectiveness”.

The inclusion criterion of being able to stand on the unimpaired leg for >4 seconds is likely to exclude a large proportion of people with stroke and ensure a high functioning sample. Why is this criterion being used?

L282-288. Who will be trained in which processes needs to be clarified. As written it appears as if the tele-therapist will be assessing eligibility of participants and obtaining informed consent, as well as participating in the randomisation. These roles need to be clearer.

L299. Randomisation may be better to occur after baseline assessment, not prior to baseline assessment.

Table 1: I am confused by the table. Particularly with the tests mentioned in the 4th quadrant. How were these used, it is not described in the text.

Minor Essential Revisions

The use of the term “tactile data” is misleading, perhaps it would be clearer to use “motion data” or “sensor data”.

Clarify the time since stroke, is it the first 3 months after stroke that the person receives the intervention or is it for 3 months following discharge (unclear from L206-209).

L235-236. One measure is in feet the other in meters. Convert to meters for consistency and clarity.

L456-469. Is there any support for using the LLFDI in people with stroke – any reliability studies published? As this is the primary outcome measure it would be important to determine that it is an appropriate choice.
L.598. The data analysis plan would benefit from more detail. It is rather superficial as it stands.

Discretionary Revisions
L. 144. “Furthermore, home rehabilitation is less efficient than centre-based rehabilitation.” This statement needs further clarification and referencing.

L. 603. It is unclear how the cost-effectiveness evaluation will be completed from the societal perspective, the costing information seems to come from a health service utilisation tool, can the authors clarify that this does collect information from a wider societal perspective?

Figure 1. It wasn't clear to me that assessments of the primary outcome only occurred at the 3 month and the secondary outcomes at the 6 month point. Can this be clarified.

Figures 4,5,6. I'm not sure that all the detail is necessary

**Level of interest:** An article of importance in its field

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

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests