Reviewer's report

Title: Stroke patients’ utilisation of extrinsic feedback from computer-based technology in the home: a realistic evaluation

Version: 2  Date: 22 January 2014

Reviewer: Imre Cikajlo

Reviewer's report:

This paper describes the application of an innovative evaluative methodology to explore the utilisation of feedback for post-stroke upper-limb rehabilitation in the home. Hypothesis: what might work for whom in what circumstances? The manuscript presents the system and the user acceptance methodology very well, in parts also with comprehensive and unnecessary sentences. However, in scientific journal one would expect outcomes and also results of the five week home rehabilitation programme; the clinical outcomes, did the participating subjects had any clinical benefit? The manuscript appears as a user opinion-evaluation description. However, only five people’s experiences were evaluated as case studies which should have been indicated in the title of the manuscript.

Therefore it needs to be clear whether the manuscript is proposing a feasibility of the innovative evaluation method or does the evaluation the applied technology from the SMART project.

Specific Comments:

Abstract: In general the Abstract is too long, with unnecessary sentences, e.g. 1st sentence is not can be removed – the rehabilitation is not only effective but essential in people after stroke.

The Abstract lack of data (how many participants, outcomes,). Even if the manuscript is a 5 case-study presentation, the results section of the abstract should provide results of the findings.

Introduction/background – the description of the Smart system used in the study should be part of the Methodology. Hereby one may miss other similar systems and what novel solution does the SMART introduces. There have been many other telerehabilitation systems introduced, especially in people after the stroke.

Methods:
»a prolonged period«. This expression is not appropriate for the methodology where one may
P6: »mechanisms were included to encourage users to« What mechanism? Please specify.
P9: “This allowed for a new hypothesis”. What new hypothesis? I guess the hypothesis that is provided at the end of the Introduction section?
P9: “The researcher was assisted in the identification of potential participants”. 5 subjects were selected on the basis of inclusion criteria. Out of how many? Who were those “potential participants”?

Table 3: The table should contain names – if possible, use initials only. Expect specific information. How long?

>This was because the SMART system provides the critical feedback instead of the carer.« How did the SMART system provide the critical feedback? I understand, but it needs to be clear in the manuscript what kind of feedback it was; visual, audio, VR, recorded data...

>computer feedback was provided via real-time 3-D images«. Was the subject wearing 3D glasses? How was the 3D effect achieved? Were those real 3D images? Please use accurate information.

Results

P13 »a number of elements« which elements? The results section should contain short and clear information only without explanation.

Discussion

> The on-screen display was sometimes inaccurate« - Inaccurate in what sense? “reliability is essential” What do the authors mean by reliability? Technical functionality? Please be specific.

“Therefore, if therapists are to incorporate technology into their practice, they will require and even expect the technology to be a better alternative to what is currently available to them.” Do the authors have a reference for that – not necessarily that the technical solutions would compete with a human being, but would be a good tool to help and provide more objective results.

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

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.