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Abstract Title: Rehabilitation optimization following a stroke by telerehabilitation combined with video-games

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Introduction

Patients with stroke have difficulty accessing conventional rehabilitation services (Tousignant et al., 2014). Telerehabilitation combined with video games provides a new approach that may counter the accessibility problem and optimize motor recovery even in the chronic phase of the disease. In fact, this therapy allows the patient to practice repeated exercises, at home, without time constraints and regardless of the availability of the physiotherapist.

Objectives

1. To identify barriers and facilitators to using telerehabilitation combined with a video-game by stakeholders for motor recovery following a stroke;
2. To develop knowledge translation strategies.

Methods

A multiple case study, conducted with patients, family members, physiotherapists and managers. The sample size will be determined by the saturation of the data. The intervention consists of the provision of remote rehabilitation services using the combination of a videogame and telerehabilitation system. The intervention should enable the physiotherapist to interact with patients while playing games and to follow their recovery progression through the feedbacks presented in the system. The Reacts application will be used as a telerehabilitation system which allows secure live audiovisual interactions and a video recording. We plan to combine Reacts application with the Jintronix Inc exergame which is specifically designed for the rehabilitation of motor sequelae (upper and lower limb deficits, balance) in patients with stroke. The intervention will be provided by physiotherapists for a period of 2 months. Data collection will be carried out by focus groups and interviews with all the stakeholder groups, one month after the end of the intervention. The analysis will be done using Nvivo, to identify themes which emerge from the data. Knowledge translation activities including the dissemination of findings and implementation of the novel approach will be developed based on the barriers and facilitators identified. These activities include conferences, workshops and identification of a key opinion leader.

Results

The data collected with interviews and focus group will identify the barriers and benefits of this approach and understand how it could be integrated into clinical practice. The activities of knowledge translation would develop practical and conceptual knowledge regarding the use of the system by physiotherapists and patients. The integration of key opinion leaders would help understand and assist technology users and foster organizational engagement in the change process.

Conclusion

This new approach of rehabilitation should contribute to changes in the perception of clinical practice at the individual and organizational level, for the wellbeing of patients with stroke.

References

Tousignant, M., Corriveau, H., Kairy, D., Berg, K., Dubois, M.-F., Gosselin,S.,…Danells, C. (2014). Tai Chi-based exercise program provided via telerehabilitation compared to home visits in a post-stroke population who have returned home without intensive rehabilitation: study protocol for a randomized, non-inferiority clinical trial. *Trials*, *15*, 42–42. https://doi.org/10.1186/1745-6215-15-42

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