The Chinese University of Hong Kong
Department of Biomedical Engineering

Graduate Seminar – MPhil Oral Defence

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Date	:	30 July 2019 (Tuesday)
Time	:	10:00 a.m.
Venue	:	Room 215, William M W Mong Engineering Building (ERB)

Kinect-based Rapid Movement Therapy to Improve Balance in Stroke Survivors

Stroke survivors have higher risks of falling compared to healthy older adults. About 50-75% of individuals with stroke have fallen at least once within 6 months after discharge. With reduced limb control, postural stability and coordination, stroke survivors have impaired balance and increased fall risk. Faster response and movement time may be trained in chronic stroke survivors using a task-specific training to improve their balance recovery ability. Fast response time, being the task trained in addition to ROM, is considered to be one of the most important motor training principles. The objective of this study is to investigate the effectiveness of interactive Rapid Movement Therapy (RMT) on balance compared to conventional balance training in individuals with chronic stroke.

A total of 32 stroke survivors completed the double-blinded randomized clinical trial. All participants received 20 one hour sessions of either rapid movement therapy (RMT, n = 16) or conventional balanced training (CBT, n = 16). Assessments were performed before (PRE) and after (POST) the intervention, and also at 3-month follow-up. Berg Balance Score and Timed-Up and Go test were the primary outcome measure, while secondary outcome measures were composed of Activities Balance Confidence (ABC) Scale, Activities of Daily Living Scale, Fugl-Meyer Assessment as well as "lean-and-release" fall assessment's kinematic measures. Both RMT and CBT balance gave stroke survivors improvements in terms of overall balance performance, motor functioning, and fall risk as reflected in BBS, and FMA. We would like to investigate whether RMT could improve balance for stroke suvivors. The results showed that the RMT has overall balance performance and motor functioning similar to the CBT. RMT could require less human resources with affordable technology.

*** ALL ARE WELCOME ***

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