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Background: As a result of stroke, functional limitations occur and research indicates that free-living walking activity is lower in people after stroke compared to healthy controls. Balance and gait speed are related to walking activity measured in clinical settings. However, the level of free-living walking activity and its contributing factors in ambulatory chronic post stroke people is poorly investigated.

Objective: Evaluate free-living walking activity levels in daily living and to identify factors which are related to free-living walking activity in the chronic phase after stroke.

Methods: In this cross sectional study, 40 participants were an accelerometer for 7 days to measure their level of walking activity. Also, they completed the Berg Balance Scale (BBS) and the Timed-Up and Go test (TUG) for functional balance and the 10 Meter Walk Test (10MWT) to measure gait velocity. Linear regression analyses were performed to investigate a relation between the performance tests and free-living walking activity.

Results: Chronic post stroke people took on average $3114.2 \pm 1955.7$ steps per day, walked $33.1 \pm 18.0$ minutes per day and took $122.4 \pm 60.5$ walking bouts per day. The multivariate analysis showed that only the BBS is a significant predictor for free-living walking activity with an adj R$^2$ of 0.14.

Conclusions: Free-living walking activity levels in ambulatory chronic post stroke people are below those of healthy controls. Furthermore, the BBS is an independent significant predictor for free-living walking activity. Balance should be considered to include in rehabilitation programs to improve walking activity. However, further research is needed to investigate more factors of daily free-living walking activity.

The brain symphony for post-stroke rehabilitation – A pilot randomized controlled study

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Objectives: Music therapy has come a long way in assisting the medical world to improve the condition and quality of life of stroke patients. Research has shown that this is especially effective in supporting stroke patients who suffered from physical to mental disabilities. However, the music played were already pre-set and packaged. Thus, this research aims to explore and compose the best music for effective rehabilitation through studying the effects of music therapy during rehabilitation on post-stroke patients using songs by P. Ramlee. This investigation is divided into three phases: 1) exploring the different composition of music that helps enhance the neuroplasticity of the brain, 2) finding the effect of the music used in phase one on stroke patients during their rehabilitation through augmenting patients brain neuroplasticity by measuring the mean evoke potential (MEP) using Transcranial Magnetic Stimulation (TMS), and 3) comparing the effects of brain neuroplasticity between lesion and non-lesion areas in the patients.

Methods: A cross-over design with music therapy is used on a small sample of 30 participants made out of stroke patients and healthy individuals, whereby the neuroplasticity of their brains are compared and analysed.

Results: The results suggest that the music therapy produces positive changes in neuroplasticity leading to the improvement of the subjects’ motor performance.

Conclusions: With this, it is possible that using P. Ramlee’s songs can accelerate the rehabilitation for post-stroke patients which proves that music therapy has equally significant benefits as an adjuvant therapeutic tool in a wide variety of clinical settings.

Opportunistic oral pathogen among stroke survivors

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Background and aims: Oral hygiene is compromised following stroke and the oral cavity serves as a reservoir for opportunistic pathogens. Poor oral hygiene not only results in oral health problems, but also life-threatening events such as aspiration pneumonia and bacteraemia. Thus, this study aimed to evaluate the effectiveness of an oral health care intervention in decreasing oral opportunistic pathogens in patients after stroke.

Methods: This multicentered randomized controlled trial was conducted among 52 hospitalised stroke patients. The patients were randomized into: i) Test group: a powered toothbrush and antimicrobial gel [1% chlorhexidine gluconate], or ii) Control group: conventional oral care (a manual toothbrush and a standardized toothpaste). Oral rinse specimens of patients were aseptically collected at baseline (before intervention), 3-months and 6-months follow-up. Identification of microbial species for prevalence assessment were performed using selective media. The growth of Staphylococcus aureus, aerobic and facultative anaerobic Gram-negative bacilli (AGNB) and yeast were determined.

Results: More than half of the patients harboured S. aureus (63.5%), anaerobic AGNB (65.4%) and most harboured yeast (88.5%). There were significant decreased in S. aureus (P<0.01) and AGNB (P<0.05) prevalence over time, and from baseline and 6-months (P<0.01 and P<0.05) respectively. There was a significant difference between the prevalence of yeast between the control and test group at 6-months (P<0.05), but no significant difference over time was noted. Candida albicans was the dominant yeast, while Klebsiella pneumonia and Enterobacter sp. were the prominent AGNB that was observed in the study.

Conclusions: A decrease in the prevalence of S. aureus, AGNB and yeast in the intervention group was evident in this study. Oral hygiene intervention is thus, effective in reducing the prevalence of oral opportunistic pathogens among stroke patients.

Outcome of human peripheral nerve repair interventions: A systematic review

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Objectives: Peripheral nerve injury is very common but repair is a challenging medical problem. Road traffic accidents are the most