examine the natural course of change in spatiotemporal gait parameters from the acute phase to 3 months later.

Methods: 71 participants diagnosed with acute ischemic stroke were included within two weeks after stroke. Scandinavian Stroke Scale (SSS), ranging from 0 (worse outcome) to 58 points and Modified Rankin Scale (mRS) ranging from 0 (no symptoms) to 6 points were used to measure stroke severity and dependency at baseline. Walking speed and gait parameters were assessed while hospitalized and 3 months later using a GAITRite® mat at self-preferred gait speed. Changes in gait were assessed using pair-sampled t-tests.

Results: At inclusion, participants had a mean (SD) age of 75.4 (8.1), a mRS of 2.7 (0.8) points, SSS of 52.0 (4.6) points, and an average gait speed of 0.93 (0.32) m/s. We found a significant increase in both velocity 0.17 m/s ($p < 0.000$, 95% CI 11.20, 22.60), step length 6.6 cm ($p < 0.000$, 95% CI 4.50, 8.70), cadence 6.6 steps/minute ($p < 0.000$, 95% CI 3.49, 9.70) and walk ratio 0.02 step length/cad ($p = 0.002$, 95% CI -0.04, -0.01), whereas single support decreased 0.02 sec ($p = 0.002$, 95% CI -0.03, -0.01).

Conclusion: Spatiotemporal gait parameters improved the first three months after stroke, with changes in gait speed considered as a clinical meaningful improvement.

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MULTIDISCIPLINARY CLINICAL REHABILITATION

WHAT INFLUENCES IMPLEMENTATION OF EVIDENCE-BASED PRACTICES IN COGNITIVE REHABILITATION?

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Introduction: Implementation of evidence-based practices in cognitive rehabilitation post-stroke is challenging, as it involves complex and individualized interventions. Further efforts are needed to better understand factors influencing adoption of best practices.

Study objective: To identify facilitators and barriers to the implementation of evidence-based practices in cognitive rehabilitation.

Methods: Two implementation projects were performed with two multidisciplinary teams ($n = 11$ and 14 clinicians). A tailored and multifaceted knowledge translation intervention, using learning tools and interactive workshops, was developed to implement one evidence-based practice chosen by each team. Two weeks following the implementation of the practice, each team participated in a focus group to elicit facilitators and barriers to the adoption of the practice. Analyses were guided by the Consolidated Framework for Implementation Research.

Results: Both teams suggested that the positive learning climate, the practical learning tools, and the opportunities for exchanges with colleagues facilitated the implementation. Engaging all the team in practice improvement was seen as important. Both teams highlighted inner and outer setting constraints limiting their ability to implement the practice including: limited resources, in terms of time and staff, combined with high workload, and complex needs of their clientele. Finally, one team with more clinical experience reported higher self-efficacy and felt the intervention could have focused on more complex clinical scenarios, while the other one expressed a need for further guidance as they implement the new practice.

Conclusion: Implementing evidence-based practices in cognitive rehabilitation is a complex process involving various factors that need to be considered during the intervention planning.

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EVALUATION OF A NOVEL HAND TRAINING DEVICE AND PROGRAM ON MUSCLE PATTERN ACTIVITY FOLLOWING STROKE

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Background & Purpose: Stroke compromises functional characteristics of muscles. Multiple hand function rehabilitation methods have been explored, but none have adequately studied effects on the targeted muscles vs. non-targeted muscles. Selected muscles of stroke survivors affected upper limb were examined during a hand function training program using a novel passive rehabilitation device.

Methods: Eight-participants (three females) attended 18 one-hour sessions over 6 weeks. Functional training characteristics were randomly altered throughout the training process. Direct visual observation of the ongoing task was blocked to enhance proprioceptive inputs to the cerebellum and cortex. EMG was collected both pre- and post-training from eight muscles, while participants grasped the device to a preset resistance, isometrically, for 30-seconds. Root mean square (RMS) values were estimated, and a paired samples Student t-test (alpha = 0.05) was used to estimate differences.

Results: Biceps brachii and anterior deltoid showed significant reduction in EMG-RMS activity ($t_{23} = 2.774$, $p = 0.005$), while no impact was observed in the triceps brachii and posterior deltoid. Distally, flexor pollicis brevis and flexor digitorum superficialis showed significant reduction in the EMG-RMS activity ($t_{23} = 1.973$, $p = 0.03$), while extensor digitorum and first dorsal interosseous muscles did not.

Conclusions: The results suggest that targeted hand function has a positive impact on the corresponding muscles, improving functionality. They also suggest that targeting hand muscles reduces co-contraction of proximal muscles. This pilot study provided promising results; however, further testing on a larger sample is needed in order to generalize these results.

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MULTIDISCIPLINARY CLINICAL REHABILITATION

HOW CAN WE MEASURE COORDINATION AND STABILITY IN STROKE PATIENTS?

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Stroke is a leading cause of disability worldwide. At six months post-stroke patients, 50–70% of patients continue to have upper limb (UL) impairments. The most common problems of the UL are paresis and spasticity leading to residual functional deficits. Higher-order motor control skills such as stability, dexterity and coordination are crucial features of functional movement, that are affected by central nervous system damage. A movement lacking in stability or poorly coordinated is functionally impaired given the unpredictable environment. Although clinical outcome measures cover the domains described by the International Classification of Functioning, no measures specific assess higher-order motor control skills. Recently, new computational approaches have been described to quantify impairments of movement stability (i.e., synergy index) when complex multi-joint movements are performed, such as reaching and multi-muscle whole-body tasks. These methods are based on analysis variability, reflecting how joint movements are combined to stabilize a particular task, e.g., endpoint precision. Stability and coordination of movement can be used to track motor recovery following treatment interventions that are aimed at improving the voluntary control of movement in stroke patients. The knowledge of higher-order motor control skills may help to develop new rehabilitation treatment strategies, leading to a better knowledge of recovery processes.

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ADDRESSING THE BARRIERS PREVENTING GUIDELINE ADHERENCE FOR BLOOD PRESSURE MEASUREMENT ON AN INPATIENT STROKE REHABILITATION WARD

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Background: The complications of hypertension are responsible for 9.4 million deaths across the globe yearly. Although aggressive blood pressure control is cautioned during the acute stages of stroke, stringent control afterwards is needed to curtail morbidity. However, guidelines on proper measurement of blood pressure are not always followed. This can lead to misdiagnosis of hypertension and poor management. A discussion among key members of the administration, physician and nurses identified that the major factor impeding full adherence to the guidelines for blood pressure measurement is lack of time and resources.

Objective: The main objective is to implement change on an inpatient stroke rehabilitation ward to improve adherence to the guidelines.

Methods: Firstly, the percentage of deviation from guidelines will be analyzed from morning blood pressure measurements using automated machines. Secondly, changes will be made to address the identified barriers by adjusting nursing shift change time so that blood pressures will be measured during an overlapping nursing shift, and missing cuff sizes are replaced. Finally, percentages of deviations will be measured again and compared to pre-change deviations. Additionally, the time it takes to measure blood pressures will be taken during scoring of the adherence. This would yield the time it takes before and after the changes have been made.

Results: Pending final data collection and statistical analysis

Conclusion: By addressing the barriers identified, a positive change can be made to improve long-term patient outcomes.

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A KNOWLEDGE TRANSLATION INITIATIVE ON BEST PRACTICES IN COGNITIVE REHABILITATION: IMPACT ON HEALTH PROFESSIONALS' KNOWLEDGE AND BEHAVIORAL INTENTION

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Introduction: The implementation of best practices in cognitive rehabilitation post-stroke is challenging, as it involves complex and individualized interdisciplinary interventions. Further efforts are needed to develop effective knowledge translation interventions to support best practices.