Conclusion: Short-term, goal-directed, robot-assisted arm training is effective for promoting motor recovery of the exercised limb segments after stroke. It improves movement smoothness and facilitates a better coordination between individual joint segments.

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Physiotherapy intervention improves clinical outcomes in patients with Parkinson’s disease

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Background and purpose: Parkinson’s disease (PD) is an incurable and progressive disease. Physiotherapy plays an important role in the nonpharmacological management at all stages of PD. This study aimed to evaluate the effectiveness of a physiotherapy training programme for patients with PD in the Queen Elizabeth Hospital (QEH).

Methods: Twenty-eight patients (9 females and 19 males) who were diagnosed with PD (Hoehn and Yahr Stages 1–3) attending the Special Outpatient Department of QEH were recruited in the study. They received a course of physiotherapy training programme (including gait re-education, strength, cardiovascular, and balance training) two times per week for 6 weeks. Impairment of the disease was measured by the Movement Disorder Society–Unified Parkinson's Disease Rating Scale (MDS-UPDRS) – Part III. Functional mobility and risk of fall were assessed by the timed-up-and-go test (TUG). Self-perceived balance confidence was measured by the Chinese translated Activities-specific Balance Confidence (ABC-C) Scale. Quality of life was determined by the Parkinson’s disease Questionnaire—Standard Chinese Version (PDQ-39).

Evaluation was performed at baseline and at the end of treatment.

Results: Upon completion of the programme, the averaged MDS-UPDRS—Part III score reduced significantly from 13.8 to 11.0 (−20.5%, \(p = 0.047\)). Scores of the TUG reduced from 12.1 seconds to 11.5 seconds (−5.3%), ABC-C scale improved from 77.3 to 83.5 (8.0%), and PDQ-39 reduced from 72.5 to 65.5 (−9.7%) but were not significant.

Conclusion: A physiotherapy training programme for patients with PD in QEH was shown to reduce impairment, improve functional mobility, reduce fall risk, and enhance self-perceived balance confidence. Further studies may demonstrate the long-term effect of physiotherapy in alleviating the symptoms of PD that impact patients’ daily functions.

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Novel intervention for neurological patients with moderate to severe gait dysfunction: A robot-assisted gait training system

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Background and purpose: Gait training plays an important role in restoration of daily activities and enhancement of quality of life, especially for survivors of neurological insults such as stroke, spinal cord injury, traumatic brain injury, cerebral palsy, and multiple sclerosis. With the heavy workload of the public healthcare sector in Hong Kong, it has always been very difficult for physiotherapists to offer gait retraining to patients with moderate to severe neurological disability. This is because gait retraining for such patients is often labour intensive and physically stressful to both physiotherapists and patients. Implementation of a robot-assisted gait training system may fill in the gap by offering more intensive gait retraining to the neurological patients without causing much additional physical stress to both therapists and patients. A single-group pretest–posttest quasieperimental design was developed to evaluate the effectiveness of implementing a robot-assisted gait training system for patients with different kinds of neurological disorders, presenting with moderate to severe gait dysfunction.

Methods: From January 2011 to April 2013, 78 neurological patients with moderate to severe gait dysfunction after stroke, spinal cord injury, traumatic brain injury, or multiple sclerosis had been offered an additional 30–45 minutes of robot-assisted gait training, three times per week for 12 weeks. Outcome measures included Modified Functional Ambulatory Category (MFAC) score, gait speed, walking capacity, spasticity measurement, Berg Balance Scale (BBS), and Modified Barthel Index (MBI). Paired sample t-test (continuous variables) and Wilcoxon signed-ranks test (categorical variables) were used.

Results: The median MFAC improved from 3 ± 1 to 4 ± 1 (\(p = 0.001\)). The gait speed improved by 66.6% (\(p < 0.001\)) and the walking capacity by 48.4% (\(p < 0.001\)). In addition, spasticity reduced by 20% (\(p = 0.036\)), as measured by the passive resistive torque over the hips and knees. The BBS and MBI scores increased by 44.3% (\(p = 0.004\)) and 11.1% (\(p = 0.002\)), respectively.

Conclusion: Robot-assisted gait training is effective in reducing spasticity, improving balance, and reducing disability and gait-related parameters in neurological patients with moderate to severe gait dysfunction.

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Timely physiotherapy work rehabilitation programme for work-injured government employees at an occupational health clinic

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Background and purpose: A timely intervention is crucial for a work-injured worker for the reduction of long-term physical disability and retenion of productive workforce. The First Occupational Health Centre (OHC) for government employees was established at Queen Elizabeth Hospital in June 2011, to provide an immediate intervention to work-injured government employees. Fast-track physiotherapy appointments and tailor-made work rehabilitation training incorporated with specific ergonomic advice are the characteristics of the physiotherapy work rehabilitation programme ("the programme"). Job analysis is performed to identify the injured workers’ occupational work demand. According to their different physical work requirements, an 8-week tailor-made programme with physical reconditioning, job-related functional training, and work simulation training are then devised and provided. The aim of this study was to evaluate the service outcomes of physiotherapy management for work-injured workers at OHC.

Methods: A retrospective study was conducted. Patients who had completed the programme within the period of June 2011–May 2013 were studied. Demographic data were collected. Clinical and functional outcomes, including pain, functional impact, and health-related quality of life, were evaluated. Postdischarge work status was also examined.

Results: One hundred and thirty cases were reviewed. All patients entered the programme within 2–3 days. Forty-five per cent of the cases worked at a medium physical work demand or above. The most commonly injured body parts were back (30%), followed by knee (16%) and ankle (13%). A significant reduction of pain (\(p < 0.001\)) from 5.8 to 1.8 was observed on the Numeric Pain Rating Scale. Functional impact and quality of life improved significantly in terms of pain interference score and Short Form-12 score (\(p < 0.001\)). Upon discharge, all patients resumed full or modified duty.

Conclusion: A timely comprehensive physiotherapy work rehabilitation programme for an injured worker can reduce their work disability and enhance their return-to-work outcomes.

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Evaluation of a return-to-work cognitive-behavioural-based physiotherapy rehabilitation programme for the management of acute back pain

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Background and purpose: Low back pain is a common medical and social problem associated with disability and absence from work. An early and effective intervention is very important to prevent acute low back pain from developing into chronic pain and disability. Effective disability prevention and screening of risk factors are essential for acute back pain patients. The objectives of the study were as follows: (1) to provide effective intervention and management for back pain patients with better...