עורכת: ד"ר מיכל אהרונוביץ, מכללת צפת

אישורים לפרסום התקצירים התקבלו מההוצאות לאור של כתבי העת.

A preliminary investigation of error enhancement of the velocity component in stroke patients' reaching movements.

Ronit Givon-Mayo,[1] **Esther Simons,**[2] **Avi Ohry,**[3,4] **Hana Karpin,**[3] **Sharon Israely,**[5] **Eli Carmel.**[5]

International Journal of Therapy and Rehabilitation 2014;21:160-168.

[1] Faculty of Health Sciences and Biomedical Engineering Department, Ben-Gurion, University of the Negev, Beer-Sheva, Israel.

[2] Department of Neuroscience, Erasmus Medical Center, Rotterdam, The Netherlands.

[3] Reuth Rehabilitation Center. Tel Aviv, Israel.

[4] Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel.

[5] Department of Physical Therapy, Faculty of Social Welfare and Health Sciences, University of Haifa, Israel.

Abstract

Background/aim:
Patients with stroke who are suffering from impaired reaching movement experience insufficient spatial and temporal coordination, affecting upper limb functions and everyday life tasks. This study examines a new robot-assisted rehabilitation method for ameliorating arm reaching movements through velocity error enhancement training. The authors hypothesised that this robot-assisted rehabilitation training may encourage restoration of arm reaching abilities among post-stroke hemiparesis patients.

Methods:
Several clinical and kinematic measures were used to evaluate outcomes. Subjects were assigned either to an experimental group that underwent 5-week treatments with error enhanced forces, or to a control group that received passive treatment. The control group undertook reaching tasks over the same period while they were connected to the robot but without it applying any error enhancement forces to their upper limb. The robotic system was programmed based on previous kinematic data from healthy subjects, so any deviation from the relatively smooth, calculated, optimal trajectory, and velocity profile mean encountered error enhancing external forces.

Results:
The results showed an appreciable effect on smoothness and regularity of movement. After 5 weeks of velocity error enhancement treatment, all subjects in the experimental group displayed movements converging towards their optimal profiles, together with decreased variability in path trajectory. In contrast to the control group, their mean deviation was also significantly reduced. These positive changes in motor control patterns were paralleled by gains in functional capacity, as reflected by the Motor Assessment Scale test results. However, those results should be carefully inspected in regard to small sample size and un-matching of motor performance at the beginning of the trial between groups.

Conclusion:
The study demonstrates the potential of robotic rehabilitation that combines error enhancement and velocity component training to help stroke patients.

Assimilation of the Patient Rights Law and Code of Ethics into Israeli Physical Therapy Services.

Tamar Jacob[1] **and Ilana Zilberstein.**[2]

The Internet Journal of Allied Health Sciences and Practice. April 2014; 12 (2).

[1] Physiotherapy department, Ariel university, Israel.

[2] Physiotherapy geriatric department, Ministry of Health.

Abstract

The ethical conduct of physical therapists is usually based on intuition rather than on theoretical knowledge. This study aimed to examine to what degree rules of ethics anchored in the Patient Rights Law and in the Physical Therapy Code of Ethics in Israel have been assimilated in physical therapy (PT) services. A qualitative study based on personal semi structured interviews with national directors of PT services in Israel was conducted. The directors think that the ethical conduct of physical therapists is based mainly on intuition and on self-perceived ethics rather than on learned principles. In their opinion, the Patient Rights Law and the PT Code of Ethics, as well as the activity of the Ethics Committee of PT, have probably contributed to raising awareness of the need to promote the issue of ethics, but there are still no structured training programs on this topic in any of the Health Maintenance Organizations. (HMOs). Collaboration between the Ethics Committee of PT and representatives of the clinical field and of academe has the potential to advance the knowledge, thinking and discussion on ethics within all the community in all PT facilities. Part of this process is the assimilation of ethical rules in the daily practice of physical therapists.

Do neck kinematics correlate with pain intensity, neck disability or with fear of motion?

Sarig Bahat H, Weiss PL, Sprecher E, Krasovsky A, Laufer Y.

Manual Therapy. 2014;19(3):252-8.

Department of Physical Therapy, Faculty of Social Welfare and Health Sciences, University of Haifa, Israel.

Abstract

Purpose:
This study aimed to investigate the relationship between cervical kinematics and subjective measures, including pain intensity, disability, and fear of motion.

Methods:
Twenty-five patients (19 females, 6 males; mean age 39 ± 12.7 years) with chronic neck pain participated in this cross-sectional study. A customized virtual reality system was employed to evaluate cervical range of motion (ROM) and kinematics, using an interactive game controlled by cervical motion via electromagnetic tracking. Self-reported outcome measures included pain intensity (visual analogue scale); disability (Neck Disability Index); and fear of motion (TAMPA scale of kinesiophobia). Kinematic measures included cervical ROM, mean and peak velocity, and number of velocity peaks (NVP) reflecting smoothness of motion.

Results:
Results showed significant correlations of approximately 0.4–0.6 between ROM and fear of motion, pain intensity, and disability. All 12 kinematic measures were correlated with fear of motion, but only a few were correlated with pain intensity, and with disability.

Conclusions:
The results emphasise fear of motion as a subjective measure primarily correlated with neck kinematics, including range, velocity, and smoothness of cervical motion. The level of neck disability was found to be partly related to ROM or to other kinematic impairments. However, ROM by itself remains a valid measure related to pain intensity and to fear of motion in patients with chronic neck pain. All correlations demonstrated were moderate, indicating that these measures involve other factors in need of further research.