

Effects of dual-channel functional electrical stimulation on gait performance in patients with hemiparesis.

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Source

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Abstract

The study objective was to assess the effect of functional electrical stimulation (FES) applied to the peroneal nerve and thigh muscles on gait performance in subjects with hemiparesis. Participants were 45 subjects (age 57.8 ± 14.8 years) with hemiparesis (5.37 ± 5.43 years since diagnosis) demonstrating a foot-drop and impaired knee control. Thigh stimulation was applied either to the quadriceps or hamstrings muscles, depending on the dysfunction most affecting gait. Gait was assessed during a two-minute walk test with/without stimulation and with peroneal stimulation alone. A second assessment was conducted after six weeks of daily use. The addition of thigh muscles stimulation to peroneal stimulation significantly enhanced gait velocity measures at the initial and second evaluation. Gait symmetry was enhanced by the dual-channel stimulation only at the initial evaluation, and single-limb stance percentage only at the second assessment. For example, after six weeks, the two-minute gait speed with peroneal stimulation and with the dual channel was 0.66 ± 0.30 m/sec and 0.70 ± 0.31 m/sec, respectively ($P < 0.0001$). In conclusion, dual-channel FES may enhance gait performance in subjects with hemiparesis more than peroneal FES alone.

Randomized trial of a comparison of rehabilitation or drug therapy for urgency urinary incontinence: 1 - year follow-up.

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Source

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Abstract

Introduction and Hypothesis:

Our goal was to compare the long - term efficacy of bladder training (BT), pelvic floor muscle training (PFMT), combined pelvic floor rehabilitation (CPFR), and drug therapy (DT) in patients with urgency urinary incontinence (UUI).

Methods:

This multicenter single - blind randomized controlled trial compared the efficacy of BT, PFMT, DT, and CPFR at baseline and 3 - and 12 - month follow-ups. Outcome measures included number of voids/24 h, number of UUI episodes, Quality of Life related to UUI (QOL-rUI), urogynecologic visual analog scale, and self - reported function and disability.

Results:

A significant improvement was found for all treatment groups at 3 and 12 months in urinary frequency, UUI episodes, QOL-rUI, and number of daily pads. Only CPFR showed a significant decrease of 4 voids/24 h and a significant increase in self-reported function.

Conclusions:

The study demonstrated long-term benefits of DT, BT, PFMT, and CPFR in the treatment of UUI with a slight advantage for CPFR.

Stress among healthcare students - A cross disciplinary perspective.

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Source

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Abstract

Background and purposes:

Perceived stress (PS) among healthcare students worldwide is a recognized problem. To address the paucity of data about the actual degree of PS, this study aimed to: 1) evaluate and compare PS across three healthcare programs (Physical Therapy [PT], Communication Disorders [CD], and Nutrition Sciences [NS]) in one university; 2) evaluate changes in PS across study years; 3) identify the contribution of academic - and socio-demographic-related variables to PS; and 4) determine whether the Israeli students' PS levels differ from those of their peers in other countries.

Methods:

A cross-sectional survey was performed among all undergraduate PT, CD, and NS students from one university. Data were collected using anonymous questionnaires. Instruments included the Perceived Stress Scale 10 (PSS) and the Undergraduate Sources of Stress (USOS). ANOVA was used to evaluate the differences between the three programs, and regression analysis to evaluate the contribution of socio-demographic factors to PS and USOS.

Results:

A total of 312 students (PT - 154; CD - 92; NS - 66) participated in the study. Mean PSS (range: 13.5-13.6) was similar in the three programs. The USOS academic factor was the most reported source of stress in all programs. Most socio-

demographic variables were not related to either PS or USOS.

Conclusions:

Students from PT, CD, and NS programs perceived similar levels of stress. The academic factor was perceived as the most important source of stress by students from the three departments, despite differences in the academic educational programs. Further studies are needed to generalize these results and enable a comparison between healthcare students and other students' stress perceptions.

Blowing the whistle to protect a patient: a comparison between physiotherapy students and physiotherapists.

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Source

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Abstract

Objectives:

To answer three questions: Are physiotherapists and physiotherapy students willing to take action to prevent misconduct in order to protect a patient's interests? Are they willing to report the misconduct to authorities within an organisation and/or outside of it? Are they willing to report a colleague's wrongdoing as well as that of a manager?

Design:

Observational questionnaire study.

Participants:

Two hundred and twenty - seven participants divided into two groups: 126 undergraduate students at the Department of Physical Therapy at Ben Gurion University, and 101 certified physiotherapists working in hospitals and rehabilitation centres in south and central regions of Israel.

Outcome Measures:

Participants were presented with two vignettes - one describing a colleague's misconduct and the other describing a manager's misconduct - and asked to make a decision about whistleblowing.

Results:

Both groups rated their own willingness to take action to change the harmful situations very highly. The physiotherapists perceived a colleague's misconduct as being more serious than the students, and were more willing to intervene

internally. The students were more prepared than the physiotherapists to take such action externally. The students perceived the manager's misconduct as being more serious than the physiotherapists, and also reported a greater readiness to intervene externally.

Conclusions:

Physiotherapists consider acts that are detrimental to a patient to be very serious, and are more willing to take action when the offending individual is a colleague. Students are more willing to blow the whistle externally. This article suggests tools for handling similar situations.

Weightbearing and nonweightbearing ankle dorsiflexion range of motion: are we measuring the same thing?

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Source

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Abstract

Background:

Ankle dorsiflexion range of motion has been measured in weightbearing and nonweightbearing conditions. The different measurement conditions may contribute to inconsistent conclusions regarding the role of ankle dorsiflexion in several pathologic conditions. The purpose of this study was to examine the relationship between ankle dorsiflexion range of motion as measured in weightbearing and nonweightbearing conditions.

Methods:

We compared ankle dorsiflexion range of motion as measured in a weightbearing versus a nonweightbearing position in 43 healthy volunteers. Measurements were taken separately by two examiners.

Results:

Weightbearing and nonweightbearing ankle dorsiflexion measurements produced significantly different results ($P < .0001$). The two measurements correlated moderately ($r = 0.6$ and $r = 0.64$ for examiners 1 and 2, respectively; $P < .001$).

Conclusions:

Weightbearing and nonweightbearing ankle dorsiflexion measurements produce significantly different results and only a moderate correlation, suggesting that these two measurements should not be used interchangeably as measures of ankle dorsiflexion range of motion.

Hemiplegic shoulder pain: Evidence of a neuropathic origin.

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Source

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Abstract

Hemiplegic shoulder pain (HSP) is common after stroke. Whereas most studies have concentrated on the possible musculoskeletal factors underlying HSP, neuropathic aspects have hardly been studied. Our aim was to explore the possible neuropathic components in HSP, and if identified, whether they are specific to the shoulder or characteristic of the entire affected side. Participants included 30 poststroke patients, 16 with and 14 without HSP, and 15 healthy controls. The thresholds of warmth, cold, heat-pain, touch, and graphesthesia were measured in the intact and affected shoulder and in the affected lower leg. They were also assessed for the presence of allodynia and hyperpathia, and computed tomography/magnetic resonance imaging scans of the brain were reviewed. In addition, chronic pain was characterized. Participants with HSP exhibited higher rates of parietal lobe damage ($P < 0.05$) compared to those without HSP. Both poststroke groups exhibited higher sensory thresholds than healthy controls. Those with HSP had higher heat-pain thresholds in both the affected shoulder ($P < 0.001$) and leg ($P < 0.01$), exhibited higher rates of hyperpathia in both these regions (each $P < 0.001$), and more often reported chronic pain throughout the affected side ($P < 0.001$) than those without HSP. The more prominent sensory alterations in the shoulder region suggest that neuropathic factors play a role in HSP. The clinical evidence of damage to the spinothalamic-thalamocortical system in the affected shoulder and leg, the presence of chronic pain throughout the affected side, and the more frequent involvement of the parietal cortex all suggest that the neuropathic component is of central origin.