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Research Article **Published Date:- 2020-12-03**

Efficacy of transcranial direct current stimulation and over-ground walking task on functional mobility and quality of life of stroke survivors

Introduction: High proportion of stroke survivors have impaired functional mobility and decrease in overall quality of life (QoL). Transcranial direct current stimulation (tDCS) (non-invasive brain stimulation) and over-ground walking task (OGWT) (functional task-oriented training) have been suggested to improve functional mobility and QoL of stroke survivors. Hence, this study determined the efficacy of tDCS (anodal and cathodal) with OGWT on functional mobility and QoL of stroke survivors.

Materials and methods: Seventy eight (78) stroke survivors were randomised into three groups: anodal group (anodal tDCS with OGWT); cathodal group (cathodal tDCS with OGWT) and control group (OGWT only). Participants had two sessions of intervention per week for six weeks. Functional mobility was assessed using 10 meter walk test (10MWT) measuring steps, time and velocity while QoL was measured using Stroke Specific QoL (SSQoL) scale. Significance level was set at $p < 0.05$.

Results: Participants (46 males) were aged 56.78 ± 10.24 years. The groups were matched for functional mobility and QoL at baseline and only work/productivity domain of SSQoL showed statistically significant difference ($p = 0.028$). Each group showed statistically significant improvement between baseline and post-intervention scores of items in functional mobility ($p ? 0.001$) and total SSQoL ($p ? 0.001$). Anodal group showed better statistically significant improvement in step ($p = 0.008$), time ($p = 0.024$), velocity ($p = 0.001$) and total SSQoL ($p = 0.016$) among the groups when the mean differences were compared.

Conclusion: tDCS with OGWT is efficacious in improving functional mobility and QoL of stroke survivors. Specifically anodal tDCS with OGWT showed better clinical improvement in step, time, velocity and QoL in stroke survivors.

Research Article **Published Date:- 2020-10-21**

Lower-body negative pressure/ergometer exercise in bed rest: Effects on female orthostatic tolerance

Introduction: Alternatively using gradient lower-body negative pressure (LBNP) and ergometer exercise (LBNP + ergo) under a flight schedule framework was explored to detect its orthostatic capacity maintenance effects in female subjects after 15 days of -6° head-down bed rest (HDBR).

Methods: Twenty-two female university students were divided into a control group (n = 8), an LBNP group (n = 7), and an LBNP + ergo group (n = 7). Ergometer exercise consisted of an interval exercise protocol with 2 min intervals alternating between 41% and 70% VO2max. Gradient LBNP was decompressed in 10 mm Hg intervals to -40 mmHg every 5 min. intermittent ergometer exercise and LBNP were alternatively performed. Tilt test was performed 2 days before HDBR (R-2), on the day of HDBR termination (R+1), and 5 days after HDBR (R+5).

Results: Fifty percent of the participants (11/22) did not pass the tilt test on R+1. The orthostatic tolerance time decreased from 20 to 16.1 ± 2.1 min in the control group, to 10.0 ± 2.7 min in the LBNP group ($p = 0.01$) and to 16.3 ± 2.0 min in the LBNP + ergo group. The HRs and BPs were at similar level among three groups during tilt test on different test days. Compared with the control group, the LBNP + ergo group had higher SV and CO percentage changes at R+1($p < 0.023$) and R+5 ($p < 0.00001$) during the tilt test.

Conclusion: LBNP combined with ergometer exercises fails to prevent orthostatic intolerance but it induced some positive hemodynamic changes during tilt test after 15 days HDBR.

Research Article **Published Date:- 2020-09-15**

Comparison of muscle activation of 3 different hip belt squat techniques

The purpose of this study was to differentiate between muscular activity of three different types of belt squats (SquatMax-MD, Pit Shark and Monster Rhino) and the muscle activation of the rectus femoris, vastus medialis oblique, gluteus maximus, and gluteus medius. Fourteen healthy, male athletes, over the age of 18 years, performed 2 sets of 5 repetitions on each of the three belt squat machines with a weight equivalent to each participant's body weight. Athletes were given at least 2 minutes of rest between each set and condition. Electromyographic data were collected from four muscles: rectus femoris, vastus medialis oblique, gluteus maximus, and gluteus medius muscles. ANOVA revealed the SquatMax-MD belt squat resulted in the highest muscle activation in every muscle, with significantly higher activity in the rectus femoris, vastus medialis oblique, and gluteus medius muscles. The Monster Rhino belt squat produced the second highest muscle activation with the Pit Shark belt squat creating the lowest muscle activation. In totality, the SquatMax-MD produced 38.7% greater muscle activation than the Monster Rhino and 12.2% greater activation than the Pit Shark. The belt squat can be an advantageous exercise because it can effectively load the lower body while de-loading the spine and upper body. The difference in activation between the SquatMax-MD and other belt squats may be due, in part, to the design of the machines. The additional activation produced by the SquatMax-MD belt squat may be useful for individuals seeking hypertrophy, strength, or a reduction in injury risk.

Research Article **Published Date:- 2020-07-30**

Short term effectiveness of extra corporeal shock wave therapy for plantar fasciitis: A systematic review and meta-analysis

Background: The argument on whether extracorporeal shock-wave therapy (ESWT) is beneficial in short- term intervention in adults with plantar fasciitis. It is important and necessary to conduct a meta-analysis to make a comparatively more reliable and overall assessment of the outcomes of ESWT in the less than 6 months.

Methods: We conducted a systematic review and meta-analysis of randomized control trials from MEDLINE, EMBASE and CINAHL databases from 2000 to 2020. Randomized trials that evaluated extracorporeal shock wave therapy used to treat plantar heel pain were included. Trials comparing an extra corporeal shock wave therapy with control/placebo were considered for inclusion in the review. We independently applied the inclusion and exclusion criteria to each identified randomized controlled trial, extracted data and assessed the methodological quality of each trial.

Results: Four studies involving 645 patients were included. 3 RCTs (n = 605) permitted a pooled estimate of effectiveness based on overall success rate and composite score of visual analogue scales for pain at follow-up 1 (12 weeks). The pooled data showed no significant heterogeneity at the three-month follow-up (p - value of chi-square = 0.61, p = 0.74 and I2 = 0%). The shock wave group had a better success rate than the control group at the three-month follow-up (OR = 2.26, 95% CI = 1.62-3.15, p - < 0.00001). For reduction of pain the pooled data showed no significant heterogeneity (p - value of chi-Square 0.28 and I2 22%). There were significant differences between the ESWT and control groups for all follow-up visits (random-effect model, three trials, MD = 15.14, 95% CI = 13.86 to 16.42, < 0.00001 at three-month).

Conclusion: A meta-analysis of data from three randomized-controlled trials that included a total of 605 patients was statistically significant in favor of extracorporeal shock wave therapy at follow-up 1(12 weeks).

Research Article **Published Date:- 2020-07-13**

Physical activity and health-related quality of life among physiotherapists in Hebron/West Bank

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Introduction: Physical activity (PA) directly affects Health-related quality of life. The aim of the study was to establish the relationship between physical activity levels of physiotherapists and their physical activity promotion strategies. in Hebron/West Bank.

Method: The study relied on cross-section, which included 150 PTs distributed over 42 centers of Hebron areas in Palestine country. The questionnaire is based on Likert scale items pentagonal level, which included several aspects of Health-related quality of life. Statistical analysis was used to test the associations between different categorical variables ($p < 0.05$).

Results: of total 150 participants, most of them were male 56%, their ages ranged from 25-30 years (46%), and holding bachelor's degrees 78%. About 60% of them are in good physical health. Most participants feel vitality, depression, quit, have energy, and are happy in the most of the time. In addition, most of them believe their health is similar to that of the members of the surrounding community. The study showed there is no relationship between general health and age except in the age group over 40 years, and females are the most exposed group. In addition, there is an influence relationship between physical and psychological with age, and this effect also includes females more than males.

Conclusion: Physical functioning of most of the participants was good, while most of the participants had problems with their work and the major effect was on the female category.

Research Article **Published Date:- 2020-07-09**

Determination of body image perception and life satisfaction in patients undergoing hemodialysis

Objective: This descriptive study was conducted in order to determine body image perception and life satisfaction of individuals undergoing hemodialysis treatment.

Material and methods: The population of the study consisted of individuals who were treated in hemodialysis units in the city center of K?r?ehir. Patients. The study was conducted with 135 patients. Questionnaire, multidimensional body-self relations questionnaire, and satisfaction with life scale were used as data collection tool.

Results: According to study results, total mean scores of MBSRQ were significantly low in individuals who were older than 65, illiterate, had an extended family, were unemployed, had low income, suffered from disease and underwent hemodialysis treatment for 10 years and longer, had arteriovenous fistula in vascular insertion site, had body mass index within the class of morbid obese, and had no planned transplantation. SWLS mean scores of individuals, who were in the age group of 25-34 years, high school graduate, employed, described their income status as very high, had CRF for 6-12 months, underwent hemodialysis for 6-12 months, were waiting for renal transplantation, were significantly high. As a result of the correlation analysis made between body image and life satisfaction, it was determined that there was a positive, quite significant correlation

Conclusion: As a result, it was determined that hemodialysis patients were affected by body image and life satisfaction negatively due to many factors and the total score of body image scale was very low.
