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Sathees Kumar Durairaj et al., J Nov Physiother 2016, 6:5 (Suppl)
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Role of transcutaneous electrical nerve stimulation as sensory intervention in hemiplegic cerebral palsy: A pilot study

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Background: The tactile sensory deficit is one of the major growing concerns for spastic hemiplegic cerebral palsy (HCP). This study intends to study the effectiveness of transcutaneous electrical nerve stimulation (TENS) combination with task oriented training (TOT) to improve upper limb sensory function in spastic HCP children.

Method: This single-blind, randomized, multi-center study included 15 HCP children ages ranged from 4 to 12 years. They randomly assigned into two groups, group-A received high frequency TENS with TOT and group-B received only TOT for 3 sessions per week for 8 weeks. Semmes-Weinstein monofilaments (SWM), two point discriminator (TPD), pick-up test, quality of upper extremity skill test (QUEST) and ABILHAND-Kids questionnaire were measured at before and after the interventions.

Results: The group-A showed significant difference with group-B in SWM, TPD and QUEST score at $P<0.001$ level. No significant difference between groups A & B in pick-up test and ABILHAND-Kids questionnaire score.

Conclusions: Adding TENS with TOT can improve upper limb sensory function. Future studies will be conducted based on this study results.

Keywords: Hemiplegic cerebral palsy, Sensory deficit, TENS, Task oriented training.

Biography

Sathees Kumar Durairaj has completed his MPT from The Tamil Nadu Dr. MGR Medical University and is pursuing Doctoral Studies from Nitte University, Mangalore, India. He is the Associate Professor of PPG College of Physiotherapy, Coimbatore, India. He has published 2 papers in reputed journals.

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Heta Patel et al., J Nov Physiother 2016, 6:5 (Suppl)
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Prevalence of neck pain in laboratory technicians

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Aim of the present study is to determine the prevalence of WMSDs [Work Related musculoskeletal disorders; Neck Pain] in laboratory Personnel. Objectives of the study are to evaluate the main health disorders [Neck Pain] of laboratory workers. Both male and female and laboratory personnel having worked experience of one or more than one year were included in the study. Laboratory personnel having any pathology related to neck and recent trauma or surgery to neck or shoulder were excluded from the study. Cross sectional descriptive study using a self administered questionnaire were used. Laboratory personnel having work experience of one or more than one year were taken. An informed written consent was taken from the laboratory personnel who fulfilled the inclusion criteria. They were asked to fill a self administered questionnaire which was then evaluated. The total number of participants was 120. The mean age was 28 years and the overall disability rate was 82.5%. The reasons for developing neck pain can be due to Cumulative trauma disorders (CTD) or repetitive strain injuries (RSI) or occupational overuse syndromes (OOS) of the musculoskeletal system or work related musculoskeletal disorders. These situations often lead to development of overuse syndromes, persistence of symptoms thus becoming recurrent and/or chronic. Thus, neck pain is significantly prevalent in laboratory personnel depending on gender as well as BMI and not depending on years of experience.

Biography

Heta Patel is a Lecturer at Shrimad Rajchandra College of Physiotherapy, UKA Tarsadiya University, Gujarat, India. She had done specialization in Musculoskeletal Condition & Sports Physiotherapy from Sardar Patel University, Gujarat, India. She has obtained various skills by certification in the field of Osteopathy, Manual Therapy. She has presented research papers in various national and international conferences. She is an eminent clinician and an academician. She is ambitious about her profession.

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R Harihara Prakash et al., J Nov Physiother 2016, 6:5 (Suppl)
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Level of education shaping the attitude of students without disability towards children with disability

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Introduction: Worldwide, an estimated one billion people (15% of total world population), experiences some form of disability. In India, there are 26,810,557 (2.1% of total population) are suffering from one or the other form of disability. As per 2011 census, in Gujarat, 1,092,302 (as per 2011 census) people are having one or the other form of disability. Disability prevalence in developing countries, persons with disabilities, on average as a group, are more likely to experience adverse socioeconomic outcomes than persons without disabilities, such as less education, worse health outcomes, less employment, and higher poverty rate. Majority of children and young people with disability live in developing countries where they face inequalities in education and other opportunities. Negative attitude constitute one of the major barriers to the development of their potential.

Objective: To explore the attitudes of students without disability towards their peers with disability and to assess the role that level of education plays in shaping these attitudes.

Materials & Methods: A cross-sectional study involving 106 students was carried out at K M Patel Institute of Physiotherapy, Karamsad. Participants were recruited from a group of 106 students in 6 grades (First year BPT, Second year BPT, Third year BPT, Final year BPT, First year MPT, Second year MPT). A semi-structured questionnaire containing items on the "Chedoke-McMaster Attitude Towards Children with Handicaps (CATCH) scale", which elicits responses on Likert scale (agree, neutral, disagree), was administered. The data collection is in the process and will be collected in phases from first year undergraduate to final year postgraduate.

Results: Descriptive statistics will be used to find the attitude of the students with chi-square method for comparing the students of each year.

Conclusions: As the level of education of the students' increases, the sensitivity of their attitude towards disabled children will be more positive.

Biography

R.Harihara Prakash is the Principal and Professor in K M Patel Institute of Physiotherapy, Karamsad. He has 18 year of professional experience in clinical as well as academics. He is Doctorate in Physical Therapy from National University of medical science, Spain. He was awarded "RASHTRIYA VIDHYA SARASWATI PURASKAR AWARD" for his excellent contribution in academics. He was a former Dean, Faculty of Physiotherapy, Baba Farid University of Health science, Punjab. He is in editorial and peer reviewer for some international journals. He is also in the panel of NAAC. He has obtained various skills by certification in the field of neurology, osteopathy, manual therapy from various countries. He has published and presented research papers in various national and international conferences. He is an eminent speaker and an academician.

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Vidhi Gajjar et al., J Nov Physiother 2016, 6:5 (Suppl)
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Effect of physiotherapy training on reach performance during standing in children with diplegic cerebral palsy with and without ankle foot orthosis

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Aim: To compare the effect of physiotherapy treatment on reach performance in children with diplegic CP with additive effect of AFO.

Material & Methods: 21 children aged above 4 years, with diplegic cerebral palsy were recruited from different centers and assigned into 2 groups: Group A with AFO and group B without AFO. All participants' reaching performance was assessed. Each subject was given balance and gait training for 4 weeks and post intervention reach test was measured.

Results: Mean change in distance measured by forward reach test and lateral reach test from the baseline covered by patients with AFO was statistically highly significant more at 4 weeks and after 4 weeks of intervention. Mean change in distance measured by forward reach test and lateral reach test from the baseline covered by patients with AFO did not statistically significantly differed as compared to the patients without AFO at 4 weeks of intervention.

Conclusions: Balance and gait training is effective in improving reach performance in children with diplegic CP. But there is no such differentiation in wearing AFO in the improvement of forward and lateral reaching test.

Biography

Vidhi Gajjar has completed her Bachelor of Physiotherapy in the year 2011 and Master of Physiotherapy in the year of 2015 from Sardar Patel University, India. Her work experience is of six years after graduation. Her field of interest is Paediatric Neurology.

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Jyotsna R. Kshirsagar et al., J Nov Physiother 2016, 6:5 (Suppl)
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Association between qualities of life and functional measures in patients with Osteoarthritis of knee

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Background: Osteoarthritis of the knee is a major problem because of its high prevalence and substantial impact on the functional ability. It is characterized by disability in daily functioning primarily in activities related to mobility e.g. walking, stair climbing and transfers. Reduced functional ability starts in the early phase of the disease and it is progressive. Osteoarthritis of knee has a significant negative effect on quality of life. Limitation in walking, squatting and stair climbing are affected to a great extent.

Purpose of the Study: To find out the association between quality of life and functional objective measures viz. 20 meter walks test, 30 sec. chair stand test and stair climb test in patients with knee osteoarthritis.

Methodology: A cross sectional study of 20 subjects with purposive sampling technique and age between 60-75yrs with definite diagnosis of osteoarthritis were assessed for quality of life using KOOS scale. The functional activities were assessed using 20 meter walk test, 30 second chair stand test and stair climb test.

Results and Conclusion: The mean age of the study subjects was 69 yrs. with SD ±3.73yrs. Correlations when estimated using Karl Pearson's correlation coefficient showed –a)positive correlation between QOL & 20 meter walk test which was moderate (r=0.603) ;b) negative correlation between QOL &30 sec. chair stand test, which was moderate (r=-0.605);and c) positive correlation between QOL & stair climb test ,which was low (r=0.26)

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Biography

Jyotsna R. Kshirsagar is a Post graduate student doing 2 years MPT programme. My area of specialization is Musculoskeletal disorders and Sports. I am undertaking clinical trial on older adults with osteoarthritis of knee under the guidance of Dr. Priya S. Assistant Professor and Dr. Sanjay Eapen Samuel Professor and Principal, Laxmi Memorial College Of Physiotherapy, A J Institute Of Medical Sciences, Mangalore, Karnataka, India. I have completed my graduation in Physiotherapy from Nagpur University, India. I have completed my Post graduate Certificate Course in Rehabilitation from All India Institute of Physical Medicine and Rehabilitation, Mumbai, India in 1976.I have work experience of 37 years in Goa Medical College and hospital, India. I have retired from Goa Medical College as Assistant Head of Physiotherapy Department.

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Accepted Abstracts

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Multidisciplinary team approach in stroke rehabilitation in developing countries

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The rehabilitation is complex and dynamic goal oriented approach to provide an optimal functional status and independence in patients. It is not possible to manage this process alone and there is significant need of development of a rehabilitation professional team. Teamwork is the key factor in rehabilitation to achieve holistic goal regarding the problems of patients. This team approach facilitates to acquire the possible and best outcome in rehabilitation. The comprehensive rehabilitation has widespread areas and to manage the person with limited function is challenge for professional. The health care profession is progressing very fast and new innovations are included in the management. The world is moving towards the concept of collaboration and coordination to get context specific objectives. The different professional in rehabilitation field can come together and provide best expertise to enhance the quality life of patients. The definition of MDT states that "This refers to activities that involve the efforts of individuals from a number of disciplines. These efforts are disciplinary-orientated and, although they may impinge upon clients or activities dealt with by other disciplines; they approach them primarily through each discipline relating to its own activities". The MDT in stroke include the neurologist, physiatrists, physical therapist, speech and language pathologist, occupational therapist, clinical psychologist and prosthetic & orthotics. This is the group of specialists who discuss the problems of patients and set a common goal to provide quality care. There is dire need to develop a MDT approach in stroke rehabilitation in Pakistan. The MDT is the standard and effective approach to provide a platform used for the professional to place patient centered goal with detail discussion and consensus. Every person in MDT have same ultimate purpose of providing the best and evidence based treatment to patients, but this can only possible with cooperation and appropriate communication with each other for the benefit of patient care.

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Kinesio taping as an adjunct to end range mobilization in treatment of adhesive capsulitis of shoulder: A randomized controlled trial

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Shoulder pain is one of the commonest causes for patient visiting rehabilitation clinic. The term adhesive capsulitis of shoulder has been used for the patients with shoulder pain and mobility deficits. The prevalence of shoulder pain has been reported to be 26%, with greater prevalence among females. Adhesive capsulitis will be used to describe both primary (idiopathic) and secondary adhesive capsulitis. The primary is associated with medical conditions like DM, hyperthyroidism, IHD, etc. and secondary is associated with extended mobilization, cumulative trauma or surgical trauma. Studies have demonstrated the benefits of manual therapy for improvement in mobility and pain measure. Recently new advances for the treatment of adhesive capsulitis are the use of Kinesio tape (KT), which is a safe technique that has minimal side effects that facilitates musculoskeletal rehabilitation by reducing discomfort. However minimal evidences exist to support the use of KT in the treatment of adhesive capsulitis. 30 subjects diagnosed with adhesive capsulitis (stage II) within the age of 45 to 65 years were randomly selected and were grouped as "A" and "B" with equal representation by random sampling using lottery method. Subjects of group B were given KT in addition to end range mobilization (Grade IV) 3 sessions per week for 6 weeks. Outcome measures were pain on VAS, range of motion and UCLA score. The collected data was analyzed using one way repeated measure ANOVA and Wilcoxon Rank Sum test. Over day 1 to end of 6 weeks the average reduction of pain in group A was 2.53+1.35 and in group B was 3.33+1.11. Comparison of UCLA score shows a difference of 5.06+3.23 in group A and 5.73+3.06 in group B at the end of 6 weeks. There was significant improvement in global range of motion in both the groups with marked increase in group B as compared to group A at the end of 18 sessions. The randomized controlled trial shows that Kinesio tape has an adjunct effect on pain, range of motion and function along with end range mobilization in the of adhesive capsulitis of shoulder.

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Effect of cold plasma on the characteristics of DPPC liposomes

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Recent progress in atmospheric plasmas has led to the creation of cold non-thermal atmospheric plasma (CAP). CAP is an ionized gas that has tremendous applications in biomedical engineering and is used as a possible therapy in dentistry and oncology. The aim of plasma interaction with tissue is not to denature the tissue, but rather to operate below the threshold of thermal damage and to induce chemically specific response or modification. Liposomes are used as models for artificial cells. This report therefore investigates the effect of cold plasma on 2-dipalmitoyl-sn-glycero-3-phosphocholine (DPPC) liposomes prepared by thin film hydration method which are used as a model for lipid bilayer membrane. DPPC liposomes were exposed to cold plasma 2, 3 and 5 minutes, respectively. The effect of cold plasma on DPPC characterization parameters such as size, charge, FTIR absorption spectrum, UV spectrum and phase transition temperature were investigated. The present study revealed that CAP could alter the molecular structure for DPPC liposomes as depicted in the change in the FTIR absorption peaks at 3439 and 1687 cm-1. In addition, CAP affected the phase transitions for the DPPC by shifting it to higher temperatures. Moreover, CAP led to the increase of DPPC liposome size. 2 min exposure to CAP resulted in rapid coagulation of liposomes as depicted from the low zeta potential value obtained. However, the UV absorption spectrum for DPPC liposomes was not altered by CAP exposure. Hence, this work highlighted that CAP may modify the physical and chemical characteristics of DPPC liposomes.

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Hospital outreach rehabilitation following hip fracture repair for nursing home residents improves mobility outcomes: A single blind randomized control trial

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Question: Does "Home Rehabilitation" following hip fracture repair improve mobility for nursing home residents?

Design: Previously walking nursing home residents (n=240) with hip fractures received 4 weeks of home rehabilitation in their nursing home or usual care. In parallel, families and nursing home staff for the first 30 participants were invited to share their perceptions of the journey for residents at interviews/focus groups.

Intervention: Physiotherapy (minimum 3 session's week for 4 weeks) focused on restoration of transfers and limited mobility.

Outcome Measures: The nursing home life space diameter (NHLSD), mobility status including level of independence and qualitative data organized as a thematic analysis with the assistance of NVivo 10 were collected.

Results: Nursing home residents who received "Home Rehabilitation" mobilized further and more frequently as assessed by the NHLSD ($p<0.0001$). More "Home Rehabilitation" participants were reported to have regained independent mobility with a lower burden of care compared to usual care participants. Acute care staff struggled to provide people with dementia mobility retraining and nursing home staffs were ill-equipped to provide post-operative care including mobility retraining and pain management on their return home.

Conclusion: Following hip fracture surgery, "Home Rehabilitation" for nursing home residents was feasible and improved independence with mobility was achieved.

Key Practice Points: 1) Strategies need to be developed to engage people who have dementia in early rehabilitation in the acute setting; and 2) mobile nursing home residents with dementia who fractured their hips can improve their mobility levels in response to outreach physiotherapy.

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Epidemiology of low back pain among nurses working in public hospitals of Addis Ababa, Ethiopia

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Background: Low back pain (LBP) related to nursing profession, is a very common public health problem throughout the world. Various risk factors have been implicated in the etiology and LBP is assumed to be of multi-factorial origin as individual, work-related and psychosocial factors can contribute to its development.

Objectives: To determine the prevalence and to identify risk factors of LBP among nurses working in Addis Ababa City Public Hospitals, Ethiopia, in the year 2015.

Settings: Addis Ababa University, Black-Lion ('Tikur Anbessa') Hospital-BLH, is the country's highest tertiary level referral and teaching hospital. The three departments in connection with this study: Radiology, Pathology and Orthopedics, run undergraduate and residency programs and receive referred patients from all over the country.

Methods: A cross-sectional study with internal comparison was conducted throughout the period October-December, 2015. Sample was chosen by simple random sampling technique by taking the lists of nurses from Human Resource Departments as a sampling frame. A well-structured, pre-tested and self-administered questionnaire was used to collect quantifiable information. The questionnaire included socio-demographic, back pain features, consequences of back pain, work-related and psychosocial factors. The collected data was entered in to EpiInfo version 3.5.4 and was analyzed by SPSS. A probability level of 0.05 or less and 95% confidence level was used to indicate statistical significance. Ethical clearance was obtained from all respected administrative bodies, hospitals and study participants.

Results: The study included 395 nurses and gave a response rate of 91.9%. The mean age was 30.6 (±8.4) years. Majority of the respondents were female (285, 72.2%). Nearly half of the participants (n=181, 45.8% (95% CI (40.8%-50.6%))) complained low back pain. There were statistical significant association between low back pain and working shift, physical activities at work; sleep disturbance and felt little pleasure by doing things.

Conclusion: A high prevalence of low back pain was found among nurses working in Addis Ababa Public Hospitals. Recognition and preventive measures like providing resting periods should be taken to reduce the risk of low back pain in nurses working in public hospitals.

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Genesis and evolution of a myofascial dysfunction: Causes, pathological anatomy and effective treatments

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The presentation discusses about the causes that lead to a dysfunction of the fascial tissue and about the ways in which it can evolve in time. After an overview of fascial function and dysfunction–including brief anatomy and physiology notes-the participants will be able to understand the connection between thickening, contracture, fibrosis and calcification, as well as the fundamental role of the myofascial sliding and gripping. In the end, we will compare a selection of hypothetical models and therapeutic manual therapy approaches to treat fascial dysfunctions and we will talk about known methods of fascial modification.

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Effect of motor imagery of truncal exercises on trunk function and balance in early stroke: A randomized controlled trial

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Background: Studies in the past focused on benefits of motor imagery in improving upper and lower limb functions when administered along with conventional therapy. Nevertheless, there is a paucity of literature proving the effects of motor imagery of truncal exercise in improving trunk function in patients with stroke.

Aims: To study the effect of motor imagery of truncal exercises on trunk function and balance in early stroke.

Methods: A total of 24 patients were included in the study. Trunk function was measured using trunk control test (TCT), trunk impairment scale Verheyden (TIS Verheyden) and trunk impairment scale Fujiwara (TIS Fujiwara). Balance was assessed using Brunel balance assessment (BBA) and Tinetti POMA. The MI intervention included a 3-week practice of trunk exercises after observing the video while the control group practiced the trunk exercises alone. Measurements were taken before, after and 4 weeks after intervention.

Results: MI group showed improvement after 3 weeks' intervention on values of TIS (Verheyden), BBA, Tinetti balance and gait with a large effect size of 1.69, 1.06, 1.63 and 0.97 respectively. Moderate effect size on TIS Fujiwara (0.58) and small effect size on TCT (0.12) was observed. When measured after 4 weeks, large effect size was seen on TIS Verheyden (1.59) and Tinetti balance (1.24). Moderate effect size was observed on BBA (0.62) and Tinetti gait (0.72).

Conclusion: Trunk motor imagery is effective in improving trunk function and balance in patents with stroke and has a carryover effect in the aspects of mobility. The therapy gain that was observed during the time of discharge was seen to be maintained at the follow up levels.

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A retrospective analysis of a functional restoration service for patients with persistent low back pain

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Back pain is of considerable interest in society today and is a source of ongoing disability and days lost from work in the adult population. Historically, the recommended management has encompassed conservative methods, from physiotherapy and a range of other manipulative techniques to surgical interventions in various forms. There is now agreement that adults with persistent low back pain who have failed physiotherapy and have high levels of disability and psychological distress are best managed through a combined physical and psychological approach, which should be up to 100 hours in length. This combined approach has been modified by authors in several forms, of varying duration, with good results, supporting the idea that benefit can be gained from interventions of a lesser duration. The present paper reports on the results, as measured using the Oswestry disability index (ODI) and pain self-efficacy questionnaire (PSEQ), of a 4-week functional restoration program (FRP) treatment intervention, run in a tertiary spinal center, which used a combined physical and psychological approach.

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Mouth exercising device adjunct to local medicaments or surgical treatment helps reducing the mucosal burning sensation in oral submucous fibrosis: A randomized controlled trial

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Objectives: This study aims to evaluate the effect of ice-cream stick exercise regimen with or without a mouth exercising device (MED) in association with local and surgical treatment on mucosal burning sensation in oral submucous fibrosis (OSMF).

Methods: Total 282 OSMF patients irrespective of the subgroup were treated with topical corticosteroid and oral antioxidant and Icecream-stick exercise regime. Subgroup A1,A2,A3 patients were additionally given a new mouth exercising device (MED). The patients with the subgroup A1,B1 with inter-incisal distance (IID) of 20-35mm were managed without any additional therapy; the subgroup A2,B2 with IID of 20-35mm were additionally managed with intra-lesional injections; and the subgroup A3,B3 with IID<20mm were managed surgically. Subjective evaluation of decrease in the oral mucosal burning sensation was measured on Visual Analogue Scale. ANOVA and Tukeys multiple post hoc analysis was carried out to present the results.

Results: Patients using the MED, subgroup- A1,A2,A3 were showing reduction in burning sensation from 64.8-71.1% to 27.8-30.9% while in subgroup B1,B2,B3 reduction in burning sensation was from 64.7-69.9% to 29.3-38.6% after 6 months. The 2-way-ANOVA indicated statistically significant results in change in Initial to 6 monthly VAS scores between the MED users and non-MED users. The subgroup B1 against the subgroup A1,A2, and A3 indicated statistically significant results in VAS score changes indicating reduction in burning sensation.

Conclusion: The MED helps enhancing the rate of reduction of mucosal burning sensation in addition to conventional ice-cream stick regime adjunct to local ointment application, intra-legional drug administration as well as surgical treatment.

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Cardiopulmonary exercise testing (CPET) and exercise prehabilitation for elderly patients presenting for major cancer surgery

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CPET is considered the gold standard for the evaluation of cardiopulmonary reserves. This technology is increasingly becoming available to hospitals undertaking major surgery. Although CPET has been traditionally used as a risk evaluation and risk stratification tool in the pre-op period, it is now being used to inform exercise prescriptions as a part of multimodal prehabilitation programs. These programs are designed to optimize the patient's condition prior to commencing surgery, and are in contrast to rehabilitation, which is undertaken after the insult of surgery. This is an innovative approach to the use of exercise in these patients and has special appeal in the care of the elderly, sedentary patient presenting for major cancer surgery. This presentation will attempt to explain the principles of CPET to physiotherapists who are not familiar with the test. Also, the audience will be given a review of the current literature and recommendations on how to perform prehabilitation in these patients in order to improve their surgical outcomes.

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Effect of craniosacral therapy on chronic mechanical neck pain

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Background: Chronic neck pain is one of the most common complaints in the general population and can result in substantial problems including disability, absence from work and cost of treatment.

Purpose: This study was conducted to investigate the effect of craniosacral therapy on chronic mechanical neck pain.

Subjects: 30 patients aged from 18-30 years from both sexes were classified randomly into 2 groups with equal numbers.

Materials & Methods: Study group (group A) consisted of 15 patients who received craniosacral therapy in addition to traditional physical therapy (infrared radiation & ultrasound therapy) for 4 weeks consecutively, while the control group (group B) consisted of 15 patients who received only traditional physical therapy (infrared radiation & ultrasound) for 4 weeks consecutively. Visual analogue scale (VAS), range of motion (ROM) and neck disability index (NDI) were measured at two intervals pre-treatment and post-treatment.

Results: There were significant differences between both groups (A and B) post treatment ($P<0.0001$) regarding VAS, ROM and NDI in favor of group (A).

Conclusion: Craniosacral therapy is more effective in addition to traditional physical therapy in improving pain, range of motion and neck functional disability in patients with chronic mechanical neck pain.

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Effect of sitting postures and shoulder position on the cervicocephalic kinesthesia in healthy young males

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Information about head orientation, position and movement with respect to the trunk relies on the visual, vestibular, extensive muscular and articular proprioceptive system of the neck. Various factors can affect proprioception since it is the function of afferent integration, and tuning of muscular and articular receptors. Pain, muscle fatigue and joint position have been shown to affect proprioceptive capacity. Thus, it can be speculated that changes in body posture can alter the neck proprioception. This study was undertaken to investigate the effect of body posture on cervicocephalic kinesthetic sense in healthy subjects. Cervicocephalic kinesthetic sensibility was measured by the kinesthetic sensibility test in healthy young adults while in (a) habitual slouched sitting position with arms hanging by the side (SS), (b) habitual slouched sitting position with arms unloaded (supported) (SS-AS), and (c) upright sitting position with arms hanging by the side (US) during maximum and 30 degree right, left rotations, flexion and extension. 30 healthy male adults (mean age 27.83; SD 3.41) volunteered for this study. The least mean error was found for the SS-AS position (0.48; SD 0.24), followed by SS (0.60; SD 0.43) and US (0.96; SD 0.71), respectively. For all test conditions, there was significant difference in mean absolute error while head repositioning from maximum and 30 degree rotation during SS and SS-AS positions ($p<0.05$). In conclusion, body posture can affect the proprioception function of the neck. Supporting the upper extremities in such a way that their weight is unloaded, which leads to reduction in the tension between the neck and shoulder girdle, can improve cervicocephalic kinesthetic sense in both the horizontal and vertical planes. The findings of this study can be implemented in people who have to do repeated arm and neck movements, by using ergonomically effective chairs with proper arm supports. This might help in prevention and treatment of neck pain.

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Efficacy of Kaltenborn grade III mobilizations, muscle energy techniques and their combination to improve range and functional ability in adults with mechanical neck pain

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Background: Previous literature had proved the significance of physiotherapy as an effective management in the management of mechanical neck pain, still there was lack of literature seen supporting the effectiveness of different physiotherapy interventions with their doses targeting specific group of population (adults/students only). The aim of this study was to see the efficacy of Kaltenborn grade III mobilizations, muscle energy techniques and their combination to improve range and functional ability in adults with mechanical neck pain.

Materials & Methods: A quasi experimental study on 72 freshly diagnosed patients with mechanical neck pain was conducted in Physiotherapy Department of Fatima Memorial Hospital Shadman. Those patients were randomly divided in 3 groups (Mobilization group, METs group and Combination group). There was no significant difference between age, educational year, computer using hours, duration of pain and initial NDI score and its percentage. NDI scale and goniometry was used as an assessment tool to measure the outcome of treatment in different groups before and after treatment (follow up 1 week).

Results: According to the results, there was significant improvement seen in Combination group (Mobilization and METs) in terms of pain, which decreased from 7.70±0.69 to 1.25±1.93 (p=0.00), gain in ROM e.g. cervical flexion (27.29±2.38 to 37.54±3.14), right SF (from 30.20±2.84 to 41.45±3.84), left SF (from 32.62±4.5 to 43.25±3.75), RR (from 43.25±5.7 to 57.33±3.0) and LR (from 48.08±6.8 to 58.50±3.4). Whereas, marked significance (p=0.00) was seen in the NDI score and percentage of Combination group (from 33.12±3.5 to 3.29±7.7 and 67.50±6.3 to 6.67±15.5, respectively). ANOVA tells us that difference was significant in all 3 groups as p=0.000 in categories of pain (VAS), gain in cervical (flexion, right SF, left SF, RR, LR) and NDI score and percentage as p=0.000. Combination group had significant (p=0.00) difference within the groups then METs and Mobilization group in all categories of pain (VAS), gain in Cervical (Flexion, Right SF, Left SF, RR, LR) and NDI score and percentage. However, METs and Mobilization difference was not significant within the group.

Conclusion: Combination of Grade III Kaltenborn and METs was seen more effective in terms of improving mechanical neck pain, in smaller treatment session (7 days only).

Recommendations: Further studies are also required to compare the long term effects of combination of treatment i.e. they are effective in improving quality of life in long term. Are they effective in improving endurance of the patients? And treatment combinations that will result in long term effective results need to be investigated.

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The Effect of A Single Intervention of Tactile Feedback (Novel Treatment) Compared to Visual Feedback on Body Sway in the Elderly; A Randomized Clinical Trial

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Aging process involves many physiological changes that affect body balance. Also, elderly experience higher incidence of diseases that affect body balance. Studies have shown a direct relationship between body sway and incidence of fall in elderly. One-third of the people aged 65years or older fall every year. About 20-30% of these falls result in fall related injuries that require medical attention. The purpose of this study was to examine the effects of tactile feedback compared to visual feedback on body sway in elderly people. Fifty one subjects were assigned randomly to either visual feedback (mean age 76.1± 7.1 years; n1=29)or tactile feedback (mean age73.5±6.4 years; n2=22). A balance platform was used to measure average body sway pre and post intervention. Two conditions were used to test body sway: 1) Standing on platform with eyes open and 2) Standing on platform with eyes closed. Intervention consisted of 2 sessions: A) Standing on platform for 4 minutes while holding still and B) Standing on foam for 2 minutes while holding still. Tactile feedback was provided as electrical stimulation resulting in tingling sensation on the lower leg if the sway exceeds 50% of subject's average body sway. A monitor was used to project the motion of the center of pressure to provide visual feedback. Visual feedback did not result in significant reduction in body sway for both conditions. However, tactile feedback resulted in significant reduction in body sway with eyes closed post intervention versus pre intervention (.9± .5vs1.3±.9, p=.04) but not with eyes open.

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