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CONFERENCE ABSTRACTS

Session : Rapid Five Presentations

AB07	Improving participation in community dwelling older adults: A case report
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Purpose and Relevance: Participation is defined as “person's involvement in life situations”. ICF framework emphasizes the importance of addressing participation goals as part of healthcare delivery. Recent evidence does not support the implicit assumption that exercise-based interventions associated with improved function/activity also result in improved participation. Hence, alternative strategies to improve participation are needed.

Case Description: Mr. X, 72 year male with a medical diagnosis of Parkinson's disease, reported to physiotherapy department with complaints of slowness in performing most ADL, difficulty walking in crowded areas, inability to walk long-distance, and fear of falling during outdoor mobility. Using the ICF geriatric core-sets framework; evaluation using Figure of eight walk test, 30-second sit to stand test, Six-minute walk test, Modified falls efficacy scale, Parkinson's Disease Questionnaire, Late-Life Disability Index Questionnaire indicated reduced gait speed and walking endurance, fear of fall and activity limitation, and restricted community participation.

Intervention: Evidence based multidimensional intervention strategy consisting of strength and

cardiopulmonary endurance training, Balance training, and LSVT-Big Exercises was adopted to improve functioning and activity limitation. In addition, an attempt was made to improve participation using a three-pronged strategy consisting of: a. education (benefits of being active, safe exercising, and fall prevention), b. improving self-efficacy, and c. training of challenging activities in community simulated environment.

Results: The multidimensional intervention strategy led to moderate improvements in the overall independence level and community participation. Mobility component of PDQ-39 improved from 35% to 16%; and LLDI scores changed favorably as follows- Functional Component: 56.18 to 62.05; Disability Component: 58.06 to 60.62. Post treatment, Mr X could cross the road, independently travel by public transport, and perform grocery shopping.

Conclusion: An approach involving participation goals along with therapeutic exercise goals led to improved community participation.

Implication: Based on evidence, it is important to explicitly address participation goals using strategies beyond regular therapeutic exercises.

AB21	Inspiratory muscle training in Spinal Muscular Atrophy: A Case Report
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Background: In Spinal Muscular Atrophy (SMA), there is a progressive muscle weakness of both skeletal and respiratory muscles which leads to respiratory insufficiency and stagnation of secretions. The conventional physiotherapy for SMA incorporates preserving strength and endurance. Endurance can be improved not only by strengthening the skeletal muscles but also by strengthening the respiratory muscles.

Purpose and Relevance: Respiratory muscles adapts similarly to training (inspiratory muscle training) as other

skeletal muscles, however there are conflicting and lack of evidences on Inspiratory muscle training in SMA. The objective of this study is to assess the effect of inspiratory muscle trainer on respiratory muscle strength and endurance.

Case Description and Intervention: A school going 8 year old girl was diagnosed with SMA 7 years back. She had frequent admissions in the hospitals for respiratory infections. She also complained of early onset of fatigue, loss of balance and low endurance. 6 weeks of

intervention was done, which consisted of Inspiratory Muscle Training (inspiration and expiration) for 10 cycles followed by 2 mins of rest, 3 sets twice a day. The outcome measure assessed were Maximum Inspiratory Pressure (MIP), Maximum Expiratory Pressure (MEP), 6 min walk distance (6MWD) and Pulmonary function test (PFT) were measured.

Results: MIP increased from 27 to 60 CmH₂O. MEP also increased from 33 to 40 CmH₂O. PFT shows improvement in FEV₁/FVC % (from 91.4% to 84.8%) Distance in

6MWD increased from 6 meters to 10 meters with less number and duration of the breaks during the test.

Conclusion and implications: The results of MIP, MEP and PFT shows that despite progressive skeletal muscle weakness, the strength and endurance of the respiratory muscles can be improved. Hence, inclusion of Inspiratory Muscle Trainer is helpful not only in improving respiratory muscle strength but also in delaying onset of fatigue which leads to improved cardiovascular endurance.

AB18	Benefits of Aerobic Exercise Training in a Child with Ewings Sarcoma - A Case Report
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Background: Advancement in treatment of cancer has led to dramatic improvements in survival rate, but survivors continue to have problems like reduced endurance, pain, weakness and fatigue due to chemotherapy/radiotherapy treatments. Hence, Cancer-rehabilitation is an emerging field across the world.

Purpose: This case-report focuses on a 12 year old child, diagnosed with Ewings Sarcoma, who underwent Total Knee Replacement and was undergoing chemotherapy. Though the rehabilitation post TKR is well established, there were additional impairments and limitations that needed to be addressed in this case. Aerobic exercises have proven to help reduce fatigue improve endurance and have positive effect on mental health in cancer patients. Thus the purpose of this case-report was to assess benefits of adding aerobic training to rehabilitation program in a patient who underwent TKR after Diagnosis of Ewings Sarcoma.

Case Description: Patient came with complaints of fatigue, limping and difficulty in climbing stairs and was followed up in the OPD for 6 weeks for knee rehabilitation. Each session included combination of

Aerobic Exercises, Strengthening Exercises and balance training. Outcome measures included 6-minute walk Test, PedsQL- Quality of Life Questionnaire and Gait Analysis (using Gait-lite).

Results: The distance walked in 6mWT improved from 232mts to 318 metres and reduction in rest period, improved scores in PedsQL and improved heel to toe weight bearing and temporal parameters of gait pattern. Patient also showed improved confidence, motivation and adherence to exercise.

Discussion: Aerobic exercises with rehabilitation protocol have positive effect to improve endurance, QoL, motivation, self-efficacy and confidence in cancer survivors. This report stresses on importance of an integrated approach in rehabilitation. Hence cancer intervention should include aerobic exercise training in rehabilitation.

AB50	"Are We Optimizing The Potential Of Cancer Survivors? - A Case Report"
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Purpose and Relevance: Cancer related fatigue has been a barrier for Cancer survivors to engage in their daily activities. Moreover, patients are stigmatized about the disease itself. This again acts as a barrier for them to follow the current guidelines for cancer survivors to be active for 30 mins/day or be as active as possible. This stigma not only reduces the confidence but also reduces the functional capacity of the patient. Therefore a holistic approach to improve confidence and optimize the potential of the functional capacity is required.

Case Description: A 60 year old male, diagnosed with Adenocarcinoma of Rectum with metastasis of brain, lung and liver was admitted in our Hospital with complains of Fatigue, reduced sleep and on an ECOG level of 3. He was to be treated with 10 sessions of Palliative Radiotherapy.

Intervention: For the 1st 2 days, Patient was advised to walk for 30 minutes 2 times a day and be active as much as

possible. Patient was counselled about his condition and told about the advantage of exercises. A combination of aerobic, strength, balance and flexibility exercises were taught. Baseline assessment was taken on 2nd day and final assessments on 11th day before discharge. Outcome measures used were FACT-F, NRS-Fatigue and 6 Minute walk test.

Results: There was an exponential change in the outcome measures used. FACT-F changed from 20 to 30, NRS from 8 to 5, and 6 MWT from 287 mts to 420 mts. Also patients sleep pattern improved.

Conclusion: It can be concluded that treatment optimizing to cancer survivor's potential, we can bring about a change in his confidence level and functional capacity.

AB38	Role of Functional Electrical Stimulation (FES) on Gait Parameters in Acute Stroke Survivor - A Single Case Design
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Purpose: The ability to walk independently is a prerequisite for most daily activities. Impairments resulting from stroke lead to persistent difficulties with walking and subsequently, improved walking ability is one of the highest priorities for people living with a stroke. So, the present study was conducted to determine the role of FES in gait rehabilitation among acute stroke survivor.

Relevance: Muscle weakness and paralysis, poor motor control and soft tissue contracture are major contributors to walking. FES applied during walking is an effective gait rehabilitation strategy that can lead to improvements in gait performance, walking speed and endurance, balance, activity, and participation post-stroke dysfunction after stroke.

Participant and Methodology: A 44 years male diagnosed with left basal ganglia infarct which leads to right hemiplegia, impaired balance and coordination,

impaired transfer abilities, equinus deformity and abnormal gait pattern was included in the present study. A total 20 treatment sessions (5 days per week/ 40 mins each session) was given to the patient which consisted of conventional post-stroke gait rehabilitation patients along with the application of FES on both exercise and walk mode. The kinetic and kinematic variables of gait were used as a prognostic indicator by using videographic analysis & Wisconsin Gait Scale at Baseline and Post-intervention after 10th and 20th treatment sessions.

Analysis and Results: The data obtained was analyzed by using MS-excel and tables & graphs were made.

Conclusion and Implications: The participant showed reduced circumduction with initiation of swing phase and early development of knee flexion after 20 days of treatment.

Session: Physiotherapy in Neurological Conditions

AB06	Effect of 4 Weeks Training with Elastic Band as Perturbation on Balance Performance In Individuals with Chronic Stroke
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Purpose: Training with elastic band fastened on normal side as a perturbation force have shown significant improvement on balance performance in athletes with and without chronic ankle instability (Kyungmo Han 2009) and in healthy elderly population (R .S .Divya 2013). Elastic band used similarly on the non-paretic side as a perturbation to impose weight bearing load on paretic side in individuals with chronic Stroke is attempted.

Relevance: management of balance impairments in individuals with Stroke

Participants: 40 subjects with Stroke, onset > 6months, ambulating independently with or without assistive aid, no other musculoskeletal/neurological conditions, stable CVS, MMSE>24.

Methods: After ethical clearance, Subjects selected by convenience sampling were grouped randomly into experimental (conventional+ elastic band exercises.) and control (conventional exercises) Elastic band exercises were performed with the band fastened on the non-paretic ankle. subjects were instructed to step forward, backward and sideways. Both groups were trained for 3times/wk for 4 weeks. Pre, post (4th wk) training and follow up (8th wk) assessment was done by Mini BESTest;

COG sway in mCTSIB , Unilateral stance , walk across (%step symmetry) on force plate platform, and Swedish falls efficacy scale.

Analysis: Normality test: Shapiro wilk's test. Within group- Repeated measures ANOVA (parametric) and Friedman's (non parametric) with post-hoc analysis. Between group- Unpaired t test(parametric) and Man Whittney U test (non-parametric) $p < 0.05$ at 95% confidence interval.

Results: Pre-training both groups were similar($p > 0.05$). both groups improved after 4 weeks training and effect was retained at 8th week. Comparison of the change recorded on all the parameters indicated experimental group showed statistically significant greater improvement over control group. ($P < 0.05$)

Conclusion: Balance training in individuals with chronic Stroke for 4 weeks with elastic band as perturbation along with conventional exercises was significantly more effective in improving Balance performance than conventional exercises alone.

Implications: Elastic band is low-Cost & easily available, provides perturbation based balance training in any setup, and as home exercise.

AB07	Effectiveness of Physiotherapy Interventions for Foot Drop in Individuals with Guillian-Barre Syndrome- A Systematic Review
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Purpose: Worldwide, the incidence of Guillian-Barre Syndrome (GBS) is 0.6-4.0 per 100,000. At three years, about 30% of patients with GBS have residual weakness resulting in activity and participation restriction. In those with persistent weakness, foot drop is a common sequel. Individuals with GBS are often treated with a multidisciplinary approach but isolated strategies for foot drop are usually neglected. The need for the review arises from the lacunae in the literature regarding PT interventions for foot drop in GBS.

Relevance: Recovery from foot drop is considered essential for functioning and independence. A systematic review of available literature could provide necessary evidence for therapists to take informed decisions on therapeutic strategies that could aid in recovery from foot drop.

Methods: PubMed, PEDro, CENTRAL and Google Scholar were searched on 24th October 2017 using a comprehensive search strategy, using 63 variations for GBS, Foot drop, and therapies. The search results were

screened by two reviewers using predetermined inclusion criteria. Intervention studies (RCT, Quasi RCT, Non RCT, single group designs) and case reports of patients with acute variants (AMAN & AMSAN) of GBS were included in the review. Analysis: The review attempted to perform a qualitative synthesis of the included studies.

Results: The search yielded 17 articles out of which 5 papers (total of 41 participants) met the inclusion criteria and were included in the review. All studies used ankle

foot orthosis (AFO) as the main line of management for foot drop. None reported the effect of exercise or electrical therapy interventions for foot drop.

Conclusion: AFO remains the management of choice for foot drop in individuals with GBS.

Implications: These findings state the dire need for future research in exercise and electrical therapies for recovery from foot drop in GBS.

AB13	Effectiveness of Physiotherapy Interventions on Tremors in patients with Parkinson's disease- A Systematic Review
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Purpose: Tremor is one of the cardinal symptoms of Parkinson disease (PD) and is known to interfere with activity and participation. Tremor is usually treated with medications and/or surgical interventions. Patients with PD often enquire physiotherapists for strategies to reduce tremor. A systematic review published in 2011 indicated limited efficacy of rehab interventions. The review had a narrow search strategy and included interventions beyond the scope of physiotherapy practice. This review was therefore needed to summarise existing evidence on role of physiotherapy interventions for management of tremor in patients with PD.

Relevance: Review of evidence on management of tremor will enable physiotherapists to address patients' concerns on rehab interventions.

Methods: PubMed, PEDro, CENTRAL and Google Scholar were searched on 24th October 2017 using a comprehensive search strategy, using 38 word variations of Parkinson's disease, tremor and therapies. The search results were screened by two reviewers using predetermined inclusion criteria. Intervention studies (RCT, Quasi RCT, Non RCT, single group designs, pilot

studies) of patients with Parkinson's disease and tremor were included in the review.

Analysis: The review attempted to perform a qualitative synthesis of the included studies.

Results: The search yielded 109 articles out of which eight (representing 83 patients with PD) met the inclusion criteria and were included in the review. Interventions included hand cycling (two articles) and electrotherapy (5 articles using NMES with/without feedback and TENS). All interventions reduced tremor frequency and amplitude by varying degrees. None investigated the effect of tremor suppression on activity and participation.

Conclusion: Recent advances like use of neuroprosthesis and online tremor suppression using EMG showed promising results. The review also highlighted the lacunae in use of exercise interventions for tremor management.

Implications: The results are encouraging but their impact on activity and participation needs to be studied for effective use in clinical practice.

AB38	Effect of Cranial Electrical Stimulation and Rational Emotive Behavior Therapy in Psychological Illness among Chronic Stroke Survivors
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Objectives: Cranial electrical stimulation (CES) and Rational emotive behaviour therapy (REBT) are used as treatment approaches for depression, anxiety, stress, irrational beliefs in general population. In the present study the efficacy of two psycho-therapeutic modalities (CES and REBT) along with conventional Physiotherapy management is evaluated on psychological illness, motor recovery and quality of life among chronic stroke survivors.

Background: Stroke survivors suffer from significant neuro- psychiatric disturbances and these disturbances act as barrier in the motor recovery. Medication is common treatment but it has adverse effects. So there is need to find out effective treatments without or with minimal side effects for gross motor recovery of the patient.

Methods: A total 18 subjects who scored >10 on Beck Depression Inventory Scale and must have score more than 23 on Mini-Mental State Examination scale (MMSE)

and having stroke of duration > 6 months – 2 years were included in the study. Depression, Anxiety, Stress Scale (DASS-42), The Pittsburgh Sleep Quality Index (PSQI), Shortened General Attitude and Belief Scale (SGABS), The Modified Scale for Suicidal Ideation (MSSI) and Stroke Impact Scale (SIS) were used for measuring Depression, Anxiety and Stress, Sleep, Attitude and beliefs, Suicidal thoughts and Gross motor function respectively.

Results: Both the interventions demonstrated improvement in psychological illness present among stroke survivors but it was seen that the CES was more effective than REBT.

Conclusion: The present study concluded that the CES and REBT were effective in improving psychological illness such as Depression, Anxiety, Stress, Attitudes, Belief & Suicidal Ideation and also in improving quality of life among chronic stroke survivors. The CES group provided significant improvement in dealing with psychological illness in comparison to REBT group.

AB42	Effectiveness of gait training with 'walk assist' device on lower extremity control ,balance and quality of life in subacute stroke patients
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Purpose: Restoration of gait is a major goal in stroke rehabilitation. Treatment technique like partial body weight support treadmill is expensive, time consuming and lack sufficient evidence in sub acute stroke. Walk assist is a relatively inexpensive battery operated device for overground ambulation which also provides body weight support. The purpose of the study was to evaluate effect of locomotor training with walk assist device on lower extremity movement control, balance and quality of life in stroke patients.

Relevance: Early mobility is important for faster functional recovery and prevention of secondary complications. The walk assist device provides the opportunity to walk without any external assistance in sub

acute stroke patients.

Methods: Participants-30 stroke patients with hemiparesis in sub acute stage with functional ambulation category 1 and 2 were recruited for the study after informed consent. 15 patients in group A were given training with walk assist device along with conventional physiotherapy. 15 patients in group B received only conventional physiotherapy. They were assessed in terms of Fugl-Meyer Scale, Rivermed Motor Assessment, balance using balance master and quality of life using SSQOL after 6 weeks program. Analysis: Pre-post difference was calculated and between group difference was further analyzed

Results: It was found that both the groups showed statistically significant improvement in fuglmeier motor assessment, sway and SSQOL. But the improvement was significantly more in group A. ($p < 0.001$)

Conclusion: Addition of gait training with walk assist device along with conventional exercise program has significantly greater improvements in lower extremity function, balance and quality of life.

Implication: One of the major advantages of using walk assist is that task-specific gait training can be started during the very early days of rehabilitation by providing patients as much weight support as needed to compensate for their inability to assume an upright position and also give benefit of overground walking

Session: Physiotherapy in Oncology, Geriatrics and Community

AB17	Comparison of the effect on Balance Performance by Balance training on Stable Surface versus Unstable surface in the Community Dwelling Elderly
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Purpose: Experimental studies on Perturbation based training on unstable surface have reported improved balance performance in the elderly. However the control group with whom comparison has been described in these studies have been either only flexibility and relaxation exercise (Avril Mansfield 2010) or no exercise intervention (Luciano Pavan 2013)

Relevance: Balance training in community dwelling elderly.

Method: Participants –60 Normal community dwelling elderly aged > 60 yrs with MMSE > 24. After ethical clearance, subjects selected by Convenience sampling were randomly grouped for task oriented Balance training on either unstable (Group A) or stable surface (Group B) for 2 times/wk for 6 weeks. Assessment of static & Dynamic Balance was done Pre, post 6 wks training and follow up at 9thwk by a) Mini-BESTest, b) mean COG sway in mCTSIB & tandem walk (speed cm /sec) on long force plate, c) overall stability index on force sensitive movable disk and 4) ABC scale.

Analysis: Normality test- Kolmogorov-Smirnov test. Within group comparisons by repeated measure ANOVA (parametric) and Friedman's (non-parametric) with post-

hoc analysis. Between group unpaired t-test (parametric) and Man Whitney U test (nonparametric). $P < 0.05$ at 95% confidence interval.

Results: Pre training analysis both groups were same at baseline ($p > 0.05$). Both groups improved on static and dynamic balance post training ($p < 0.001$) as well as Balance confidence. Improvement in Dynamic Balance scores was greater in those trained on unstable surface than stable surface $p < 0.05$. Effects of training retained post training at 9th week in both groups.

Conclusion: 6 weeks of balance training on either stable surface / unstable surface is effective in improving static, dynamic balance and Balance confidence in community dwelling elderly. However unstable surface is more effective for training in dynamic balance.

Clinical implication: Perturbation based Balance protocol on unstable surface should be included as part of balance training protocol in the community dwelling elderly.

AB17 Awareness about diabetes: A comparison between population of urban areas and urban slums
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Purpose: Diabetes mellitus has become a global healthcare burden with developing countries like India witnessing an unprecedented rise in its cases. The problem of diabetes seems endless as it affects almost all organs of the body. This study aimed to find awareness regarding diabetes and to compare it among those living in urban areas and urban slums.

Relevance: Education can be one of the key components in management of diabetes. By assessing awareness levels, suitable awareness programs can be organised to spread awareness.

Methods: A diabetes awareness questionnaire prepared by the researchers to assess awareness levels was used. The study design was cross-sectional. Participants: 400 subjects (200 each from urban areas and urban slums), diabetic or non-diabetic, were selected using non-probability sampling. Analysis: Descriptive analysis through measures of central tendency (mean) was done.

Results: 41.5% of population of urban slums and 80.0% of urban areas knew that insulin function was impaired in diabetes. 37.5% of population of urban slums and 80.5% of urban areas knew the normal fasting blood glucose level. 72.5% and 74.0% of population of urban slums and 84.0% and 70.0% of urban areas knew that increased urination and increased thirst, respectively, were initial symptoms of diabetes.

Conclusion: The overall levels of awareness are unsatisfactory in both the groups. Even though they may fare better in certain aspect of disease, a deeper understanding with its long-term effects is missing.

Implications: There is a need to promote awareness about diabetes as it can lead to better disease management with fewer complications thereby reducing the burden on healthcare industry.

AB28 Comparison of Dual Task Performance in Young, Middle Aged and Geriatric Population
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Purpose: The purpose of the study was to compare dual task performance of various age groups.

Relevance: Dual-task performance is defined as simultaneous execution of a primary and a secondary task. The dual task performance is associated with functionality and it becomes more complex with age.

Methods: An observational analytical study was conducted at department of physiotherapy. Participants: 45 individuals selected by purposive sampling were divided in three groups depending upon their age. Group A consisted of individuals of 20-40 years, group B consisted of adults, 41-64 years old and group C consisted of adults 65 years and above. Individuals having cognitive decline and known case of Alzheimer's, stroke or Parkinsonism or those with visual impairment were

excluded from the study. Each individual was made to walk at self-selected gait speed under single-task and dual-task conditions. Participants walked for 3 minutes and the distance they covered was recorded. In the dual-task condition, participants responded to various questions while walking. The difference in their speeds of the two sessions was calculated. Analysis: Level of significance was kept at 5%. Kruskal Wallis test was used to compare differences in mean walking speed between 3 groups

Results: The mean difference in speed while walking and dual tasking in Group A was 0.15±0.14 m/s, Group B was 0.17±0.33 m/s and for Group C was 0.37±0.07 m/s. Using Kruskal Wallis test there was significant difference ($K_w=8.87$, $p=0.012$) in speed of walking while single task and

dual tasking between the three groups. Post hoc analysis showed difference between groups A and C and A and C to be significant ($p=0.019, 0.03$ respectively)

Conclusion: There is difficulty in ability to perform dual tasks with increasing age.

Implications: This study shows the geriatric population needs dual task training as part of rehabilitation because impaired dual-task balance performance leads to adverse outcomes such as falls .

AB52	The Effect of Active Stretching of lower limb muscles on balance in Geriatric population: A pilot study
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Purpose: To study the effect of active stretching of calf and hamstring on balance in Geriatric population.

Relevance: According to census 2011, the elderly population in India is around 8.6 % of the total population and falls are amongst the leading cause of mortality and morbidity. Prevention of falls should be the aim of physiotherapists to minimize its ill effects on the health and independence of elderly individuals. As reduced flexibility is one of the causative factor for fall, the stretching techniques can be useful in planning the strategies to prevent fall amongst the elderly. The reduced flexibility should be treated effectively keeping age related changes in mind. There are conflicting results regarding effectiveness of active stretching on improving flexibility. Thus there is definite need to study the effectiveness of active stretching on improving balance and in turn on quality of life in elderly population.

Method: Twenty one (21) community dwelling elderly individuals with tightness of Hamstring and Calf muscle (tested by Passive Knee extension test and Knee to wall test respectively) were screened for the study and informed consent was obtained. Individuals with acute medical illness, neurological conditions, severe cardio-respiratory conditions, any recent lower limb orthopedic

conditions were excluded. After collecting demographic data, participants were assessed for balance (Single leg stance time, Berg Balance Score) and for fear of fall (fall efficacy International Scale). Later the hamstring and calf muscle were actively stretched for 4 weeks (3 sessions/week) and participants were re-assessed for flexibility, balance and fear of fall. Analysis: t- test analysis

Results: There were 21 participants with mean age 60.14 ± 6.20 years and mean BMI of 27.47 ± 4.11 . The results of the study show significant improvement in Knee to wall distance and Passive Knee extension angle after 4 weeks of active stretching protocol. Further it showed significant increase in single limb stance time, Berg Balance Score and decrease in Fear of fall.

Conclusion: Active stretching of lower limb muscles has positive effect not only on flexibility but also on balance and psychological aspect of falling in geriatric population.

Implication: The results of this study will help to develop comprehensive rehabilitation protocol for Geriatric population to improve balance and in turn has an impact on quality of life.

AB53	Effectiveness of exercise based rehabilitation in managing the side effects of cancer treatment: A Randomized Controlled Trial
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Purpose: The side effects of cancer treatment such as fatigue, decline in functional capacity and decline in blood parameters have been found to lead to severe physical impairment. The role of exercise in managing these side effects has not been studied much and the literature regarding the same is scarce.

Relevance: A systematic review published in 2015 highlighted the scarcity of randomized controlled trials published from India investigating the role of exercise in managing the side effects of cancer. Hence this study adds volume to the scarce literature from India the field of exercise oncology.

Methods: A Randomized controlled trial was conducted on 148 patients receiving radical chemo-radiotherapy for stage 3, stage 4a and stage 4b head and neck cancer to evaluate the effectiveness of exercise on functional capacity measured by the six minute walk test, Fatigue by the NCCN (0-10) scale and the blood parameters Hemoglobin and Platelets. Patients were randomized into exercise & control group using concealed allocation using

a computer generated sequence. Analysis: SPSS 16 software was used for data analysis. Repeated measures ANOVA was used for all six minute walk distance and hemoglobin for within and between the groups analysis. Repeated measures ANOVA was used for Platelets & Fatigue scores after log segmentation of the data.

Results: There was a significant improvement in the functional capacity ($p < .001$) and decrease in fatigue ($p < .001$) in the exercise group while the blood parameters did not show a significant difference between the exercise group and the control group.

Conclusion: Our results elucidate that an exercise based training program can play an important role in managing the side effects of cancer treatment.

Implications: This trial shows the benefits of exercise in managing the side effects of cancer treatment. This trial also authenticates the need to further investigate the optimal dose and type of exercise for managing the side effects of cancer treatment.

Session: Physiotherapy in Orthopaedic Conditions

AB05	Effectiveness of Myofascial Release Versus Dry Needling With Common Use of Ultrasound Therapy Over The Gluteal Trigger Points of Footballers
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Background: Gluteus muscle trigger points are of common occurrence in footballers. Acute or chronic overload, direct blow or fall or any other types of sports injury are some of the causes of this pathology. Trigger points are treated or deactivated by various interventions like myofascial release, stretching, ultrasound, ischemic compression, ice and stretch, spray and stretch, wet needling, dry needling. Literature suggests myofascial release technique and dry needling are effective methods of relieving trigger points.

Objectives: The purpose of the study was to compare the effectiveness of trigger point release by myofascial release versus dry needling on gluteus muscle trigger point pain. Methods: 30 football players were included based on selection criteria and randomly assigned in to Group- A (N= 15) & Group- B (N= 15). Group- A received myofascial release technique and Group- B received dry needling for 3 times in a week for 4 weeks. The pre and post intervention value of VAS & TRPTS were used for statistical analysis.

Results: The results after 4 weeks of intervention show

both the treatments were effective but the group receiving dry needling experienced significantly better improvement than the myofascial release group, based on their VAS and TRPTS values.

Conclusion: The study concludes that for gluteus trigger point of the footballers both Myofascial release and dry needling were effective in reducing pain and TRPTS. However effectiveness of dry needling was more as it was evident from the VAS and TRPTS scores.

AB22	Comparative efficacy of Wrist Manipulation, Progressive Exercise program and both combined treatment in patients with Tennis Elbow
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Purpose: Tennis elbow is an overuse injury of common Extensor tendon of wrist which occurs due to repetitive micro trauma. Although the uses of Wrist Manipulation and Progressive Exercises have been established as suitable treatment methods separately in Tennis Elbow Patients in terms of pain relief and rapid restoration of function, but the benefit of one over the other has not been exclusively explored and also the combined efficacy of Wrist Manipulation and Progressive Exercises is yet to be established. Therefore, the aim of the study is to compare the efficacy of Wrist Manipulation versus Progressive Exercises versus both together to improve Pain, Grip Strength and Functional Disability of Tennis Elbow.

Methods: Both gender (N = 90) , Age 30-65 years, presented with chronic Tennis Elbow were selected based on inclusion and exclusion criteria and randomly allocated into 3 groups. All groups received treatment for total

duration of 6 weeks. The outcome measures were assessed using 101 Numerical Pain Rating Scale, Jamer Hand-held Dynamometer and Patient Rated Tennis Elbow Evaluation to measure difference between pre and post intervention Pain intensity, Grip Strength and Functional Disability of Tennis Elbow. Analysis: ANOVA was used to compare the difference among three groups. The level of significance was set at $p < 0.05$.

Results: Within group analysis showed significant improvement over elbow Pain and Functional Disability after 6 weeks of intervention who received combined of wrist manipulation and progressive exercise program.

Conclusion: This study concluded that both group showed improvement in Elbow Pain, Grip Strength and Functional Disability in Tennis Elbow patients. However it was found that the Group who received combined treatment showed better improvement than the group of Wrist Manipulation and group of Progressive Exercises.

AB24	A Comparative Study on the Efficacy of Ischaemic Compression and Dry Needling with Muscle Energy Technique in Patients with Upper Trapezius Myofascial Trigger Points
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Purpose: Myofascial pain is one of the most common examples of musculoskeletal pain arising from myofascial trigger point frequently in trapezius muscle. Ischemic compression (IC) is the application of direct, sustained digital pressure on the myofascial trigger point (MTrP) with sufficient strength and specific time duration, to slow the blood flow and relieve tension of that Muscle energy technique (MET) is another manual approach for achieving tonus inhibition in a muscle. Dry needling (DN),

non-manual intervention where needle is inserted directly into an MTrP.
Participants:

Methods: 30 female patients (18-30 years) with MTrP present over the upper trapezius muscle were recruited and a comparative experimental study was conducted among the individuals who were randomly allocated into two treatment groups. Group A with IC and MET for 3 therapeutic sessions for 1 week and Group B received DN

and MET for 3 sessions for 1 week. The outcome measures were pain pressure algometry to measure pain pressure threshold, Spin T Goniometry to measure contralateral cervical ROM, Neck Pain and Disability scale to measure neck disability.

Analysis: The dependent t test was used to compare the difference between the outcome measures of pre intervention and 1 week after intervention of Group A and Group B. The independent t test was used to compare the difference among the two groups changes in pre-intervention and post-intervention scores. The level of significance was set at $p < 0.05$. The analysis was performed using the SPSS version 17.

Results: Within group analysis revealed that significant improvement ($p > 0.05$) after 1 week of intervention. However when both groups were compared, there was no statistical significant difference has found.

Conclusion: IC and DN were equally effective in combination with MET in patients with upper trapezius MTrP.

Implication: In clinical practice to treat the MTrP we can use DN or IC with same effectiveness.

AB27	Association of Foot Posture Index-6 with lower extremity pain in children
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Purpose: To study the association between foot posture and presence of growing/leg pain in 6-12 year old children of Belagavi city.

Relevance: Slight deviations in foot posture are seen during growth which may cause lower limb pain. This is generally ignored/ unreported or cause unexplored branding it as "growing pain". Therefore, it is necessary to evaluate foot posture & study its association with leg pain in children.

Methods: 1160 children in the 6-12 year age group were randomly screened from schools in a tier II city. Foot Posture Index-6 (FPI-6), was used for evaluating the children. They were also asked questions regarding their daily activity routine & presence of pain. Site of pain & severity of pain was marked by the child on a body diagram in order of severity & the Faces Pain rating scale respectively. Analysis: Statistical tests like ANOVA, Mann Whitney U, Chi square test & Spearman's rank correlation were used to analyse the association of foot posture with

leg pain .

Results: 54.2% of the 6 year age group children had pronated foot whereas 36.9% of 9 year age group had supinated foot. Of the total children, only 16.6% complained of pain, of which night pain was more common in both males & females ($n=168$). Foot posture did not show any significant correlation with presence of leg pain in children.

Conclusion: Leg pain is not significantly related to foot posture. Postural deviations in the foot can exist independently without causing pain & vice-versa.

Implications: Detailed evaluation of leg pain aetiology should be done in children to rule out possible postural deviations in the kinematic chain with emphasis on ankle and foot as it is commonly ignored.

AB29	Correlation of smartphone use addiction with text neck syndrome and sms thumb in healthy young adults
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Purpose: To assess self reported addiction to smartphone use and correlate smartphone use and musculoskeletal disorders(MSDs) in neck and hand in young healthy adults.

Relevance: A smartphone is one of the most popular devices among adolescents. Despite of substantial rise in smartphone use, few studies have shown its potential risks in the development of MSDs. The terms “Text Neck” and “SMS Thumb” can be described as repeated stress injuries and pain sustained from excessive watching or texting on handheld devices for long periods of time leading to damage of muscles, tendon, ligaments or nerves.

Methods: A cross sectional survey was carried out where 100 young healthy college going students were selected by random table sampling, in the age group of 20-25 years with minimum smartphone use of ≥ 1 hour per day. Students with any other medical cause or known condition which could lead to pain in the neck or upper limb were excluded. Students were asked to fill a

proforma with the questionnaires of Smartphone Addiction Scale (SAS), Neck Disability Index(NDI), and Cornell Hand Discomfort Questionnaire (CHDQ) attached. Analysis Level of significance was kept at 5%. Spearman correlation coefficient was used to correlate between the SAS and NDI, SAS and CHDQ respectively.

Results: Spearman correlation coefficient showed a significant moderate positive correlation between both SAS and NDI ($r=0.671$, $p<0.001$) and between SAS and CHDQ ($r=0.465$, $p<0.001$).

Conclusion: The study showed that musculoskeletal problems in neck and hand(predominantly thumb) can be seen in smartphone addicted students which may be short term initially but may later lead to long term disability.

Implications: Students should make an effort to reduce the continuous amount of time spent using a smartphone, and also try to maintain an appropriate posture during its use, to prevent MSD's in upper extremities and neck.

Session: Physiotherapy in Neurological and Paediatric Conditions

AB26	Effectiveness of Virtual Reality-based Therapies in Chronic Peripheral Vestibulopathy - A Systematic Review
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Purpose: Habituation exercises are used in different settings as a tool to enhance vestibular rehabilitation for chronic peripheral vestibulopathy(PVP). Virtual reality (VR) based therapy is an emerging form of habituation exercises. There is limited evidence on the effect of different forms of VR, which limits its use. This review attempts to summarize evidence on different forms of VR based therapies and their effectiveness in rehabilitation.

Relevance: PVP leads to decrease in physical and social functioning which affects the quality of life of the patients. VR as an adjuvant therapy can be used in rehab to develop a motivational, interactive and feasible training

environment.

Methods: PubMed, PEDro, CENTRAL and Google scholar were searched on 24th October 2017 using a comprehensive search strategy, using 32 variations for chronic peripheral vestibulopathy and virtual reality. The search results were screened by 2 reviewers using predetermined search strategy. Intervention studies (RCT, single group pre-post designs and case series) of patients with chronic PVP and VR were included in the review. Analysis- A qualitative synthesis of the included studies was done.

Results: The search yielded 910 articles (207 participants) of which 8 met the inclusion criteria. This review identified 3 categories of VR training-optokinetic(2 articles) and computer-based games(4 articles),immersive environment based therapies(2 article). Most commonly used outcome measure was Dizziness Handicap Inventory (4 studies) and showed positive improvements. The result of one RCT concluded that exposure to dynamic VR environments should be considered as a useful adjunct.

Conclusion: Optokinetics, computer-based, immersive environments were different forms of VR used in rehabilitation and all had positive results on balance, gaze control and gait.

Implications: The results are encouraging but their impact on activity and participation need to be studied for use in clinical practise. Since VR is novel field of rehab more clinical trials need to be undertaken to strengthen evidence.

AB31	Reliability and Validity of Integrated Proprioceptive Screening Scale in Diabetic Neuropathy
Authors	Priyanka Dangi, Vandana Sharma, Shefali Gambhir, Narkeesh Arumugam
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Purpose: To evaluate the reliability and validity of Integrated Proprioceptive screening scale in Diabetic Neuropathy

Relevance: To improve the Rehabilitation outcome.

Methods: This was a correlational study done on 83 subjects between the age group 40-60 years to determine the tester retester, intra tester, inter tester reliability and concurrent valid of IPSS in diabetic neuropathy subjects. This study was conducted in 4 phases. In the phase I tester retester reliability of IPSS was measured. In phase II intra tester reliability was measured. In Phase III, the Inter-tester reliability of the scale was checked two times. In phase IV, the concurrent validity was measured in which IPSS was correlated with the Utah early Neuropathy scale. Analysis: it has both quantitative and qualitative assessment.

Results: For Phase I, tester retester reliability of score was 0.995 and its percentage was 0.995, for phase II, intra tester reliability for score was 0.893 and for percentage it was 0.895, for phase III, researcher & blind observer 1,

Inter tester reliability for score was 0.954 and for percentage was 0.954 and researcher & blind observer 2, the inter tester reliability for score was 0.863 and for percentage was 0.864 and for phase IV, the r value of correlation between IPSS and Utah early neuropathy scale score was 0.336 and between percentages was 0.347 which was non-significant.

Conclusion: The present study has concluded that Integrated proprioceptive screening scale was reliable and valid scale to assess the proprioception in diabetic neuropathy and it can also assess the deficit in the proprioception occurred due the neuropathy.

Implications: To assess early proprioceptive deficit in Diabetic neuropathy for early intervention.

AB36 Efficacy of Electrical Brain Stimulation (tDCS) on Upper Limb Recovery in Stroke Patients:
Review Study
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Background: Stroke is an acute neurological dysfunction with a sudden development of clinical signs and symptoms of brain dysfunction that includes loss of functions in the upper and lower extremities, speech impairment, and cognitive disorders. Transcranial direct current stimulation is a noninvasive brain stimulation that induces specific changes in the motor activity as a function of targeted area of brain.

Objective: To examine the effect of tDCS applied to motor area of the cerebral cortex for the impaired upper extremity in stroke patients.

Method: As per PRISMA guideline, the review study is based on the systemic reviews where effect of tDCS on upper limb recovery. Eligibility criteria: total 7 studies are included in fiction review, Stroke patients were randomly assigned to experimental and control group. Control group received only physical therapy intervention and second groups received tDCS and physical therapy intervention. Outcome: outcomes were on activity of daily living, functional motor ability and other motor outcomes.

A functional evaluation of both groups was performed before and after the treatment using Fugl-meyer assessment (FMA) and an electrophysiology evaluation and motor status score, modified ashworth scale(MAS). Out of 7 studies 5 studies ful fill the inclusion criteria.

Result: The result showed improvement and functional evaluation scores for upper limb functions improved. Fugl-meyer assessment (FMA) score was greater in the tDCS group than in non-tDCS group and MAS score significantly improved upper limb motor functions after applied tDCS and decreases the muscle tone. tDCS in combination with rehabilitative therapy has been suggested for stroke rehabilitation.

Conclusion: tDCS was effective in improving the upper extremity motor function of stroke patients through alternating cortical excitability in the brain.

Suggestion: additional research is warranted on the usefulness of tDCS in the rehabilitation of stroke patients in the clinical field.it is likely that additional education and training will be required.

AB37 Behavioral Abnormalities in Adolescent School Going Children of India- Review Study
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Background: Adolescence is an immense change in the emotions and behavior, visible during 10-19 years of age. Normal adolescent behavior is often moody due to hormonal and physical changes. However, the abnormal behavior is associated with anxiety, depression, and fear of not going to school. Behavioral abnormalities that are seen in them are hyperkinetic disorders, Attention deficit hyperactive disorder, learning disabilities, obsessive compulsive disorder, depression, oppositional defiant disorder and conduct disorder.

Aim: To review the incidence and patterns of behavioral abnormalities in adolescent school going children.
Method: As per PRISMA guidelines, the review study is based on systemic reviews on adolescent group of school

going children. Behavioral problems or mental health illness upgrades the risk of repeating a class and dropping out of school. The result indicates the incidence of hyperkinetic disorder is 1-6%, an attention deficit has motor hyperactivity and impulsive behavior. 4-6% is affected by learning disorders such as dyscalculia and dyslexia, while 4-5% of them suffer from depression, which is more prevalent in girls than boys. The outcome measures used are DSM (Diagnostic and statistical manual for mental disorders) which evaluates behavior abnormalities in school going adolescents. Impairment corresponding with the abnormalities was assessed, notable disability was found in adolescent group. Total 8 studies were included in literature review. Out of which 5

studies full fill the need of the study.

Conclusion: A number of researches support that the school going adolescents are suffering from behavioral abnormalities, and the articles also explain that the IQ level is decreased and cognition is also impaired.

Suggestion: From the review it is suggested that physiotherapy is needed for cognition and as well as behavior abnormalities. Methods which can be used are REBT, CBT, and NLP.

AB46	Correlation between Reaction Time and Visual Attention with Balance and Fear of Falls in Elderly Population
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Purpose: Previous studies have emphasized the neuropsychological factors associated with falls, adequate evidence relating the reaction time and visual attention with fear of fall is not available. Thus, a study establishing a correlation between Reaction Time and Visual Attention with Fear of Falls in Elderly Population is required.

Relevance: The study establishes a correlation between Reaction Time and Visual Attention with Fear of Falls in Elderly Population. This will provide evidence for designing more focused interventions for improvement of balance amongst community dwelling elderly.

Methods: It is a correlational study. One hundred subjects of elderly population were obtained by convenience sampling. The inclusion criteria are age 60 years and above, capability to walk with or without any support accessories such as a cane or walker, and ability to understand spoken instruction. The exclusion criteria are neurological disorders, visual impairment / uncorrected vision and chronic alcoholism. The subjects were assessed for reaction time, attention, balance and fear of falling by using Visual Reaction Time test, Trail Making Test, Berg Balance Scale, Timed Up and Go test, Functional Reach Test and Activities-specific Balance Confidence scale. Analysis: Data is analysed through Pearson's Correlational test.

Results: Visual Reaction Time is positively correlated with Trial Making Test and Timed Up and Go test. Visual Reaction Time is negatively correlated with Berg Balance Scale, Functional Reach Test Activities-specific Balance Confidence scale. Trial Making Test is positively correlated with Visual Reaction Time and Timed Up and Go test. Trial Making Test is negatively correlated with Berg Balance Scale, Functional Reach Test, Activities-specific Balance Confidence scale.

Conclusion: There is a correlation between reaction time and visual attention with balance and fear of falls in elderly population.

Implication: This study will provide evidence for designing more focused interventions for improvement of balance amongst community dwelling elderly.

Session: Physiotherapy Education, Cardiovascular disorders and Women's Health

AB04	Effectiveness of Flipped Classroom and Traditional Classroom in Improving Knowledge Gain and Higher Order Thinking, an Experimental Study In Physiotherapy Students
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Background: In health science education, the concern of most educators is to incorporate higher order thinking (HOT) and active learning process. With the same purpose, an experimental study was designed to measure the effectiveness of flipped classroom (FC) method and traditional classroom (TC) method.

Method: Approval of the university's ethical committee was sought prior to the commencement of this study. The effectiveness of the teaching methods was measured using an examination and self-developed Satisfaction-Perception Questionnaire. Hundred and thirteen Physiotherapy students were randomly allocated to FC (n=57) and TC (n=56). TC group attended lectures and tutorials, while the FC group was provided with the recorded lecture 7 days before their participation in the interactive discussion. Each group received equal hours of face to face contact. The researchers who measured and analysed the outcome variable were blinded to the groups. The educators underwent an in-depth interview to discuss their experience regarding the teaching method they were involved in.

Results: The result shows no significant difference ($p = 0.939$) between the two groups with respect to mean test score. Nevertheless, the percentage of students scoring a pass grade were more in FC (85.7%) than in TC (76.9%). On the contrary, students' in TC reported a higher level of perception and satisfaction as compared to FC. Familiarity, favouritism and rote learning style habits of students could have led to the positive feedback towards TC compared to FC. An in-depth interview of the educator in FC revealed poor active learning habit of students attending the interactive discussion session. This study therefore failed to demonstrate effectiveness of FC over TC in knowledge acquisition or HOT.

Conclusion: It can be concluded that, although the FC model targets to improve critical thinking skills in students, it may be influenced by sociocultural and regional learning habits.

Students should perhaps be given a longer exposure to FC method to ensure compliance.

AB20	Pelvic Floor Function and Fitness: Viewpoint of Middle Aged Women
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Purpose: Pelvic floor functions to support the internal organs, tightens & relaxes the sphincters openings. Physiotherapists often come across patients suffering from pelvic floor dysfunction. Knowledge of pelvic floor is required for better Quality of Life in females. So the need arises to know how much their knowledge about pelvic floor is.

Relevance: This is a unique study focusing on finding the awareness and knowledge regarding pelvic floor among middle aged women as if they have knowledge, they will seek medical or physiotherapy intervention for it.

Participants: 200 women aged 40 to 60 years were approached from Gujarat and 119 women responded.

Method: A cross-sectional survey was conducted using a reliable and valid Antwerp Pelvic Floor Knowledge Questionnaire. This 42-item structured questionnaire consists of questions regarding demography, pelvic floor, functions, dysfunctions, physiotherapy & sources of information regarding their current knowledge. Analysis: Descriptive statistics were generated for all variables.

Results: The response rate was 59.5%. They rated their

knowledge on VAS(0-10), about the pelvic floor between 2 to 3, which is quite low. Around 73% women could correctly locate pelvic floor but didn't know its function, 50% of them lacked knowledge about status & role of pelvic floor muscles immediately, 1 month & 6 months after delivery. More than 60% were aware of prenatal & postnatal physiotherapy but unaware of physiotherapy for pelvic floor problems. More than 70% of the women never received information nor searched and requested for more information about pelvic floor.

Conclusion: The results showed that the knowledge about pelvic floor function & fitness was quite deficient among middle aged women and they expressed interest in obtaining more information to avoid pelvic floor problems.

Implications: The present study may change thinking about pelvic floor function and help in early detection of dysfunction among women by imparting education at an early age and making them aware about physiotherapy for pelvic floor dysfunctions.

AB51	Comparing the Effectiveness of the Bandaging techniques-Circular Bandaging and Figure of Eight Bandaging in Patients with Lymphedema in Lower Limb
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Background: Lymphedema affects approximately 140 million people worldwide. The main line of treatment for lymphedema is Complex decongestive physiotherapy (CDP) which comprises of Manual Lymphatic drainage, Multilayer short stretch compression bandaging, Anti DVT exercises, Skin care, Nutritional care and Compression garments. Multilayer short stretch bandaging has been proved to be a vital component in CDP. Bandaging can be done in several ways. The most common ways in which the multilayer short stretch compression bandaging is performed are 'Circular bandaging' and 'figure of eight bandaging'

Objective: To compare the effectiveness of two bandaging techniques namely circular bandaging and figure of eight bandaging in patients with lymphedema in their lower limbs

Method: In this pilot single blinded trial, patients full filling the inclusion criteria were included in this study. On the first day before the intervention was started, the primary investigator measured the circumference of the affected leg starting from the tip of the second toe till the level of the groin using an inch tape, then on the last day of treatment the measurement is taken again at the same level and the difference in circumference is noted (in cms) The choice of bandaging technique is chosen in a randomized manner and it is blinded from the investigator. The sample size for the study is 16. Outcome

measure: The reduction in the edema of the lower limb was measured using inch tape measurement (in cms). Statistical analysis was done using Mann-Whitney U test.

Results: Median difference in circumference between the treatments is significant only at the levels of 5, 6 and 7 (regions above the mid anterior aspect of the leg to the upper aspect of thigh) with p value less than 0.05. P value is obtained by Mann-Whitney U test.

The median difference in levels 1, 2, 3 and 4 (region from the tip of second toe to the mid anterior aspect of the leg) are not very significant and hence there is not much difference between these two bandaging techniques at these levels. There is not much significant difference between the two bandaging techniques with respect to the region from the tip of second toe to the mid anterior aspect of the leg, whereas figure of eight bandaging shows better edema reduction in the thigh.

Conclusion: There is not much significant difference between the effectiveness of the both the bandaging techniques in patients with lymphedema at the regions from the tip of the second metatarsal to the mid anterior aspect of the leg whereas there is significant difference in the efficiency of the bandaging technique at regions above the mid anterior aspect of the leg to the upper aspect of thigh, where Figure of eight proves to be the better technique.

Session: E-Poster Presentations

AB09 Integrating Health Promotion in Regular Physiotherapy Practice: A case report
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Purpose and Relevance: Physical fitness is widely recognized to reduce the risk of chronic disease related morbidity and mortality. Improving physical fitness has been recognized as an integral component of health promotion strategies. Health promotion is an emerging domain within the scope of physiotherapy practice. Global initiatives endorsed by WCPT have emphasized upon the need to offer health promotion strategies to all patients requiring physiotherapy interventions. Integrating health promotion within the context of regular physiotherapy services is challenging and reports regarding successful integration are limited. An attempt to integrate health promotion in an older adult is presented in this case report.

Case Description and Intervention: Mr X, an 89-year-old male, was referred to physiotherapy for management of low back pain. He presented with complaints of intermittent back pain (aggravated by activity) for 2-weeks and localized to right buttock-region. ICF framework for using the geriatric core sets was used to evaluate him and included VAS, flexibility, 30-second sit to stand test (30-Sec STS), 4-stage balance test, TUG and 6-

minute walk test as outcome measures. The evaluation indicated presence of right piriformis-syndrome; reduced overall flexibility, lower-extremity strength, cardiorespiratory endurance; impaired balance and increased risk of fall; cumulatively leading to limited independence in activity and participation. In addition to pain management, the intervention program emphasized a focus on improving physical fitness using ACSM guidelines for older adults.

Results: Significant improvements were observed in VAS (8 to 3), 30-Sec STS (5-times to 8-times), 4-stage balance test (From two-feet position to half-tandem standing position), TUG (58-seconds to 26-seconds) and 6-minute walk test (88m to 150m). In addition, Mr X reported independence in indoor mobility and eagerness to continue exercise under supervision.

Conclusion and Implications: It is feasible to integrate health promotion in everyday clinical practice. Integrating health promotion is likely to augment therapeutic goals, improve health outcomes and overall quality of life.

AB11 Immediate Effect Of Thoracic Distraction Thrust Versus Upper Thoracic Crossed Hand Manipulation In Mechanical Neck Pain- A Randomized Clinical Trial
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Purpose : To compare immediate effect of thoracic spine distraction thrust and upper thoracic crossed hand manipulation on pain, ROM and disability in individuals with mechanical neck pain.

Relevance: Neck pain is one of the largest cause of sick leave and millions of people experience neck pain at some point of life. Patients with neck pain are common to visit the outpatient physical therapy. It was hypothesized that mechanical dysfunction of the cervical spine very commonly leads to neck pain. The focus of any

intervention for neck pain is to decrease the pain and improve the function of cervical spine. Various Thoracic spine thrust manipulation are also recommended for management of mechanical neck pain. Effective thrust manipulation saves time and gives effective management of mechanical neck pain hence this study was undertaken to compare the two different thrust techniques.

Methods : 40 subjects (mean age of 27.35±6.78 years) with mechanical neck pain were recruited from OPD of KLES Dr Prabhakar Kore Hospital and MRC Belagavi.

Subjects were allocated to one of the two groups. Group A (n=20) received thoracic spine distraction thrust and Group B (n=20) received upper thoracic crossed hand manipulation. Both the groups were also given TENS, hot moist pack, stretching and exercises. Outcome measures used were Numerical pain Rating Scale (NPRS), cervical ranges, and Northwick Park Neck Pain Questionnaire (NPQ). The outcome measures were assessed pre and post intervention.

Analysis: To assess changes within each group after the intervention period and between groups, the data were used and analysed with the student's-t-test.

Results: Pre and post mean difference values in Group A were 2.00 ± 0.86 and 11.13 ± 5.39 , for NPR scores and NPQ scores. Whereas, in Group B pre and post mean

difference values were 2.00 ± 0.73 and 10.54 ± 10.05 for NPR scores and NPQ scores. In Group A and Group B there was improvement seen in cervical ranges. The comparison within groups showed statistical significant difference ($p < 0.05$) in all the outcome measures in both Groups. There was no significant difference seen when between group comparisons was done in all outcome measures.

Conclusion: Thoracic spine distraction thrust and upper thoracic crossed hand manipulation, both were seen to effective in pain, ranges and disability.

Implications: Both Thrust techniques can be effective in decreasing pain, improving functional ability and increasing cervical range of motion in mechanical neck pain.

AB15	Effectiveness of Low level laser therapy on pain and functional mobility in patients with Ankylosing Spondylitis: A review of literature.
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Purpose: Ankylosing Spondylitis (AS) is an autoimmune disease in which tumor necrotizing factor-alpha (TNF- α) is understood to have a significant pro-inflammatory role. Low level laser therapy (LLLT) is believed to reduce or modulate TNF- α levels and this effect could be useful in treating patients with AS. Though a few reports are available on LLLT in patients with AS, no review has summarized its effects. This review aims to summarize the evidence on LLLT in management of pain and functional mobility in AS.

Relevance: LLLT is a commonly used modality to treat chronic joint pain disorders. There is limited evidence on the effect of LLLT in patients with AS. This review will help provide a better outlook on the use of LLLT in this population.

Methodology: Computerized databases were searched from their start to September 2017 on Medline, PEDro and CENTRAL via an extensive search strategy, using 30 variations for AS, LLLT, Pain and functional mobility. Search results were expanded with articles from Google scholar and Research Gate. Search was independently reviewed by two reviewers on methodological quality based on the

inclusion and exclusion criteria. Analysis: A qualitative synthesis of the included articles was performed.

Results: Seven articles were identified from the search, of which 3 papers (two RCTs and one case report) representing 87 patients met the criteria and were included in the review. The LLLT group showed significant reduction in pain in both RCTs. When compared with the placebo group, only one study reported statistically significant difference. None reported change in functional mobility.

Conclusion: Evidence from this review on the effect of LLLT in management of pain in patients with AS is inconclusive.

Implications: Use of LLLT as an adjuvant therapy in management of pain in patients with AS is promising. More controlled trials are needed for evidence informed healthcare in using LLLT for patients with AS.

AB23 Application of Virtual Reality based Rehabilitation in physiotherapy: A Scope Review.
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Purpose: To summarize the scope of VR and Rehabilitation in different conditions with respect to physiotherapy.

Relevance : VR offers the opportunity to bring the complexity of the physical world into the controlled environment in the game. The application of VR/gaming systems to promote s physical activity has been termed exer-gaming. Gaming and physical activity improves multiple domains in health spectrum

Methods: A scoping review involves the synthesis and analysis of the existing research literature with the aim of providing greater conceptual clarity about VR and application, a systematic review searching databases from January 2000– 2017 using key search terms in PEDro.

Analysis: 12 systematic reviews were obtained and out of which 9 meets the exclusion criteria, in different physiotherapy and investigating the effects of VR/gaming

system used by the therapists with neurological conditions on activity limitations, body function and physical impairments and cognitive and emotional well-being met the selection criteria.

Results: All the reviews support the application of VR to improve balance, strength, mobility, gait, motor control, upper limb and lower limb function, cognition and social well being.

Conclusion: Virtual reality is a promising intervention with several potential applications in the rehabilitation setting. Studies to date demonstrate some efficacy, but there is a need for larger, well-controlled studies to show clinical and cost-effectiveness.

Implications: VR game applications are novel and potentially useful technologies that can be combined with conventional rehabilitation for a better outcome in patients.

AB25 Correlation of Flat foot and Ankle-foot function in overweight college students of urban Kolkata.
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Purpose: Overweight from young age may develop flat foot and abnormal ankle-foot function. So the purpose of this study was to find the correlation between indicators of overweight, flat foot and ankle foot function in young adults.

Methods: Hundred college students of both genders (47 males and 53 females) between the age group of 18-25 years were included from Nopany Institute of Healthcare Studies, Kolkata. Measurement of overweight was done by sagittal abdominal diameter and waist circumference. Flat foot was measured by navicular drop test and plantar arch index and Foot and Ankle ability measure (FAAM) was used to assess ankle-foot function. Analysis: Correlation between measured values of sagittal abdominal diameter, waist circumference, navicular drop test, plantar arch index and FAAM were analysed using Pearson correlation test. Results had been considered significant at $p \leq 0.05$.

Results: The present study showed that there is correlation between waist circumference and navicular drop test, waist circumference and planter arch index, sagittal abdominal diameter and navicular drop test, sagittal abdominal diameter and plantar arch index, waist circumference and foot ankle ability measure, sagittal abdominal diameter and foot ankle ability measure. There was no correlation between navicular drop test and foot ankle ability measure, plantar arch index and foot ankle ability measure.

Conclusion: Correlation between overweight and flat foot, overweight and ankle foot functions was established in this study but there is no correlation between flat foot and ankle foot functions.

Implication: It was found that overweight and obesity may affect the occurrence of flat foot and thus there is a need for control of obesity to prevent flat foot and related complications.

AB35	Cross cultural adaptation and assessment of Nordic Musculoskeletal Questionnaire Gujarati Version.
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Purpose: Intention of this study was to translate Nordic Musculoskeletal Questionnaire (NMQ), which is in English language into Gujarati language for assessment of musculoskeletal symptoms of an individual.

Background: NMQ is widely used questionnaire for health survey and recording of musculoskeletal symptoms in general population as well as in various occupational settings. NMQ covers nine anatomical regions along with a body chart of specified areas and questions relating to trouble in last 12 months and 7 days; and limitation in functional area in last 12 months. NMQ has been translated and adopted in various languages for application in different countries and culture.

Methodology: Cross cultural adaptation of instrument was made using following steps: forward translation, backward translation expert committee review and; pre testing and final version. Translated questionnaire was tested on randomly selected 50 participants. Data was collected twice with 2 days interval. Analysis and Results: Awaited.

Implications: If cross cultural adaptation and assessment found to be satisfactory, Nordic musculoskeletal Questionnaire Gujarati version may be useful for physiotherapist and individuals for assessing musculoskeletal symptoms.

AB39	Factors Associated With Fear of Falls in Indian Elderly.
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Purpose: Fear of fall (FOF), initially believed to be one of the key symptoms of 'post-fall syndrome' is also found among elderly persons who have never experienced a fall. Fear is protective when the older adult is more careful to avoid risk, but it becomes a risk itself when it imposes limitations and a lack of self-confidence. Research suggests that falls prevention programs should aim at reducing the risk factors associated with falls. FOF is one of such modifiable risk factors. Better understanding of factors associated with FOF is essential for the development of targeted and effective management of it, and consequently the prevention of falls. Given the uniqueness of the life style of the elderly in India, as home, social and essential cultural activities necessitate sitting on the floor and daily life requires visiting unorganized markets to buy food and visit congested places of worship, the purpose of the study was to find from the existing literature, the factors associated with fear of falls in Indian elderly.

Relevance: Research evidence has shown that falls can be prevented if preemptive action is taken by addressing

factors that are associated with the FOF. Accordingly, it is important that we have a strong understanding of the construct of FOF and all the dimensions associated with this problem, especially in the context of specific culture and lifestyle.

Methods: All the studies obtained after a web search on Pubmed and Google Scholar (advanced search) using keywords, "fear of falls, elderly, India, factors associated" were reviewed for the factors associated with fear of falls in elderly living in India. The studies which described fear of falls and established its relationship with various biological, social or psychological factors were included while those studies which discussed the factors associated with fall and specific diseases were excluded. Analysis: All the factors associated with Fear of falls were categorized either as Biological, Social or Psychological and were discussed in detail.

Results: Pubmed revealed 475 studies, out of which only two studies were selected based on the inclusion criteria. Advanced search on Google Scholar presented 69 studies, of these only 5 studies were found to be relevant. One

study was common in the two searches. Fear of falling was found to be associated with decreased muscle performance, balance performance, previous fall, low back pain, functional mobility, depression, restriction of activities of daily living, educational status, family type and Quality of Life.

Conclusion: Very few Indian studies are available on the factors associated with Fear of falls. Future research should aim at better understanding of this construct in the Indian context.

Implications: If interventions are directed towards relevant biological, psychological and social factors related to FOF, and are started at the right time, grievous injuries as a result of falls can be prevented and the quality of life can be improved during the ageing years. More studies are required to establish definite factors associated with fear of fall in elderly living in India.

AB47	Integrating Evidence in Treating the Whole Rather than the Part: A Case Report
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Purpose and Relevance: One of the tenets of effective healthcare delivery is to treat the patient, not just the disease. Modern medicine recognises this philosophy as Patient-centred care that focuses on appreciating a patient's illness as a unique experience shaped by his or her particular psychosocial context. In a busy clinical setting, it is common place to focus our interventions to primary impairments that the patient presents with. In chronic impairments, the consequences on activity and participation could be well beyond the obvious. Through this case study, we attempt to highlight the effect of chronic impairment on functional abilities and how we could integrate evidence in treating the person as a whole.

Case Description: Mrs. X (50 years), self-referred to physiotherapy department for treatment of a wound in her left ankle. Examination revealed chronic non-healing venous ulcer of 8 yrs duration. Based on evidence, LASER (3.6 J/cm²) and TENS were offered as treat of choice for the venous ulcer and associated pain. Interaction with the patient during therapy session revealed significant compromises in activity and participation (basic bed mobility, quitting her employment and hobby of dancing, socialization), primarily due to fear and past experiences in

the wound breakdown. She was offered counselling (education about the health condition, addressing fear and assisting in self-realization about undue compromises she has made with her activity and participation), gradual introduction to therapeutic exercise, activities and work hardening.

Results: By eight weeks of intervention, Ulcer healed completely. More importantly; she developed capacity to walk for more than 30 minutes at a stretch, resumed a few of the activities that she originally avoided, had a sense of satisfaction and belief that she could resume her occupation.

Conclusion: The strategy of 'treating the whole rather than the part' provided greater benefits.

Implications: For physical therapist, who often interact with patients with chronic impairments, it is pertinent to be aware of the challenges chronic impairments can pose to activity and participation and be prepared to treat the 'whole rather than the part'

AB49 Physical activity levels among childhood and adolescent cancer survivors.
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Purpose: Childhood cancer survivors are assumed to have considerably low physical activity (PA) and diminished functional capacity than healthy peers. The extent to which PA is diminished is not known. This review was therefore planned to determine the physical activity levels in childhood and adolescent cancer survivors.

Relevance: The results will enable a better understanding of physical activity levels in this population, which in turn would aid in identifying effective solution for promoting physical activity.

Methods: A comprehensive search strategy with variations of keywords was used to search PubMed, PEDro, and Google Scholar. The search results were screened by two reviewers using predetermined inclusion criteria. Cross sectional and cohort studies were included in the review. Analysis: The review attempted to perform a qualitative synthesis of the included studies.

Results: The search yielded 29 studies, of which only 1 met the inclusion criteria. The results indicated that there was no significant difference between the cancer survivors and healthy peers.

Conclusion: No significant level of physical activity difference was found between childhood and adolescent cancer survivors. More studies are required to decide the level of physical activity in the childhood and adolescent cancer survivors.

Implications: Level of physical activity in childhood and adolescent cancer survivors need to be re-looked. A future research in this area is required for further understanding.