Workshops

1- Virtual Reality for mobility in stroke patients

Anouk Lamontagne
Virtual Reality and Mobility Laboratory, Centre for interdisciplinary research in Rehabilitation of Greater Montreal (CRIR), JRH-CISSS Laval, Laval, Canada

School of Physical and Occupational Therapy, McGill University, Montreal, Canada

2- Screening of Chest Pain in Physical Therapy Practice

Ali Albarrati

College of Applied Medical Sciences, King Saud University, Riyadh, Saudi Arabia

Medical screening is a vital component of the clinical examination. Cardiovascular screening or risk assessment is necessary for outpatient physical therapy practitioner. As physical therapists continue to advocate for direct access, screening for cardiovascular stability is warranted for patient safety, appropriate referral, and timely medical management.

Chest pain is commonly reported in patients with CVD. However, there are other causes produce similar manifestations. Physical therapist is a healthcare provider who should have basic skills to recognize chest pain related to CVD and determine when patients should be referred to a physician for further investigations.

The aim of this workshop is to highlight the most common causes of chest pain and how to identify pain related to cardiovascular illness.

3- Serial Casting for children with cerebral palsy:

Nedal Abu Salim
Faculty of applied medical sciences, Jordan University of Science and Technology

The general purpose of this work shop is to apply and demonstrate the effect of serial cast on the children with spasticity (equinovarus deformity) according to the evidence base and how to improve alignment and reduce the contractures in ankle joint muscle to help children with spastic CP to decrease their muscle tone and range of motion by using a non-surgical procedure which is used to hold and stretch muscles, which will help children and adults to improve their range of motion in lower limb, so they can perform daily activities with less difficulty, that the cost and time is less than surgical procedure and safe intervention.

4- Sacroiliac Joint Manual Therapy

Ibrahim Al-tubasy

Physical Therapy department, University of Jordan, Amman-Jordan

Aim of the course/ workshop	To identify patients with low back pain that have sacroiliac joint dysfunction and to provide the appropriate treatment to resolve this problem.
Objectives	Understand the movement of the Sacroiliac joint Apply examination techniques to identify patient with SIJ dysfunction. Apply grade V mobilization techniques to treat SIJ dysfunction Apply muscle energy techniques to treat SIJ dysfunction
Brief description of course/ workshop	This workshop provides physical therapist with biomechanical understanding of the movement of the SIJ and it will allow therapists to identify patients with movement dysfunction of the SIJ and to apply the appropriate treatment techniques.

5- Introduction to Manual therapy techniques:

Thamer Ahmad Abdul Kareem Altaim

Physical Therapy and rehabilitation department, Jouf University, Jouf, Suadia Arabia

Introduction: Manual therapy techniques enable physiotherapist to facilitate relaxation, improve movement dysfunction. Therapeutic touch through correct manual handling techniques can be used to reduce signs and symptoms of soft tissue injury, demonstrate empathy, and build trust. This workshop will focus on professionalism and safety with introductory manual techniques for pain reduction and restoring normal function. Learning Objectives: On completion of this workshop, you will be able to:

- Recognise the importance of correctly evaluating the patient's functional status.
- Understand and easily describe normal joint mechanics.
- Understand and correctly use terminology describing movement dysfunctions.
- Safely perform evaluation techniques for diagnosis of movement dysfunctions.
- Correctly perform treatment techniques for specific movement dysfunctions.
- Anatomy, mechanisms of injuries that affect spine and extremities
- Biomechanics of human body.
- Arthrokinematics.
- Indications and contraindications of Manual Therapy.
- Principles of examination and critical clinical reasoning process.
- Palpation skills.
- Communication skills.
- Physiotherapist posture and skills.
- Contact points of physiotherapist's hand

6- Kinesotaping for sport injuries:

Yousef Al-bukhary

By the end of the workshop:
1- The participants will have acquired knowledge on the available research and evidence regarding the effects of this tape,
2- Participants will leave with a working knowledge of the tape properties, its practical possibilities and the various applications and concept of each one (muscles, ligaments, correction, fascia and lymph).

Contents of the workshop:

- Theoretical Introduction (duration 1hour): History background and the idea behind developing medical Kinesiology Tape
- Hypotheses (the original and new)
- The evidence
- Reasons to tape
- Indications and contraindications
- Important practical Items: (different tape shape, stretching, handling of tape,
- applies and removes the tape and success tape results) Sport Injuries (Types and common sport injuries)
- Practical Part (duration 3hours): The concept of various tape applications (muscles, ligaments, correction, fascia and lymph).
- Applying of Kinesiology tape on different sport injuries

7- Muscle Energy Techniques:

Thaer Abu Khurma

Elements of MET have been described and documented for many years. Fred Mitchell Sr. D.O., F.A.A.O. is generally given credit for developing the MET system in its modern day form.

Muscle Energy offers a complete approach to diagnosis and treating somatic dysfunction with an arsenal of both direct and indirect techniques.

With MET, the patient performs an isometric contraction wherein the following physiologic changes occur:

- Golgi Tendon Organ activation results in Direct Inhibition of agonist muscle
- A reflective Reciprocal Inhibition occurs with respect to the antagonistic muscle.
- As the patient relaxes, agonist and antagonist muscles remain inhibited allowing the joint to be moved further into the Restricted Range of motion.

Muscle Energy Technique can be used whenever somatic dysfunction is present and/or whenever there is a need to normalize abnormal neuromuscular relationships; improve local circulation and respiratory function; lengthen restricted muscles and or mobilize restricted joints.

In this work shop you will be introduced to history, application, theory and technique of Muscle Energy. The application will be demonstrated and applied in class to a specific areas of the body. You will be taught proper technique and then guided through practical application with a high teacher to student ratio to promote the full understanding of the material in action.

Conference proceedings

Neurology Sessions

1- Virtual reality tools for gait assessment and rehabilitation in persons with acquired brain injuries: successes, challenges and future perspectives.

Anouk Lamontagne, PhD, PT

Virtual Reality and Mobility Laboratory, Centre for interdisciplinary research in Rehabilitation of Greater Montreal (CRIR), JRH-CISSS Laval, Laval, Canada

School of Physical and Occupational Therapy, McGill University, Montreal, Canada

BACKGROUND: Virtual reality (VR) allows creating ecological scenarios for assessment and training of complex motor tasks. While there is emerging evidence on VR effectiveness for gait rehabilitation, the complexity, high cost and poor accessibility of VR systems can limit its use in clinical settings. Our team is exploring the use of low-cost VR solutions made possible with advances in the games industry and their applicability to locomotor rehabilitation. More specifically, we: (1) developed a VR assessment to quantify goal-directed navigation deficits in post-stroke unilateral spatial neglect (USN); (2) identified barriers and facilitators to the use of VR for USN evaluation in the clinical setting; (3) examined the impact of a low-cost omnidirectional treadmill on locomotor adaptations and (4) developed a VR intervention protocol involving low-cost VR equipment to promote community ambulation after stroke.

METHODS: Low-cost immersive VR technologies and open-source game engines were used. In study 1, stroke participants with and without USN were assessed while navigating towards virtual shopping items located in different locations. In study 2, barriers and facilitators were identified using focus groups involving clinicians. In study 3, body kinematics were contrasted between walking on an omnidirectional treadmill vs. overground in healthy young participants. In study 4, an integrated knowledge translation approach was used to develop a VR training toolkit for community ambulation rehabilitation after stroke.

RESULTS: In study 1, the VR assessment revealed greater heading errors and navigation times in participants with USN. In study 2, several barriers and facilitators to using VR for USN assessment were identified, including personal, institutional, client suitability and equipment factors. In study 3, different strategies for speed adaptation (cadence and/or step length) and

trajectory reorientation (temporal coordination of head, thorax, pelvis) were observed during treadmill vs. overground walking. In study 4, scenarios targeting different dimensions of community ambulation (e.g. endurance, speed, postural transitions, traffic, cognitive load) were developed, allowing participants to train according to individually-tailored goals while progressing through levels of increasing difficulty/complexity.
CONCLUSIONS: Low-cost VR tools show great potential for assessment and training of locomotor disorders. Notably, results show that VR can identify visual-perceptual deficits in post-stroke USN and their impact on goal-directed navigation. Addressing the identified barriers/facilitators could assist the adoption of VR assessment tools in clinical settings. Locomotor adaptations in VR, however, differ to some extent from those observed in the physical world. As the technology is rapidly evolving, future research should focus on not only the validation of VR tools but also on developing training paradigms exportable to different VR systems.

2- **The Effect of Stem Cell Therapy and Physical Therapy Exercise on Balance and Gait in People with Multiple Sclerosis: A Pilot Randomized Controlled Trial**

Alia Alghwiri; Fatima Jamali; Mayis Aldughmi;; Hanan Khalil; Alham Al-Sharman; Abdullah Awidi
faculty of Rehabilitation Sciences, University of Jordan

Background: People with Multiple Sclerosis (PwMS) experience a wide range of disabilities which negatively impact their quality of life (QOL). Several interventions have been used in PwMS such as stem cell therapy and physical therapy exercises to improve their QOL. However, there is a limited evidence on the combined effect of both interventions on balance and gait in PwMS.

Purpose: The purpose of this study was to explore the effect of combining physical therapy exercises (PTE) and mesenchymal stem cells (MSCs) injections on balance and gait in PwMS.

Methods: Participants were allocated to either PTE, MSCs, or a combined group after going through balance and gait assessment as well as MS severity examination usingthe Activities-specific Balance Confidence scale (ABC), Falls Efficacy Scale International (FES-I), Berg Balance Scale (BBS), Dynamic Gait Index (DGI), Timed Up and Go (TUG), 6-minute walk test (6MWT), and the Expanded Disability Status Scale (EDSS) respectively. Participants in the PTE group received 2 sessions per week of a supervised exercise program for 3 months.

The MSCs group received stem cell injections once a month for 3 months. The third group received both interventions.

Results: Thirty-nine PwMS (female =56%) with a mean age of 36.6±9.9 and mild to moderate MS severity (EDSS=3.9±1.9) participated in this study. For PTE alone and MSCs alone groups, there was no significant differences in the total score of balance and gait measurements at 3 months. For the third group, there was a significant improvement at 3 months in the ABC (P= .005), the FES-I (P= .038), the BBS (P= .016), and the DGI (P= .044). The total score of TUG and 6MWT were not significantly different between baseline and 3 months in the third group.

Conclusions: The findings highlight the importance of combining mesenchymal stem cells therapy injections and physical therapy exercise programs in improving balance and gait in people with MS. This study provides important information to guide healthcare professionals in improving balance, gait and reducing MS disability using multidisciplinary approaches.

Keywords: Stem Cell Therapy, Balance, Gait.

Funding acknowledgements: This study was funded by the University of Jordan Deanship of Academic Research.

3- Prevalence and Predictors of Return to Work among Stroke Survivors in Jordan

Huda A. Yousef, Hanan W. Khalil, Mohammad S. Nazzal, Khalid I. El-Salem Ziad M. Hawamdeh, Patrícia Almeida,

Faculty of APPLIED Medical Sciences, Jordan University of Science and Technology

Background: Returning to work (RTW) is an essential target for many stroke survivors. As yet, the prevalence of RTW post stroke in developing countries as per Jordan is unknown. Additionally, more research is required to identify factors that contribute to RTW post stroke. Objectives: This study aims to (1) determine the prevalence of RTW among stroke survivors in Jordan, and (2) determine the predictors of RTW from a holistic perspective using the Occupational Therapy Practice Framework (OTPF) 3rd edition. Methods: Recruitment was carried out from different Jordanian hospitals and rehabilitation centres. A complete battery of outcome measures was used to reflect OTPF domains. These included outcome measures of occupations, client factors, performance skills, and context and environment. Logistic regression was used to determine factors that predicted RTW. Results: 69 participants were enrolled; 45 Males, 24 females; mean age ± SD, 52.2 ± 11.07 years. Only 29% succeeded in RTW during the first year after stroke onset. The highest percentage of RTW was among craft workers (40%), and those who were self-employed (60%). Of those who resumed work, 35% returned to their previous work, while 65% needed to make work modifications, or change positions or jobs. Factors that correspondingly predicted higher rates of RTW were walking speed (Odds ratio (OR) = 0.004, 95% confidence interval (CI) = 0.00-0.55, P < 0.013). Conclusion: The alarming of low prevalence of RTW among stroke survivors in Jordan emphasizes the essential need to develop vocational rehabilitation programs. Clinicians should pay attention to

enhancing walking abilities and reducing environmental restrictions post stroke, in order to improve the occurrence of RTW.

4- The Impact of Subjective and Objective Sleep Quality measures and related biomarkers on Motor Skill Acquisition in People with Parkinson disease

Ismail Alfalogy, Alham Al-sharman, Hanan Khalil, Khalid El-salem
Faculty of Applied Medical Sciences, Jordan University of Sciences and Technology

Background and Objectives: Neurorehabilitation that involves learning new motor skills is one of the promising clinical methods for motor recovery in individuals with Parkinson Disease (PD).

Strategies that aim at optimizing motor skills rehabilitation in PD individuals become critical. Therefore, factors that influence motor skill acquisition in people with PD need to be investigated. Despite the fact that sleep disturbances are among the most common and disabling manifestation of PD, no study has investigated the effect of sleep quality and related biomarkers on motor skill acquisition in people with PD.

Objective: The aim of this study was to examine the effect of sleep quality and related biomarkers on motor skill acquisition in people with PD.

Methods: 31 PD participants and 31 controls were recruited in this the study. To assess motor skill acquisition, each participant was asked to perform a novel game through virtual reality system (VR) for 5 times (blocks). The main outcome measures out of the VR system are: time to complete the VR game and number of recorded errors. Sleep was assessed subjectively using Pittsburgh Sleep Quality Index (PSQI) and objectively using the actisleep.

Results: PD participants and controls demonstrated a practice-related improvement in performance as shown by the main effect of block for each of the outcome measures ($p<0.000$, time required to complete VR game; $p<0.000$, recorded errors). Significant positive correlations between time required to complete VR game and PSQI (rho= 0.592, p=0.001) was found in PD people. Furthermore, significant correlations were found between time required to complete VR game and some of the actisleep measures; sleep efficiency (rho= -0.462, p=0.026) and awaking time (rho= 0.498, p=0.021) in people with PD. Interestingly, the results indicated significant correlations between motor skill acquisition and serotonin level (rho= -0.366, p=0.04).

Discussion and Conclusions: The finding of this study will bring attention to consider sleep as an important factor to be included in rehabilitation intervention. Sleep quality may influence motor skill acquisition in people with PD. Health care professionals are promoted to be aware about sleep quality and sleep assessment. Sleep assessment and sleep management strategies should be considered when dealing with PD rehabilitation. Therapies may target improving sleep quality which could result in improving motor skill acquisition and consequently improve the rehabilitation outcomes.

5- Effectiveness of conventional therapy versus conventional therapy combined with motor imagery and mirror therapy in improving upper extremity motor function in left hemiparetic patients – a comparative study

Muamer Abdualah Belazi,

Head of the physiotherapy department, Ministry of Higher Education and Scientific Research, Al – Mergib University

Background: The aim for the study is to compare the effectiveness of conventional physiotherapy versus conventional physiotherapy combined along with motor imagery and mirror therapy in improving the motor functions in upper extremity in left hemiparetic patients. The results of the study would help the patient and the therapist to incorporate these new techniques to improve the motor functions of the affected upper extremity. Design and methods: This study was experimental in nature. 20 samples were selected by using simple random sampling procedure and were divided into two equal groups, experimental group A – n=10 subjects and experimental group B - n=10 subjects. Pre test scores of fugl Meyer upper extremity motor performance scale for both the groups were taken on the first day. After the pretest assessment, the group A received conventional physiotherapy for period of 6 weeks and group B received mental stimulation exercises along with conventional physiotherapy for a period of 6 weeks. Post test were taken after the treatment for both the group in a similar fashion as that of the pretest assessment. Results: The collected data were subjected to paired t test individually for the group I and group II. The 't' calculated value of the paired t test for motor performance of upper extremity of upper extremity for group I who underwent conventional therapy alone and group II who underwent conventional therapy along with motor imagery and mirror therapy were 5.552 and 14.023 respectively. The't' table value for 9 degrees of freedom at 5 % level of significance was found to be 2.262 respectively. The't' calculated values of paired't' test were matched with't' table values.It was found that't' calculated is > table value for both the groups. After the paired't' test the data were subjected to independent 't' test to analyze any difference in improvement between group I and group II. The't' calculated value of independent't' test Upper extremity motor performance was found to be 7.056 respectively. The't' table value for 18 degree of freedom at 5 % level of significance was found to be 2.101 respectively. The't' calculated value value of independent't' test was matched with't' table value. It was found that't' calculated value >'t' table value .The outcome of statistical analysis shows the significant effects of both the treatment protocols in experimental group I and group II and the significant difference between the improvements in favor of experimental group II. Conclusion: The result of the study conclude that conventional therapy combined with mental imagery and mirror therapy is better than conventional therapy alone in improving upper extremity motor functions in left hemiparetic patients.

6- PHYSICAL ACTIVITY IN MULTIPLE SCLEROSIS: WHICH CLINICAL CHARACTERISTICS ARE IMPORTANT?

Shatha Alkhazaleh

Faculty of applied medical sciences, Jordan University of Science and Technology

Established evidence has demonstrated that physical activity (PA) has positive health effects on people with multiple sclerosis (MS). However, several studies have found that PA decreased in people with MS when compared with non-diseased population. To better intervene and promote PA behavior in people with MS, it is crucial first to identify factors that are associated with PA level in this population. The International Classification of Functioning, Disability and Health (ICF) model gives a useful framework for controlling factors associated with physical activity. To our knowledge, few studies have evaluated the correlations between PA level and body structure factors, environmental variables and personal variables with inconsistency in resulting findings. This is a cross sectional study aimed to examine the factors that were associated with the low PA level in people with MS, and how they interact with each others. By using the ICF model as a guiding framework this study categorized variables according to body function and structure, activity, participation, personal and environmental domains. To achieve study goals 66 MS patients were recruited. The main parameters of this study covered the 3 domains: body Structure and Function Domain, personal domain and environmental domain. The main findings from the present study were that moderate to vigorous levels of physical activity significantly correlated with disability, social support from friends, balance and six min walk test in people with MS. On the other hand, physical inactivity was significantly correlated with disability, cognitive, apathy, walking speed and balance. Six min walk significantly predict moderate to vigorous physical activity levels in people with MS, while walking speed significantly predict physical inactivity in people with MS.

7- Motor Skill Acquisition through Virtual Reality in People with Multiple Sclerosis: The Impact of Subjective and Objective Sleep Quality and Related Biomarkers

Heba Alkhazaleh
Faculty of applied medical sciences, Jordan University of Science and Technology

Background and Objectives: Neurorehabilitation that involves learning new motor skills is the most promising clinical method for motor recovery in patients with multiple sclerosis (MS). Strategies that aim at optimizing motor skills rehabilitation in MS individuals become critical. Therefore, factors that influence motor skill acquisition in people with MS need to be investigated. Despite the fact that sleep disturbances are among the most common and disabling manifestation of MS no study has investigated the effect of sleep quality and related biomarkers on motor skill acquisition in people with MS.

Objective: The aim of this study was to examine the effect of sleep quality and related biomarkers on motor skill acquisition in people with MS.

Methods: 40 MS participants and 40 controls were recruited into the study. To assess motor sill acquisition, each participant was asked to perform a game through virtual reality system (VR) for 5 times (blocks). The main outcome was time to complete the VR game and number of recorded errors. Sleep was assessed subjectively using Pittsburgh Sleep Quality Index (PSQI) and objectively using the actisleep.

Results: MS participants and controls demonstrated a practice-related improvement in performance as shown by the main effect of block for each of the outcome measures ($p<0.001$, time required to complete VR game; $p<0.001$, errors recorded). Significant positive correlations between recorded errors and PSQI (rho= 0.32, p=0.04) was found in MS people. Furthermore, significant correlations between the recorded errors and some of the actisleep measures; sleep efficiency (rho= -.574, p=0.025) and sleep latency (rho= 0.688, $p<0.001$), were also found in people with MS. Interestingly, The results indicated significant correlations between motor skill acquisition as indicated by change in number of errors and change in the time to complete the task and serotonin level (rho= -0.433, $p < .007$, time to complete the task; rho= -0.416, $p < .008$ recorded error).

Discussion and Conclusions: Sleep quality influences motor skill acquisition in people with MS. Health care professionals are promoted to be aware about sleep quality and sleep assessment. Sleep assessment and sleep management strategies should be considered when dealing with MS rehabilitation.

8- Effect of Robot assisted gait training on gait speed in stroke patients. A meta-analysis

Rahaf atram , Eman almaidani
Physical Therapy department, Al-isra University

Background: slow gait speed is highly common in stroke patients. Gait speed is important factor for stroke rehabilitation protocols, and decision-making in stroke rehabilitation. It can decide discharge planning, and the ability of community walking. Furthermore, it can reflect the stroke recovery and neuroplasticity. Robot assisted gait training (RAGT) is promising technique in stroke rehabilitation. Previous evidences show that the RAGT can improve balance, mobility, and quality of life.

Objective: to assess the effectiveness of RAGT on gait speed in stroke patients by meta-analysis.

Methods: a comprehensive search was performed in PUBMED and SCOPUS databases until September 2019. Randomized clinical trials (RCTs) that assess the effectiveness of RAGT on gait speed in stroke patients in comparison with conventional gait training were included. Meta-analysis was performed by comprehensive meta-analysis software. Standardized mean difference at 95% confidence internal was calculated by comparing the RGAT and control interventions effects. The level of significance was set at $p \leq 0.05$. Subgroup analysis was carried-out in term of time since stroke; acute, subacute, and chronic.

Results: 9 RCTs with 70 participants were included. Participants in 2 studies were in acute stage, 2 studies with subacute stage, 4 studies with chronic stage, and 1 study included mix participants. The studies apply different types of RAGT protocols. Gait speed was assessed by spatiotemporal gait analysis or subjective outcomes as 6-meter walk test. The meta-analysis shows a positive, non-significant effect of RAGT on gait speed [SMD=0.674. -

0.133-1.480, p= 0.102]. Sub-group analysis did not show significant effect of RAGT at different times since stroke. The larger effect was at chronic stroke patients.

Conclusion: RAGT can improve gait speed among stroke patients but without superiority in comparison with other rehabilitative interventions. RAGT seems more beneficial for chronic stroke patients.

9- *Mechanisms of cognition improvement by physical exercises in Alzheimer disease*

Islam Mansour, Esra Abu zaid
Physical Therapy department, Al-isra University

Background: Alzheimer's disease (AD) is mainly characterized by decline of cognitive functions such as memory and learning, which has a high prevalence and poor pharmacological response. The current evidence shows that the exercises and physical activity can improve cognitive functions and slow the progression of PD.

Objective: To view the mechanisms of cognition improvement by exercises in human and animal models of AD.

Methods: A literature review of observational studies that discuss the neurophysiological mechanisms of physical exercises on cognitive functions in AD.

Results: Physical exercises especially aerobic exercises activates the release of neurotrophic factors and promotes angiogenesis, thereby facilitating neurogenesis and synaptogenesis. Studies have shown that the neuroprotective mechanisms induced by physical exercises are linked to an increased production of superoxide dismutase, endothelial nitric oxide synthase, brain-derived neurotrophic factor, nerve growth factor, insulin-like growth factor, vascular endothelial growth factor, and a reduction in the production of free radicals in brain areas such as the hippocampus, which is particularly involved in cognition and memory.

Conclusion: Physical exercises especially aerobic exercises show neurophysiological mechanisms that improve cognition and memory functions. The study results emphasize the role of physical exercise in the management and prevention of AD and other neurodegeneration diseases.

10- THE IMPACT OF THE MOTOR AND NON-MOTOR FACTORS ON THE PARTICIPATION IN INSTRUMENTAL ACTIVITY OF DAILY LIVING AND LEISURE ACTIVITY IN PEOPLE WITH MULTIPLE SCLEROSIS

Eman Adnan Allataifeh
Faculty of applied medical sciences, Jordan University of Science and Technology

Multiple sclerosis (MS) is one of the most common degenerative diseases. The decline of motor factors e.g. (weakness, losing balance) and non-motor factors e.g. (depression, anxiety, cognitive dysfunction, endurance dysfunction and fatigue) that follows the MS causes significant limitation in performance of various occupations such as activity of daily living (ADL), Instrumental activity of daily living (IADL), work, and leisure. This study was done to assess the impact of motor and non-motor factor on the participation on IADL and leisure. To achieve this, we recruited 100 subjects with diagnosed MS. The main outcome measures of this study are: activity card sort to assess the participation , hospital anxiety and depression scale to assess the depression and anxiety , fatigue impact scale to assess the fatigue , Brief International Cognitive Assessment for Multiple Sclerosis (BICAMS) to evaluate all cognitive domains , Berg balance scale to assess the balance , the 5-repetition sit-to-stand to assess the strength of lower extremity and Six-minute walk distance to assess the walking endurance. The present study showed that hand function, balance and cognitive can significantly predict the participation in IADL, while the fatigue, age and cognitive significantly predict the participation in leisure activity. This cross-sectional study concludes the cognitive, balance and hand function can predict the participation in IADL while the age cognitive and fatigue can predict the participation in the leisure activity.

11- A physical therapy program for A child with Guillain-Barre syndrome. A case report

Omar Al-nahrawy
physical therapy department, Al-isra University

Background:
Guillain-Barré syndrome (GBS) is defined as a group of clinical syndromes with acute onset of peripheral neuropathy – axonal or demyelinating – secondary to an immune-mediated process. The incidence of GBS has been estimated to range from 0.5 to 1.5 in 100,000 in individuals less than 18 years of age.

Case presentation: A 12- years old male diagnosed with GBS. The child was diagnoised in Neurology unit in Al-Karak Government hospital confirmed by lumbar puncture test, and nerve conduction tests. The child was on ventilator for 49 days due to severe respiratory failure. He is referred to physiotherapy department to address walking and balance impairments due to drop foot and lower limb muscles weakness.

Assessment: The child in the recovery phase. He reported slapped gait due to droop foot. Gait analysis shows short step length, low single-limb support, and slow gait speed. Limitation in lower limb range of motion because the muscle weakness. Berg Balance scale score was 40 out 56 that means that the child has high risk of fall. The child cannot go to the school independently.

Physiotherapy Programs: The child has received 30 sessions (1-hour session/ 3 sessions per week). The interventions was as follow:
- Neuromuscular electrical stimulation for Peroneal nerve (waveform: Mono pulsed, Phase duration: 100 m.s, Phase interval: 1000 m.s, Intensity: 30 ma, Treatment times: 10 minutes).

- Sit to stand transition training

- Dual-task gait training

- Weight cuff gradually lower limb muscles strengthening exercises

Cue gait training by using colored ground and auditory cues.

Results: After the treatment, the child reported improvement in ankle dorsiflexion power and range of motion, step length, single limb support time, berg balance scale (from 42 to 50). After 1 month follow up, the child can go to school freely.

Conclusion: The case results show that the physiotherapy interventions may be functionally beneficial for children with GBS.

Musculoskeletal Sessions

1- Effect of dry needling on Static pain in patient with fibromyalgia (EMG based Case Report)

Mohammad Fatayer, DPT,
Future physio Clinic, Amman - Jordan

Purpose: Limited studies investigated the effect of DN in the management of static muscle pain especially in Fibromyalgia &there is no study investigated the potential benefit of using deep DN on rest or static muscle pain in this problem.

The purpose of this case report is to describe the effect of using DN for treatment of patient diagnosed with Fibromyalgia by comparison between pre & post EMG recording, Numeric Pain Scale (NPS) as well.

Methods: A47 year-old female with a medical diagnosis of fibromyalgia for more than 3 year. The patient was complaining of generalized static painin different area including low back, neck, shoulders, elbow, and hip and knee as well. In addition, the patient reported limitation in chest mobility due to dorsal muscles pain as a house wife with free Hemodynamic.

Intervention consist of 6 sessions of DN for neck, low back, elbow, gluteus, hip, calf, and spine. The recording EMG & Numeric pain scale of pain (NPS), were used to assess patient pre-intervention and post-intervention.

Results: Average improving of pain and trigger point was 70%, and average of pain reduction tender points & achi area according to EMG Recording & NPS.

Conclusion: Fibromyalgia can cause Static muscle pain leading dysfunction which can be reversed by using DN

Implication: This case report suggests that DN can be considered as an option for comprehensive management of fibromyalgia.

Keywords: fibromyalgia, dry needling, static pain, dysfunction.

2- The effect of kinesiotaping and agility performance among soccer players with ankle sprain

Saleh Emammer

The study used quasi experimental, multiple time series design. The subjects were selected purposively and assigned based on their playing position to either Kinesiotaping group with

tension and without tension. Foot and Ankle Ability Measure (FAAM) was used to measure the level of ADL and sports performance. Soccer-specific measures (T-test, sprint 4x5 and sprint 180 degrees) was used to identify the level of agility performance. Pearson and Spearman correlation was used to determine the relationship between intrinsic and extrinsic variables and ADL, sports and agility performance. T-test between and within was used to test the hypothesis. Among all factors, leg dominance ($r = 0.550$, $p = 0.041$) and perceived ankle instability ($r = 0.571$, $p= 0.033$) showed statistically high positive correlation with ADL performance; race ($r = 0.553$, $p = 0.040$) and perceived ankle instability ($r= 0.701$, $p = 0.005$) showed statistically significant high positive correlation with sport performance; age ($r= -0.583$, $p= 0.029$), Leg power ($r= -0.570$, $p= 0.033$) revealed a statistically significant high negative correlation and, playing position ($r = 0.756$, $p = 0.002$) revealed a statistically significant positive correlation with agility performance. The study hypothesized that Kinesiotaping with or without tension has no significant difference as to level of ADL, sports and agility performance ($p < 0.05$) after 3 days of application. However, within group comparison revealed a statistically significant improvement on level of ADL, sports and agility on both EG and CG.

3- The Extent to which The Therapeutic Aquatic Exercises Contribute In Rehabitation Among Swimmers Injured Ankle Joint.

Tariq Ahmad Al-Hyagna
Yarmouk University, Irbid-Jordan

The aim of the present study was to determine the contribution of therapeutic aquatic exercises to Rehabitation Among Swimmers Injured Ankle Joint. The researcher developed a hydrotherapy program to improve the flexibility of the ankle joints Among physical education student the Faculty of Physical Education at Yarmouk University. AS ample Of males (N=5) injured and females (N=5) injured, And the measurement of the severity of the pain, and the time we carry the degree of severity of pain and then apply a therapeutic program for water hyperventilation for 8 weeks 3 times per week, and then conduct post measurements in the same conditions in which pre measurements were made , And after processing the results using t-test for the paired samples, it was found that the training program clearly contributed to improving the flexibility of the ankle joint, and the results did not show differences between males and females in the effectiveness of the program in improving the flexibility of the ankle joint.

The researcher recommend that uses of hydrotherapy exercises to reduce the intensity of pain and increase flexibility in the ankle joint among the injured in the faculties of physical education.

Keywords: therapeutic exercises, ankle joint flexibility, injury

4- Length of the Post-Operative ACL Rehabilitation Program and Time of Starting Sport-Specific Activities Predict Return to the Previous Level of Sports After ACL Reconstruction

ZAKARIYA H. NAWASREH, KHALDOON BASHAIREH, MIKHLED MAAYAH, MOHAMMAD A. YABROUDI.

Faculty of applied medical sciences, Jordan University of Science and Technology

STUDY DESIGN: Cross-sectional study

OBJECTIVE: To determine predictors for return to the previous level of sports after anterior cruciate ligament reconstruction (ACLR).

BACKGROUND: Return to a previous level of sports is one of the markers of successful outcome after ACLR. Identifying predictors that are clinically modifiable optimizes return to the previous level of sports.

METHODS: Ninety-one athletes who have had ACLR with hamstring tendon auto-graft within 1 to 5 years indicated their sport participation levels, knee injury profile, rehabilitation duration, and time to start running, and cutting-pivoting. Athletes answered whether they returned to the same previous level of frequency, duration, and intensity of

sports. Athletes' characteristics, injury variables, surgical factors, duration of rehabilitation, and the time to start running, and cutting-pivoting activities after ACLR were evaluated by univariate logistic regression to determine predictors for return to the previous level of sports.

RESULTS: Nine athletes (10%) returned to their self-described previous level of sports. Univariate predictors for return to the previous level of sports were rehabilitation duration >4 months (OR: 6.78; 95%CI: 1.54, 29.84; p=.011), time to start running ≤4 months (OR: 8.62; 95%CI: 1.03-72.07; p=.047), and time to start cutting-pivoting <6 months after surgery (OR: 5.02; 95%CI: 1.17, 21.62; p=.030).

CONCLUSION: Longer post-operative ACL rehabilitation duration and time to start running and cutting-pivoting activities after ACLR were predictors of return to the previous level of sports. This suggests that spending adequate time in the rehabilitation program and early resuming sports-related activities after ACLR are key factors for the return to the previous level of sports and should be emphasized in the post-surgical ACL management.

LEVEL OF EVIDENCE: 2b

KEYWORDS: anterior cruciate ligament, knee surgery, return to sport, predictors

5- The Rate of Return to Pre-Injury level of Sports After Anterior Cruciate Ligament Reconstruction in Jordan

MOHAMMAD A. YABROUDI, ZAKARIYA H. NAWASREH, KHALDOON BASHAIREH, MIKHLED MAAYAH.

Faculty of applied medical sciences, Jordan University of Science and Technology

STUDY DESIGN: Cross-sectional study, Level 2b

Objective: To determine the rates of return to pre-injury level of sports and to identify the most commonly reported reasons for not returning to prior level of sports after ACL reconstruction (ACLR) in Jordan.

Methods: Athletes between 14-50 year-old who were 1 to 5 years post-ACLR with hamstring tendon autograft were eligible to participate in the study. Athletes answered whether they returned to the same pre-injury level of frequency, duration, and intensity of sports (Yes/No). Patients who did not return to their pre-injury level of sports after ACLR were asked to indicate the reasons for not returning.

Results: Ninety-one athletes participated (mean age: 26.8+6.64 year) in this study at a mean follow-up time of 1.8+1.1 years. The rate of return to pre-injury level of sports after ACLR in Jordan was 10% (9/91). From those who did not return to pre-injury level of sports, 43 athletes (52%) reported having problems with the reconstructed knee as a reason for not returning, of which 32 athletes (39%) indicated that as the only or primary reason. Fifty-six athletes (68.3%) reported a lack of confidence or worried about sustaining re-injury as a reason, of which 40 (48.8%) indicated that as the only or primary reason. Nineteen athletes (23.2%) reported little time to participate in sport, of which 5 (6.1%) indicated that as the only or primary reason, and 19 athletes (23.2%) reported work or family obligations as a reason for not returning to pre-injury level of sports, of which 5 athletes (6.1%) indicated that as the primary or only reason.

Conclusion: The rate of return to pre-injury level of sports after ACLR in Jordan is very low (only 10%) compared to the internationally reported rate (65%). Lack of confidence or worried about sustaining re-injury and problems in the reconstructed were the most commonly reported reasons accounted for not returning to pre-injury level of sports after ACLR.

Keywords: Anterior cruciate ligament, Knee surgery, Return to sports

6- The Additive Effect of Pulsed Electromagnetic Field to Progressive Resistance Exercise in Treating Patients with Knee Osteoarthritis. A Randomized Controlled Trial

Ahmad Aldardour, Zakariya H. Nawasreh,; Ibrahim M. Altubasi,;KhaldoonBashaireh, , Mohammad A. Yabroudi,

Faculty of applied medical sciences, Jordan University of Science and Technology

Objective: Osteoarthritis (OA) is a main cause of disability in the elderly population. The purpose of this study was to examine the effectiveness of using pulsed electromagnetic field (PEMF) with PRE inimproving physical function, decreasing pain level, and improving general health status and quality of life in patients with Knee OA. We hypothesized that the group of PEMFand PRE will have better outcomes compared to PRE only group.

Design: Participants were randomly assigned to receive 24 sessions (3 sessions/week) of either the combined (PRE and PEMF) treatment or PRE only. Participants were evaluated at baseline and after 8 weeks of treatment program using the Arabic versions of Knee Injury and Osteoarthritis Outcome Score (KOOS); Numeric Pain Rating Scale (NPRS); RAND-36 health survey; and Short Physical Performance Battery (SPPB). Mixed ANOVA was used to evaluate the differences between groups followed by one-way within-subject ANOVA for each group.

Results: Both groups significantly improved after the treatment compared to their baseline scores inKOOS, NPRS, and RAND 36 scales. The SPPB chair-stand and gait test scores improved significantly in both groups. None of the study outcomes (NPRS, KOOS, RAND 36, and SPPB) were significantly different between groups.

Conclusion: PREtraining was effective in improving physical function, reducing pain, and improving general health status and quality of life in patients with knee OA. However, we failed to reject the null hypothesis and found that PEMF had no additive effect to PRE in treating patients with knee OA.

Keywords: Knee, osteoarthritis, progressive resistance exercise, pulsed electromagnetic field

7- Low back pain among nurses in Jordan

Salameh Aldajah
Physical therapy department, Al-isra University

8- A Physical Therapy Programme for a patient with sever bilateral knee osteoarthritis. A case study

Ahmad Fawzy
Physical therapy department, Al-isra University

9- Self-reported and performance-based functional abilities in patients with end stage knee OA

Sumayeh Burhan Abujaber
Physical Therapy department, University of Jordan

Purpose: Functional abilities of patients with end-stage knee OA may vary among populations. Determining the functional profile for patients with end-stage knee OA is warranted. Currently, there is no study that examined both the self-reported and performance-based function in Jordanian patients with end-stage knee OA. In the present study we aim to examine the self-reported and performance-based functional abilities pre—operatively for patients with end stage knee OA, who are scheduled for total knee arthroplasty. Methods: 30 subjects (2 males, 28 females, 66±7 years of age, 32.81±5.12 Kg/m2 of BMI) scheduled to undergo unilateral TKA were participated in this study. Functional abilities were evaluated using the knee Outcome Survey activities of daily living subscale (KOS-ADLS) as a self-reported questionnaire, and performance-based tests including the Timed Up & Go (TUG), the Stair Climbing Test (SCT), and the 30-second chair stand test (30-Sec CST). Subjects were asked to rate the knee pain on a scale from 0–10 for both sides. Isometric strength of the knee extensors and hip abductors for both sides was measured using a hand-held dynamometer with a non-elastic strap to provide resistance. Descriptive statistics were used to describe participant characteristics, muscle strength, pain scores, and functional outcome scores. Results: Patients in this study experienced high level of pain (8.01± 1.96) in the affected knee on the visual analogue scale. On KOS-ADLS, patients reported a low score of 37.81±15.61. This study showed that patients perceived a limited knee function and difficulties in performing daily activities when measured by self-reported questionnaire. Patients in our study have lower perceived function compared to that reported in a study conducted in USA on patients with end-stage knee OA who reported a score of 58.2 ±22 1. Patients took 16.10±11.16 seconds, and 32.87±22.22 seconds to complete the TUG and SCT, respectively. When compared to normative data for healthy people between 50-75 years who needed an average of 9.5 seconds to complete the TUG test 2, 3, 4 patients in our study required longer time. In current study patients needed longer time to complete a 9-step stair flight (32.8 seconds) when compared to study conducted on patients with end-stage knee OA

who required 17.1± 8.2 seconds 5. On average, patients were able to stand from the chair 8±3 times in the 30-Sec CST, they achieved lower than normative values of 12 – 18 times for men, and 11-16 for women 6. Scores less than normative average are associated with lower levels of functional ability and risk of fall. Regarding muscle strength, the affected side was 15% and 21% weaker than less affected side for hip abductors and knee extensors, in order. Conclusion: This sample of Jordanian Patients with end-stage knee OA demonstrated sever pain, muscle weakness compared to the "less-affected" side, and functional limitation on self-perceived questionnaire. Compared to results from literature, Jordanian patients demonstrate limited functional performance, that indicate the difficulty in performing daily activities, and increased risk of falls. Given that many of patients with end-stage knee OA wait for long time to undergo TKA, the results may indicate the importance of prehabilitation program to address the functional impairments and limitation during the waiting time for TKA, and highlight the importance of considering functional outcomes of patients regarding the clinical decision-making for determining the timing and priority of TKA.

10- The prevalence of back pain and its associated factors among Saudi population in Jouf province

Thamer Ahmad Abdul Kareem Altaim
Physical Therapy and rehabilitation department, Jouf University, Jouf, Suadia Arabia

Physical Therapy and rehabilitation department, Jouf University, Jouf, Suadia Arabia Background: Low back pain reached to an alarming rate worldwide and it has received increasing attention in recent decades. Current estimates of LBP prevalence from Saudi Arabia are limited. Moreover, existing estimates do not clearly define low back pain and are limited to specific populations such as nurses or University staff. Thus, this study objective is to report estimate prevalence rates of low back pain in Jouf province using various LBP definitions. This current study seeks to examine LBP prevalence and related risk factors among individuals living in the typically hot and dry desert environment of Saudi Arabia. Methods: A cross-sectional analysis was utilised using data gathered over one-year period from general population setting. Participants were a multistage stratified sample of 1000, 18–70 years of age. All subjects were invited to participate in this study voluntarily. The questionnaire used in the survey is a modified version of the Roland-Morris scale, Visual Analogue and Hospital Anxiety and Depression Scale for evaluating low back pain and used in other studies conducted in Arabic speaking countries. The questionnaires were administered during face-to-face interviews conducted in Arabic or English by qualified physiotherapists. Results: The point prevalence of patients presenting during interviews with a complaint of back pain were 58%. Individuals who were female, obese, live in urban area, married and live a sedentary lifestyle were found to complaint of LBP more than other groups. Conclusion: This cross-sectional analysis assessing the prevalence of low back pain in general population in Saudi Arabia support other studies conducted in Saudi Arabia. This study supports the notion that low back pain is a global common presenting complaint. Future research should concentrate on understanding the relationship between risk factors and the

development of new episode of low back pain.

11- Effect of calf muscles stretch in the treatment for plantar fasciitis. A Meta-analysis

Nabil Al-khateeb
Physical Therapy department, Al-isra University

Background: Planter Fasciitis (PF) may be caused by biomechanical abnormalities, foot deformities and malformation, metabolic disorders, or by impact of excessive weight bearing activities such as running and standing. one of the traditional PT intervention for PF is calf muscle stretch. Studies have shown that there is an anatomic, histologic, mechanical, and functional link between the plantar fascia and the Achilles tendon through the calcaneal tuberosity and also along the myofascial merdian of the superficial back line.

Objective: To assess the effectiveness of calf muscle stretch on P.F through meta-analysis.

Methods: A comprehensive search was conducted in PUBMED AND SCOPUS databases until September 2019. Randomized control trials (RCTs) that assess the effect of calf muscles stretch on PF were included. Meta– analysis was performed by comprehensive meta–analysis software by calculating Hedge g at 95 % continence interval. The level of significant was set at p 0.05.

Results: A total of 6 RCTs were included. The articles apply different techniques of calf muscles stretch . The stretch programs length ranged between (3 session to 4 month delay) supervised by physiotherapist or home programs. All stretch programs was self sustained stretching except one article apply sustained and intermitted stretching program. The included outcomes were: foot pain, first step day pain, ankle range of motion, balance, and foot function. Meta – analysis rustle showed that the stretch programs didn't improve foot pain or first step day pain [Hedge g = -0.073-0.311-0.165, P=0.165]. the included study showed that stretch programs can improve ankle range of motion and foot function but not balance.

Conclusion: the present study findings show that the stretch programs can improve ankle flexibility and foot function but not pain or balance. Further study assesses the effectiveness of calf muscles stretch regarding to PF cause is required.

12– Shock Wave Therapy for Mobility

Benny E. Stroheil

13- Effect of Dry Needling on Sciatic Nerve Compression Arising from Piriformis Syndrome

Azzam Alarab[a*], Firas Fohely [a] , Selnur Narin[a] Manar Abu Aker[a], Reema Daraghmah[a], Hassan Shaheen[a], Mohammed Joudeh[a] , Hamza Shaheen
Faculty of Allied Medical Science – Palestine Ahliya University – Palestine

School of Physical Therapy – Eylul University – Turkey

Introduction
Sciatica is a disease characterized by radical leg pain that radiates along with the distribution of the sciatic nerve, with or without sensory deficits. It is triggered by an intervertebral disk herniation that results in nerve root irritation in about 90 percent of instances. It may be one of the most prevalent reasons that medical intervention is needed, but it also has an important effect on health care resources and Loss of productivity, diagnostic techniques and sciatic therapy have been distinguished within and between nations, which may influence the accessibility of therapy, clinical preference and socio-economic factors rather than evidence-based practices. Piriformis syndrome is an elusive clinical entity. It is shown by pain in the buttocks, spreads to the foot with a variable element of sciatic nerve irritation, and is a likely most prevalent cause of additional spinal sciatic.

Objective:
To show the impact of dry needling in piriformis syndrome-induced sciatic nerve compression. The objective of this research was, therefore, to show the efficacy of dry needles on sciatic nerve compression arising from piriformis syndrome compared to conventional therapies.

Methods:
This research was carried out at the Physiotherapy Center at the University of Palestine Ahliya's Faculty of Allied Medical Sciences. An experimental study of sciatic nerve compression, people aged between 20 and 55 years. A total of 20 patients were split equally by easy random sampling (Group A and B) into two groups. Group A, 10 patients; conventional therapy (Moist warm, therapeutic massage and stretching ex) was given. Group B, 10 patients got dry needling treatment only.

Inclusion Criteria

1) Group of 20 to 55 years of age.

2) Participants of both men and women.

3) Gluteal pain radiates through the back and lowers limb of the thigh.

4) Straight-legged patient increase positive below 60 degrees.

5) Fair test should be positive.

6) Sub-acute and chronic compression of the sciatic nerves diagnosed.

7) Piriformis syndrome on one side.

Every group involves 10 patients, in the therapy of all patients in this group, dry needle methods will be implemented, one session only for 5 minutes. The dry needling methods implemented as follows, the patient will be lying on one side with complete hip flexion on the impacted side towards the roof.

ACKNOWLEDGMENTS

We would like to thank and show our gratitude to the staff in faculty of allied medical sciences, Palestine Ahliya University, School of Physical Therapy and Rehablitation, Eylul Univeristy who provided insight and expertise that greatly assisted this research.

Body System

1- Exercise as an Intervention in Reducing Side Effects of Breast Cancer

Qais Gasibat
Faculty of Medical Technology, Physiotherapy Department, Misurata, Libya

The purpose of this review is to describe how the physical exercise is capable to reduce breast cancer symptoms and treatment side effects. Worldwide, breast cancer is the most frequently diagnosed life-threatening cancer in women and the leading cause of cancer death among women. Patients with breast cancer can receive various forms of medical therapy such as surgery, chemotherapy, hormone therapy, antibodies, and/or radiotherapy and be confronted with various side effects such as fatigue. In addition, breast cancer patients start to decrease their physical activity during therapy and stay physically inactive during aftercare. Exercise offers many benefits for breast cancer survivors, exercise is increasingly considered by many authors to be a factor reducing the risk of cancer development and premature cancer-related death, and many studies have found a link between regular exercise and a lower risk of being diagnosed with breast cancer, as well as a lower risk of breast cancer coming back. However, there are gaps in study documentations as well as inadequate verification of scientific approaches in rehabilitation clinics and in everyday life. Future studies should be focused to examine the exactly frequency, intensity, and the type of exercise that would have the greatest effect on the relative risk of breast cancer Keywords: Breast cancer, Exercise therapy, and Physical activity

2- Physical Therapy Practice in Intensive Care Units in Jordanian Hospitals

Saad Al-Nassan
Physical and occupational therapy department, The Hashemite University

Objective. A national survey was conducted to determine the current status of physical therapy practice in the intensive care units of Jordanian hospitals.

Methods. An online survey was sent via e-mail to physical therapists working at Jordanian hospitals. Questions of the survey addressed the physical therapy demographics, staffing, education, training, and barriers of practice. The responses were compared among four different hospital sectors in the country.

Results. The response rate was 31% (50/161). Thirty-six percent of participants had more than 10 years of experience in physical therapy, and 26% had less than 1 year of experience in the intensive care practice. Staffing of physical therapists working in ICUs relative to the total ICU beds was the highest in public hospitals compared to other hospital sectors. Among all participants, only 4% had received specialized post-graduate ICU training. The barriers to ICU physical therapy practice in Jordan included: insufficient staffing, inadequate training, and lack of understanding of physical therapy role for ICU patients.

Conclusion: The study showed the main barriers to ICU physical therapy practice in Jordan. There is a need for well-structured strategies to overcome these barriers to help improve the delivery of physical therapy services in Jordan.

3- Functional Status of lower Extremity amputees of the Great Return March after receiving Rehabilitation

Suad J. M. Ghaben
Al-Azhar University, Gaza- Palestine

Introduction: The Great Return March (GRM) has resulted in large number of injured people close to 20,000, among those about 140 ended up with extremity amputation, and 122 are with lower extremity amputation. The ALPC is the main center for rehabilitating amputees where rehabilitation program started with the pre-fitting stage, fitting and then the gait training stage. Besides, the ALPC is providing the appropriate artificial limb for the amputees as well. A previous study has investigated the efficacy of the rehabilitation program provided at the ALPC, and showed significant level of functionality among participants. Research Objective: The study aims to explore the functional status of lower Extremity amputees of the GRMs after receiving Rehabilitation at the ALPC. Methods: The researchers conducted a cross sectional study, sixty of the GRM injuries with LE amputees who received rehabilitation program at the ALPC Program were included, sample inclusion criteria are age range: 18 to 65 year who already received their rehabilitation program at either stage, pre-fitting, fitting or gait training stage. The sample was collected by convince sampling procedure and participant filled in an interview questionnaire that has been designed and tested for consistency and includes the demographic data. Function of the Lower extremity was examined by the AMPUTEE MOBILITY PREDICTOR ASSESSMENT TOOL – AMPnoPRO; an international validated tool for assessing the functional status of lower-limb amputees with (AMPPRO) and without (AMPnoPRO) the use of a prosthesis. Results: The SPSS analysis shows that the mean of the functional status of the study sample =32.87 which is equivalent to 84.2% of the max functionality. Besides, the results of the K classification has clarified that the mean of the K0=11.62 equivalent to 89.3%, while the mean of the K1=11.17 equivalent to 85.9%, the mean of the K2= 9.23 equivalent to 83.9%, the mean of the K3=13.65 equivalent to 80.29%, and the mean of the k4= 12.2 equivalent to 81.3%. Conclusion: (1)a very good functional status of the Lower Extremity among Study Sample, (2) the functional status of the study sample according to the K-level classification indicated a very good functional mobility ranging from K0-K4.

4- Effect of ultraviolet on muscles vitality in postmenopausal women with vitamin D deficiency

Amel M. Yousef , Fahema M. Okeel, Mohamed H. Mostafa Dina M. ElEshmawy
Department of PT for Women's Health, Faculty of Physical Therapy, Cairo University.

This study was conductedto determine the effect of ultraviolet radiation on muscle vitality in postmenopausal women with vitamin D deficiency. Thirty-five postmenopausal women who suffering from vitamin D deficiency participated in this study, from the Outpatient Clinic of Faculty of Physical Therapy, Cairo University. Their age ranged from (45 to 60) yrs.,body mass index (BMI) ranged from 25 to 30 kg/m2. They were assigned randomly into two groups (A&B). Eighteen postmenopausal women of group (A) received ultraviolet (3 sessions per week) in addition to regular aerobic exercises with vitamin D supplement (800 IU) daily for 3 months and seventeen postmenopausal women in group (B) received regular aerobic exercises with vitamin D supplement (800 IU) daily only for 3 months. Assessment of all women in both groups (A&B) was carried out before and after the end of the treatment program (3 months) through measuring level of serum 25-hydroxyvitamin D, muscle vitality,as well as, quality of life. The results showed a statistically highly significant ($P < 0.001$) increase in serum 25-hydroxyvitamin D and quality of life in group (A) than in group (B), there was a statistically highly significant ($P < 0.001$) increase of peak torque of knee flexors as well as extensors in group (A) post treatment in compare to pre treatment, while there was no significant difference in group (B) post treatment as well as between both groups (A&B) pre and post three months of treatment.

Accordingly, it could be concluded thatultraviolet is an effective, non- invasive, safe, easy to apply, simple and successful method forimproving concentration of vitamin D andquality of lifein postmenopausal women.

Key words: Muscle vitality, menopause, Ultraviolet, Quality of life, aerobic exercises and Vitamin D supplement.

Physical Therapy Practice

1- Personal and organizational factors influencing implantation of Physiotherapy evidence-based practice.

Mohammad Etoom, PT PhD
Physical Therapy Department, Al-isra University, Amman- Jordan

Background and aim: Physiotherapy evidence- based practice (PEBP) is defined as a commitment to use the best available evidence to inform decision-making about the care of individuals that involves integrating physiotherapist practitioners and individual professional judgement with evidence gained through systematic research. PEBP plays a vital role in physiotherapy practice

Methods:
The study design is cross-sectional survey. The survey questionnaire was delivered from physiotherapy evidence-based practice scale. The survey was sent by email for physiotherapist who registered in Jordanian Physiotherapy society. The included responses were for physiotherapists who are currently work in Jordan, and hold a valid physiotherapy license of Jordan ministry of health. The questioner was itemed into: Personal Data, Attitude and beliefs toward PEBP, Perceived role and responsibility, Interest in PEBP, Learning and training in PEBP, Self confidence in PEBP, Facility and colleagues support, Barriers to use and apply EBP, Using of EBP and databases, Barriers to use and apply PEBP, and Decision making in physiotherapy practice. The data was analysed using IBM SPSS version 19.

Results and conclusion:
The presentation will discuss in-depth the survey results for 86 responses (until 10 October 2019). The correlation between personal and organizational factors with implantation and use

of PEBP will be also discussed. Research recommendation to both physiotherapist and academics will be provided in the conferences.

2- Physiotherapists job satisfaction in workplace: A cross-sectional study in Jordan, Lebanon, Western Bank, and Gaza

Saddam Kanaan, Annie M. Abu Hanna, Hikmat H. Haddoush
Faculty of applied medical sciences, Jordan University of Science and Technology

Background: Job satisfaction in the workplace is essential for physiotherapists in order to provide the highest quality service to their patients. To date there are no reports explored physiotherapist job satisfaction in their workplace in the Middle East. Design: A cross-sectional study. Methods: An online questionnaire was developed with an acceptable validity and reliability. The scale consisted of 18-items Likert type scale with five response optionas ranging from strongly disagree (=1) to strongly disagree (=5). The questionnaire was sent to physiotherapists by physiotherapy organizational bodies in Jordan, Lebanon, Western Bank, and Gaza. Results: A total of 413 participants completed the online questionnaire. Majority of the respondents were older than 27 years old (55%), males (53.8%), and holding a bachelor degree (70.2%). Approximately half of the participants had an experience less than 5 years (48.4%). Overall there was no significant difference in overall satisfaction between all the four regions. 36.8% of the participants reported that they frequently thought of quitting their job (agree or strongly agree), while 65.6% of the participants reported that they overall feel satisfied with their workplace (agree or strongly agree). High satisfaction levels reported by the participants were in the following items: “I understand the importance of my job to the organization's success” (4.35±0.76), “I have input into my workplace development plan” (3.88±0.82), “The amount of paperwork that I do in my job is tolerable” (3.73±0.93), “In my workplace, I am free to make decision independently” (3.63±1.03), and “My workplace implements and facilitates the multidisciplinary teamwork” (3.56±0.91). Lowest satisfaction levels reported by the participants were in the following items: “I see a connection between my performance and my raises” (2.81±1.21), “I believe that I am fairly compensated financially” (2.86±1.16), “Research activities are facilitated at my current workplace (e.g. time available, resources, etc.)” (2.96±1.09), “Evidence-based practice is followed and emphasized in my workplace” (3.24±1.07), and “My workplace offers further support for my

continuous education and skills development (time and financial support)" (2.81±1.21). Conclusion: There is a reasonable job satisfaction in physiotherapy workplace in the studies regions. In order to increase efficiency, effectiveness, productivity of the physiotherapists in their workplace, satisfaction in their financial rewards, support of continuous education, and using evidence-based practice are required.

3- The Impact of Lean Six Sigma Practices on Physiotherapy Service Quality at UNRWA Health Centers -Gaza Strip

Nabila Mohammed Abu Sharikh
Department of Health, Physiotherapy Division, UNRWA-Gaza Strip

Back ground: Today, globalization and instant access to information have changed the way business works, so the highly competitive environment does not afford defective work. Quality, process variation reduction, and customer satisfaction have become top priorities of all organizations. Nevertheless, health care organizations all over the world face so many challenges such as cost, quality, and patients's satisfaction since health care is considered a difficult and complicated process that has a lot of discrepancies. Objectives: The ultimate aim of this study is to explain the impact of lean Six sigma practices on physiotherapy service quality at UNRWA health centers - Gaza Strip. The descriptive analytical approach was used to accomplish the study. Method: the study targeted two different populations: all of the 49 physiotherapists working at UNRWA Health Centers as comprehensive survey method and 2165 undergoing physiotherapy treatment patients as stratified random sample. Data was collected through two questionnaires. SPSS software was used to analyze data. Conclusions: The results revealed that there were statistically significant relationship between Lean Six Sigma dimensions and quality service produced in physiotherapy units at UNRWA Health Centers. Moreover, application of Lean Six Sigma dimensions was practiced at UNRWA Health Centers with rate of (81%) as practices but not as an approach also there is patient's satisfaction about service quality with rate of (89%).The study concluded that there was an impact of Lean Six Sigma dimensions on service quality in physiotherapy units at UNRWA Health Centers.

Key words: Lean, Six Sigma, Lean Six Sigma, Service Quality, Physiotherapy

4- The role of Physical Therapy in Public Health

John de Caro
World Confederation of Physical Therapy

Educational Sessions

1- Sleep disturbances among people with neurological conditions: The role of physical therapy.

Mayis Aldughmi[1], Alham Al-Sharman[2]

1- Faculty of rehabilitation sciences, University of Jordan
2- Faculty of applied medical sciences, Jordan University of Sciences and Technology

Sleep plays a major role in maintaining good health throughout life. It is vital for supporting the recovery of systems such as the neurological and cardiovascular systems. The Centers for Disease Control and Prevention has considered poor sleep quality a public health problem, due to the several health consequences associated with sleep disturbances. Sleep disturbances are common in various conditions in which physiotherapists (PTs) may encounter during their clinical experience. Specifically, a wide variety of neurological conditions are often associated with sleep disturbances, including people with stroke, Alzheimer's disease, Parkinson's disease, and people with Multiple Sclerosis. It is believed that there is a bidirectional relationship between sleep quality and neurologic disease, therefore managing sleep disturbances may improve the symptoms of the neurologic condition. Despite being an important factor, sleep is often overlooked by clinicians. Therefore, more awareness is needed among PTs regarding the vital role sleep plays in neurological rehabilitation. The aim of this educational session is to provide PTs with practical knowledge about the importance of assessing and addressing their patient sleep issues. This educational session will cover a review of the literature on why sleep is a critical component of prevention, health promotion and rehabilitation among people with various neurological conditions. Followed by a discussion about physio-therapeutic sleep screening, treatment options, and recommendations PTs can incorporate into practice to promote their patient's sleep health.

2- Cancer Rehabilitation: Physical Therapy role, and use of individualised measures.

Ala Abu alrub

Physical Therapy department, Al-isra University

Quality of life (QOL) in people with cancer has become an important outcome for both clinical care and research as a way of summarizing across a wide range of physical and emotional sequelae that arise from the disease itself and from its treatment. Individualized measures (The Patient Generated Index (PGI)) ideally suited for assessing the impact of cancer and its treatment, but how their unique information relates to information gathered by more standardized approaches is still lacking.

This education session will cover four topics; the physical therapy role in cancer, the use of individualized measures in cancer, identifying top areas for people with cancer and testing the psychometric properties of the PGI in people with cancer, finally providing some information about response shift (reconceptualization) in people with cancer.