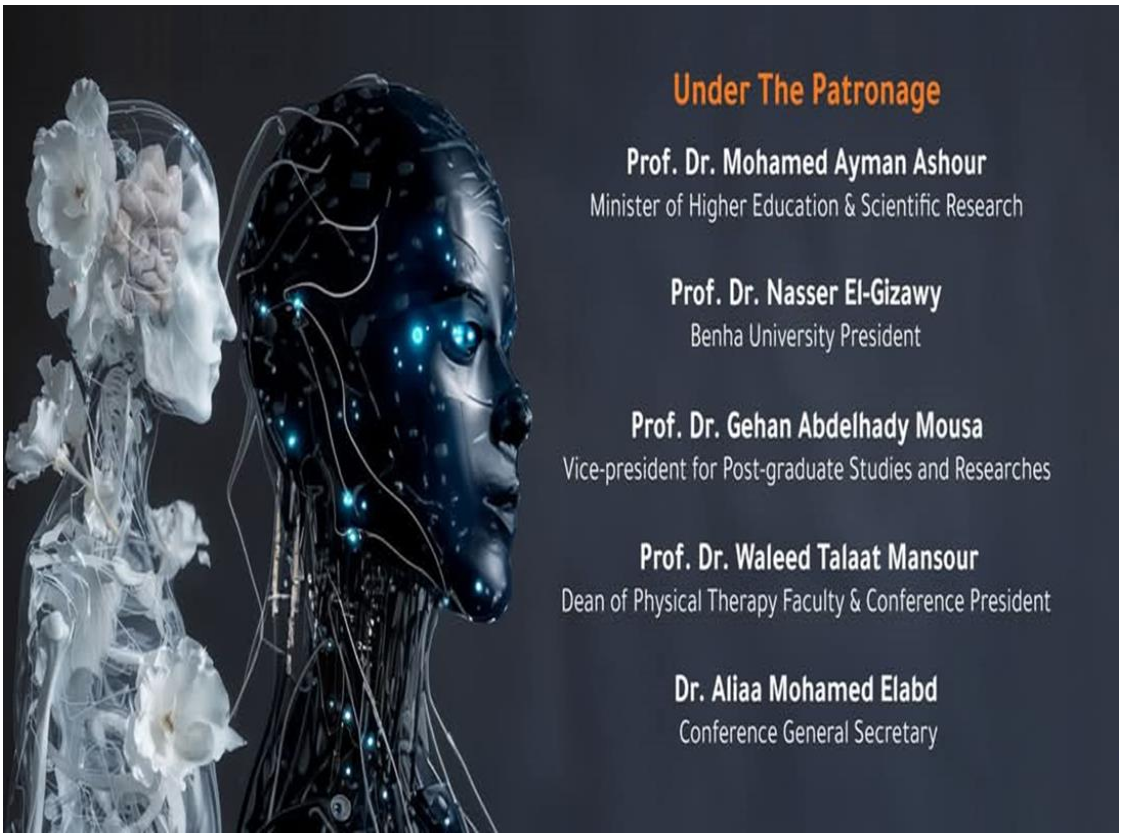

Abstract Book

Under the auspices of:

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Vice President for Post-graduate Studies and Researches

Prof. Dr. Waleed Talaat Mansour
Faculty Dean & Conference President

Dr. Aliaa Mohamed Elabd
Conference General Secretary

Conference Honorary Committee Message

On behalf of the organizing committee, it is a great pleasure to welcome all of you to the First Scientific Conference of Faculty of Physical Therapy, Benha University (Physical Therapy Toward Sustainable Health). I would like to express my most sincere gratitude for your presence and participation in this event, which includes research papers, presentations, workshops, posters, and exhibitions.

The theme of this year's conference is "Physical Therapy Toward Sustainable Health" aligning with the sustainable development goals. This theme ensures an exceptional scientific program featuring many distinguished keynote speakers. We intended to make this conference a dedicated platform for all Physical Therapists and related fields hare their knowledge and experiences in the field of Physical Therapy and related fields. By providing access to ongoing education and networking opportunities, the conference hopes to strengthen the profession, advancing practice for the benefit of populations and the individual patients we serve.

We are very grateful to His Excellency Prof. Dr. Ayman Ashour, Minister of Higher Education, for his tremendous support and for placing the conference under his auspices. Many thanks also go to the conference organizing committee, headed by Prof. Dr. Waleed Talat, Dean of the Faculty of Physical Therapy, whose members have worked tirelessly to organize this event.

The wonderful aspect of our conference is the students' engagements in the research activities. We are certain you will benefit from and enjoy this great event with your colleagues. We thank all participants, delegates, sponsors, and exhibitors for making this conference possible and for ensuring that the conference is successful.

Sincerely,

Prof. Dr. Naser El-Gizaway
President of Benha University
Prof. Dr. Gehan Abd- Elhady
Vice-president for Post-graduate Studies and Researches

Conference President Message

On behalf of the organizing committee of the First Scientific Conference of Faculty of Physical Therapy, Benha University under the title Physical Therapy Toward Sustainable Health (PTTSH), and with great pleasure and honor, I would like to welcome all participants joining the activities of the conference. PTTSH is a peer reviewed conference that brings together academicians, researchers, professors, professionals, and practitioners involved in the field of Physical Therapy, with special focus on the sustainable practice.

The conference addresses different strategies of improving the quality of life of normal individuals as well as people with special needs. This aligns with the goals specified in the Sustainable Development Strategy, Egypt Vision 2030. The theme of the conference reflects and highlights the importance of health care. As we look forward to living and leading a happy and enjoyable life in a safe environment, taking good care of our health should be the starting point. Health has a great and direct impact on education, production, social life, and economy. An unhealthy society cannot guarantee proper education for its youth and cannot innovate in production or win the race of global competition. This threatens the economy, which in turn threatens the whole community and life.

Topics of the Conference

The conference covers many important aspects, including:

1- Sustainability, Quality Assurance, and Evidence-Based Practice in Physical Therapy
2- Innovations, Technologies, and Artificial Intelligence in Physical Therapy
3- Progress in Physical Therapy for Movement, Posture, and Functional Rehabilitation
4- Physical Therapy for Specialized Populations: Oncology, Lymphedema, Critical Care, and Gender-Specific Needs
5- Emerging Techniques in Manual, Complementary, and Alternative Therapies
6- Holistic Physical Therapy: Nutrition, Ergonomics, and Occupational Health
7- Advances in Geriatric and Cardiopulmonary Rehabilitation for Enhanced Wellness

The conference received over 80 submissions from different Physical therapy reviewed by experts in the field of Physiotherapy, in addition to 7 workshops within and on the sidelines of the conference.

The conference program combines strategic keynote speakers, research papers, workshops, posters, exhibition and social activities with a number of scientific sessions for the students researches .

I would like to appreciate and deeply thank Prof. Mohamed Ayman Ashour, Minister of High Education and Scientific Research, Prof. Dr. Nasser El-Gizawy President of Benha University and Prof. Dr. Gehan Abd-Elhady for their auspices.

I am also thankful to Dr. Aliaa Elabd, conference general secretary and all the organizing committee for their great and sincere efforts to ensure the success of the conference. Special thanks to all the sharing companies. Great thanks and gratitude for the conference keynote speakers, chairmen of the sessions, members of the scientific committee, deans,

academic faculty members, students and all our dear guests.

Prof. Dr. Waleed Talat Mansour
President of the Conference
Dean of the Faculty of Physical Therapy
Benha University

Conference General Secretary Message

My dear colleagues,

Welcome to our first scientific conference of the Faculty of Physical Therapy, Benha University under the title of Physica Therapy Toward Sustainable Health in which we all gather to exchange experiences, to get to know the latest research, and connect in order to provide the best healthcare service we can to our patients.

Scientific research, which combines data, knowledge, and observation to solve problems and create new concepts that aid in the reduction and appropriate rehabilitation of disabilities, is becoming more and more necessary. The role of research is crucial part in helping patients overcome life's obstacles and provide a scientific basis for evaluating findings and investigating crucial strategies for lowering disability and enhancing patients' quality of life.

Therefore, this conference may be considered a foundation for scientific research and practical applications in facing the challenges of treating individuals with various conditions in the field of physical therapy.

Finally, I want to thank all the participants who made this day possible, and my regards go to our researchers who, with their dedication, make a brighter future for the profession.

Dr. Aliaa Mohamed Elabd
Conference General Secretary
Lecturer of Physical Therapy , Benha Unuversity

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Table of Content

Page	Title	Author
15	Artificial Intelligence in Medicine	Prof. Dr. Mohamed Elashhab
16	Architecture for Sustainable Health: Towards Better Quality of Life	Prof. Dr. Zeinab Abd Elkader
17	Quality assurance and accreditation in terms of sustainable development and Egypt 20-30 vision	Prof Mohamed M Ghanem
18	Driving Quality in Physical Therapy: Insights from GAHAR Accreditation Standards	Dr. Ahmed Hossam Toraieh
19	Roll Model in Accredited Specialized physical Therapy Centers	Dr. Ayman Elbatta
20	Physical Therapy in Management of Musculoskeletal Impairments and Disabilities Among Hemophilic Patients	Prof. Dr. Adly Sabour
21	Physical Therapy in Management of Musculoskeletal Impairments and Disabilities Among Hemophilic Patients	Prof. Dr. Adly Sabbour
22	The Clinical Practice Guidelines for Management of Patients with Congestive Heart Failure	Dr. Nancy Smith,
23	Classification of Peripheral Nerve Injuries	Prof. Dr. Ibrahim M. Zoheiry
24	The Whole Picture, A Holistic Approach to Clinical Practice	Dr. Ahmed Mohamed Hefny
25	Nutrition And Fatigue During Exercise and Work Activities	Prof. Dr. Farag Abd Elmonem
26	Updates in Stroke Protocols	Prof. Dr. Khaled Sallam
27	Ergonomics for Every Age	Prof. Dr. Olfat Diab
28	Elhafez Technique versus Traditional Treatment for Shoulder Adhesive Capsulitis	Prof. Dr. Haytham Mohamed Elhafez
29	Hand Rehabilitation Post Flexors Tendons Repair Zone II	Prof. Dr. Mohamed Ali Sarhan
30	Role of physical therapy in Regaining Balance post Stroke	Prof.Dr. Eman Samir Fayez
31	Physical Therapy for Burn Rehabilitation	Prof. Dr. Nesreen Afify
32	Role of Physical Therapy After Rotator Cuff Repair	Prof. Dr. Khaled Ayad
33	Connecting the Dots: Mental Health and Sustainability in Physical Therapy	Dr. Manal Helmy Koura

34	Artificial Intelligence in Scoliosis	Dr. Tayseer Saber Abdeldayem
35	Don't Miss a Step: Essential Updates and Tips for Ankle Sprain Recovery	Prof. Dr. Rafik Radwan
36	Post-Prostatectomy Rehabilitation	Prof. Dr. Ahmed Fathy Samhan
37	Technology-Based Rehabilitation Tools (AI)	Prof. Dr. Nermeen Mohamed Abdelhalim
38	Effects of Bobath Stretching Approach Prior to Modified Constraint-Induced Movement Therapy in Post-Stroke Patients: A Pilot Study	Maram I Ali
39	Outcome Measures: Navigating the Shift from Labs to AI and New Technologies Paving the Path to Sustainable Clinical Outcomes	Dr. Ahmed Rageh Saber Ali
40	Relationships between forward head posture and lumbopelvic sagittal alignment in older adults with chronic low back pain. A cross section study	Dr. Aliaa Mohamed Elabd
41	Visual Reality: Revolutionizing the Way, We Experience the World	Dr. Mahmoud Usama
42	From Lab to Market: Insights about the new era of technology transfer in the physical therapy field	Dr. Aya A. Khalil
43	Empowering Women's Health: The Latest Innovations in Physical Therapy	Prof. Dr. Maha Mohamed Mady
44	Prediction of Back Disability Using Clinical, Functional, and Biomechanical Variables in Adults with Chronic Nonspecific Low Back Pain	Dr. Aliaa Mohamed Elabd
45	Effect of aerobic exercises on patients with chronic mechanical low back pain: A randomized controlled clinical trial	Dr. Aliaa Mohamed Elabd
46	Own Your Define, Refine, & Shine (Personal Branding)	Dr. Sara Farouk
47	Response of Pulmonary Functions to Inspiratory Muscles Training Versus Pneumatic Compression in COPD Patients	Dr. Heba Gamal Ali Ali El-Daous
48	Bronchial Asthma in Children and Physical Therapy Role: A Narrative Review	Dr. Zahera Refaat
49	Deep Cervical Flexor Endurance Training and Pulmonary Function Response in Mechanical Neck Pain	Dr. Sumaya Serageldin Abdel-Aziz
50	Test-retest reliability of an Android application (Protractor) for range of motion evaluation	Dr. Adel ME Zedan

52	New Approaches in Using Robotic Exoskeleton in Clinical Practice	Dr. Mina Ashraf
53	Effect of Tui-Na Versus Positional Release Techniques on Pregnancy-Related Low Back Pain in the Third-Trimester A Randomized Comparative Trial	Dr. Yara Nabil
54	Impact of Chronic Ankle Instability on Gait Loading Strategy in Individuals with Chronic Ankle Instability: A Comparative Study	Dr. Omar Elabd
55	Aerobic Exercise on Fitness Score and Blood Glucose Level on Type I Diabetes Mellitus Girls	Dr. Nevien Elagamy
56	Effect of Sensory-Motor Training on Knee Function and Dynamic Balance in Patients with Patellofemoral Pain Syndrome	Dr. Mostafa Ibrahim Elshafey
57	The Role of Kinesiotape in Speech Rehabilitation and Oral Motor Improvement in Children with Developmental Apraxia: A Controlled Experimental Study	Dr. Rana Elsayed Amer2
58	Influence of Extracorporeal Shockwave Therapy in Patients with Mechanical Neck Pain	Dr. Mohamed Faramawy El. Deeb
59	Effect of Blood Flow Restriction on Blood Pressure	Dr. Eman Hussein El salhy
60	Empowering Recovery: The Effect of Scapular Exercises on Brachial Plexus Sensitivity and Pain Relief	Dr. Doha Al-Afify
61	Effect of Cervical Stability Exercises on Neck Pain and Disability in Patients with Cervical Spondylosis: A Randomized Controlled Study	Dr. Shimaa Motawea
62	Comparison of Static Balance and Gait Between Subjects with Plantar Fasciitis and Age-Matched Controls	Dr. Marwa Saleh
63	The Roadmap to NPTE “From Credentials to Licensure	Dr. Mohamed E. Kandeel
63	ACL reconstruction: what is the goal?	Prof. Dr. Ayman Ebied
65	Different Diet Aspect in Managing Obesity	DR. Ahmed El Khatieb
66	Business Development and Partnership in Healthcare (Strategic Planning & Tactics)	Dr. Mohamed Kamal
67	From Surgery to Sports: The Role of Prosthetics in Rotation Plasty	Dr. Haytham Elesawy
68	Basic Principles of Sports Nutrition	Dr. Alaa El Din Abd El Razek

69	Navigating The Challenges of Lymphoedema Management	Dr. Michel Fathy
70	Radiological and Clinical Prognostic Factors for Disc Prolapse Resorption and Remodeling	Dr. Mahmoud El-Razzy
71	Limb Lengthening, How to Cross the Limits?	Prof. Dr. Gamal Hosny
72	Sudden Cardiac Death	Prof. Dr. Gamal Shaban
73	MS Clinical Presentation and Red Flags	Prof. Dr. Dina Zamzam
74	Enhancing Quality of Life Through Geriatric Nutrition	Dr. Sara Abo Elsoud
75	The Evolution of Clinical Trials: A Historical Journey Through Innovation and Progress	Dr. Shahnaz Hasan
76	The Combined Effect of Biofeedback Exercises and the Mulligan Approach on Clinical Outcomes in Mechanical Neck Pain: A protocol for RCT	Afnan Safwat, et al
77	AI in physical therapy: A Narrative review	Ganna Mohammed Abd El-Sabour
78	The Impact of Strengthening Exercises on Quality of Life: Evidence from Recent Studies	Kyrillos Amasha Sanad, et al
79	Effect of physical Activity in Reducing Breast Cancer Chemotherapy Toxicities: A Review	Ahmed Mahmoud Elsayed, et al
80	Reminder Application for Physical Therapy Home program	Nora Tarek Abd-Elraoof Mohammed
81	Impact of Manual Therapy Combined with Lumber Stabilization Exercises on Neuromotor Control on Old Patient with Weakness in Dorsiflexors	Sohaila Mostafa Mohamed, et al
82	Awareness of physiotherapy Students of Benha University Regarding the Role of Physical Therapy in Achieving Sustainable Development Goals: A Cross-Sectional Study	Esraa Z. Mohamed Abdu, et al
83	The Blind Guardian: "Enhancing Mobility for the Visually Impaired"86	Mohamed Medhat Wahbba
84	Effect of Intermittent Pneumatic Compression on Patients with Diabetic Neuropathy	Ahmed M Moustafa, et al
85	Reaching Kinematics Improvement After Using Modified Constrained Induced Movement Therapy in Hemiparetic Patients	Abdul Alim Atteya, et al
86	Ergonomic Influence of Workplace Design and Body Posture on Musculoskeletal Pain for Workers with Different Working Experiences in The Egyptian Company for Exporting Agricultural Crops	Omnia Hassan Barhoma, et al

87	Advancing Stroke Rehabilitation: A Systematic Review on the Impact of Brain-Computer Interface (BCI) on Lower Limb Function	Hassan Gooda, et al
88	Delayed Onset Muscle Soreness (Doms) Identification, Cause and Treatment in Physical Therapy Point of View	Abd Elrahman Ibrahim, et al
89	Role of physical Activity in Improving Mental Well-being and Reducing Academic Burnout	Ahmed M. Sayed, et al
90	Nutrition as a Holistic Physical Therapy	Shahd Shorty, et al
91	Effect of Intermittent Pneumatic Compression on Patients with Diabetic Neuropathy	Ahmed M Moustafa, et al
92	Effect of dry Needling versus neural Mobilization Technique on Velocity and Latency of Median Nerve in Patients with Carpal Tunnel Syndrome	Aya Mohammed Eid Atteya, et al
93	Technology-Enhanced Laser Cueing Device for Shoes in Mitigating Freezing of Gait in Parkinson's Disease: A Conceptual Framework	Mustafa A. Kashar
94	Virtual Reality Gaming for Rehabilitation of Patients with Urinary Incontinence: A Systematic review and Meta-analysis	Hagar E. Lialy, et al
95	Physiotherapeutic Protocol and ZnO Nanoparticles: A Combined Novel Treatment Program against Bacterial Pyomyositis	Hesham El-Shaer, et al
96	The Effect of Therapeutic Exercises on Pain, Disability and Quality of Life in Treatment of Sacroiliac Joint Dysfunction: Systematic Review	Haytham Ali, et al
97	The Effect of Laser Therapy Versus Electrical Stimulation on Pain and Facial Function in Treatment of Bell's Palsy: Systematic Review	Haytham Ali, et al
98	The efficacy of transcranial magnetic stimulation on overactive bladder: A systematic review	Muhammad H. Ibrahim
99	Motivation and Balance Recovery in Hemiplegia Through Virtual Reality: A protocol for RCT	Elsayed Aly Elsayed Shalaby
100	Effectiveness of Exercise Therapy in managing muscle atrophy in chronic kidney disease: A Systematic Review of Randomized Control Trials	Manar Eid, et al
101	Effectiveness of Virtual Reality–Based Exercise Rehabilitation in Improving Functional Outcomes and Quality of Life for Cancer-Related Dysfunctions: A Systematic Review of Randomized Controlled Trials	Manar Eid, et al

102	A Protocol for Randomized Controlled Trial Comparing Aquatic and Land-Based Therapy for Enhancing Ability Mand Strength in Paraplegic Patients	Nada Nabil Azab, et al
103	Effectiveness of Short Foot Exercise and Orthotics Based Intervention in Chronic Low Back Pain Due to Flat Foot Deformity: A Randomised Study	Alzahraa Mohamed Ebaid, et al
104	Comparing Lower Body Positive Pressure Therapy and Standard Rehabilitation for Overweight Women with Knee Osteoarthritis	Angham Tarek Zaki Ahmed, et al
105	Postural Habits and Their Impact on Musculoskeletal Health	Raghad A. Mostafa, et al

Artificial Intelligence in Medicine

Prof. Dr. Mohamed Elashhab

Professor of Orthopaedic Surgery, Dean, Faculty of Medicine, Benha University

Abstract

Artificial intelligence is defined as a technology or system being able to demonstrate human-like intelligence and perform cognitive tasks. The recent advancements in computer achievement and storage systems, the recent growth in computer power and portability, and the huge clinical data derived from electronic health records caused this evolution of big data science. With the assistance of new AI technology, the traditional medical environment has changed a lot, and patient diagnosis and treatment were effectively promoted with a higher accuracy and lower human workload.

Architecture for Sustainable Health: Towards Better Quality of Life

Prof. Dr. Zeinab Abd Elkader

Dean, Faculty of Engineering at Benha, Benha Univeristy.

Abstract

In the face of global challenges such as climate change, urbanization, and public health crises, architecture plays a pivotal role in shaping environments that promote well-being and sustainability. This lecture explores the intersection of architectural design and public health, focusing on how sustainable architectural practices can foster healthier, more livable communities. By examining innovative building strategies, materials, and urban planning principles, we will explore how architecture can reduce environmental impact while enhancing physical, mental, and social health. From green spaces and air quality to inclusive design and community engagement, this talk offers a vision for future cities that prioritize both ecological balance and human flourishing, ultimately improving the quality of life for all.

Quality assurance and accreditation in terms of sustainable development and Egypt 20-30 vision

Prof Mohamed M Ghanem

Director of Quality Assurance and Accreditation Center (QAAC) of Benha University, *ex-dean of the faculty of Veterinary Medicine.*

Abstract

The adoption of quality assurance in higher education is one of the strategic goals of the Egyptian Ministry of Higher Education to ensure that the graduate acquires the relevant skills and knowledge according to labor needs. For this reason, the National Authority for Quality Assurance and Accreditation of Education (NAQAAE) has updated their accreditation standards to the revised versions of program accreditation (revised 2022 version) and institution accreditation (revised 2015 version). During the education program accreditation process, the college must fulfill seven accreditation standards with 34 quality indicators with a concentration on the curriculum design and structure, learning and teaching strategies, and diversified assessment methods to ensure students skill acquisition. It is crucial to address that educational programs should meet the labor needs to ensure employability and maintain sustainability. While the institution's accreditation standards included twelve standards with 54 quality indicators that assure that the college has a strategic plan and suitable human resources, infrastructure, financial resources, a safe hygienic environment, and an administration that lead to the effective use of these resources. Based on the new law of NAQAA, the accreditation types were updated to two types: the full accreditation or the conditional accreditation, where full accreditation means the college or program fulfilled all the required standards and is maintained for five years. Whereas the conditional accreditation means one or more standards were partially fulfilled and need an improvement plan to be submitted within 18 months. Recently, starting from the academic year 2025/2026, it will not be allowed to submit for program accreditation unless the whole college is institutionally accredited. Therefore, it is proposed that all colleges are encouraged to submit their document for both institutional and program accreditation synchronously. The implementation of quality assurance standards becomes the top priority of Benha University to match the MHE goals to maintain sustainability by graduating qualified candidates who meet the society's needs and take part in the development of governmental and private sectors.

Driving Quality in Physical Therapy: Insights from GAHAR Accreditation Standards

Dr. Ahmed Hossam Toraieh

MBA, MSc Candidate /Healthcare Quality Surveyor. Orthopedic Physiotherapist Kinetic Health Egypt.

Abstract

This presentation highlights the foundational principles of healthcare gh their application within physical therapy centers, guided by the General Authority for Healthcare Accreditation and Regulation (GAHAR) standards. It explores the essential pillars of quality—patient-centered care, safety, efficiency, and continuous improvement—providing a framework for elevating clinical practices.

The discussion focuses on the GAHAR accreditation standards for physical therapy centers, emphasizing their role in fostering high-quality care. Key elements include patient-centered standards, integrated care delivery, infection prevention, information management, and continuous performance improvement. Specific chapters address critical aspects such as patient empowerment, risk recognition, evidence-based clinical pathways, and the use of technology to enhance care delivery.

By adhering to these comprehensive standards, physical therapy centers can ensure safe, effective, and equitable treatment, achieving excellence in patient outcomes. This session equips attendees with practical insights into implementing GAHAR standards to drive sustainable quality improvement and compliance.

Roll Model in Accredited Specialized physical Therapy Centers

Dr. Ayman Elbatta

Physical Therapy Consultant /Head of Damietta Physical Therapy Center

Abstract

Clinical physical therapy practice is the ultimate goal of continued learning and research. Applying the high standards of accreditation authorities will surely guarantee delivery of services with maximum efficiency and professionalism. Damietta physical therapy center, the first accredited physical therapy center in Egypt by GAHAR. It was our vision years ago that, not only improving services delivery but also applying the highest standards of professionalism. The journey for accreditation was not easy, but with continued working and patience, goals can be achieved.

Physical Therapy in Management of Musculoskeletal Impairments and Disabilities Among Hemophilic Patients

Prof. Dr. Adly Sabour

Professor of physical therapy, Cairo University, Dean of Faculty of Physical Therapy, Badr University in Cairo (BUC), Member of the musckoskeletal committee, World Federation of Hemophilia (WFH)

Abstract

Background:

Hemophilia is a hereditary and chronic disease that mainly affects males. It is characterized by a deficiency in one of the specific clotting factors. The main clinical manifestations of hemophilia are orthopedic, as a result of bleeding in the musculoskeletal system, mainly through bleeding episodes in joints and muscles. Hemophilia is a rare disease. As such, many healthcare professionals are not aware of the integral part physiotherapists play in the management of people with bleeding disorders. The musculoskeletal system is frequently affected by bleeding disorders. Physiotherapists are specialists in the assessment and treatment of the musculoskeletal system. A physiotherapist is important not only as a treatment specialist but also as a consultant in the prevention and management of musculoskeletal impairments and disabilities.

Aim:

Physical therapy and rehabilitation aim to evaluate, diagnose, and treat disability in hemophiliac patients while preventing injury or deterioration. They also aim to maintain the greatest degree of functional capacity and independence in patients with hemophilia or to return them to that state. Rehabilitation, together with clotting factor replacement therapy, has revolutionized the management of these patients in developed countries and reduced their morbidity/mortality rates. Knowledge of the musculoskeletal signs and symptoms of hemophilia is essential for providing a treatment that is suitable and customized. Physical therapy and rehabilitation techniques, which are based on physical means, are intended to reduce the impact that these injuries and their consequences or sequelae can have on the quality of life of patients with hemophilia. Under ideal hemostatic control (primary prophylaxis), people with hemophilia could achieve good physical condition allowing them to enjoy physical activity and a daily life without limitations. Children undergoing primary prophylaxis are quite close to this ideal situation. For these physical activities to be carried out, the safest possible situations must be sought.

Key words: Physical therapy, Haemophilia, Rehabilitation

Benign Paroxysmal Positional Vertigo (BPPV) and Its Impact on Quality of Life

Prof. Dr. Mohamed Khallaf

PT, MSc, PhD, DPT, LSVT, CVRS, Professor of Physical Therapy for Neuromuscular Disorders at Faculty of Physical Therapy, Cairo University, Professor at University of St. Augustine for Health Sciences. USA.

Abstract

Falls are a leading cause of injury and mortality among older adults worldwide, often linked to vestibular dysfunction and dizziness. This presentation explores the complex relationship between vestibular disorders, dizziness, and fall risk, focusing on the prevalence, underlying pathophysiology, and impact on activities of daily living. Utilizing the latest evidence, the presentation highlights effective bedside assessments, including the Dix-Hallpike test, and therapeutic interventions such as vestibular rehabilitation therapy (VRT), which have been shown to reduce fall risk and improve functional outcomes. Key case studies will illustrate practical applications, enhancing clinical decision-making for healthcare professionals. Attendees will leave with actionable strategies for diagnosing and managing vestibular dysfunction, emphasizing the importance of tailored interventions to mitigate fall risk and improve the quality of life in elderly populations.

This session calls on practitioners to "test all elderly patients with a history of falls using the Dix-Hallpike test" and implement evidence-based treatments to address vestibular-related balance disorders effectively.

The Clinical Practice Guidelines for Management of Patients with Congestive Heart Failure

Dr. Nancy Smith, PT, DPT, PhD

Lecturer of Physical Therapy at Winston-Salem State University

Abstract

In 2020, the Clinical Practice Guideline for the Management of Congestive Heart Failure (CHF) was published to guide physical therapist practice for managing individuals with congestive heart failure with reduced and preserved ejection fraction. This presentation will focus on recognizing the incidence and prevalence of CHF in older adults within the United States and globally, the pathophysiology of CHF and its impact on physical therapy practice, clinical findings of stable and decompensated heart failure, patient findings that warrant referral to other practitioners, and the key action statements that guide clinical practice. After attending this workshop, learners should have a better understanding of how to promote physical activity in patients with CHF using clinical best practice and screening patients for referral to other medical providers.

Classification of Peripheral Nerve Injuries

Prof. Dr. Ibrahim M. Zoheiry

Dean of Faculty of Physical Therapy, Al Hayah University in Cairo.

Abstract

Peripheral nerve injuries pose significant rehabilitative challenges, highlighting the critical need for accurate classification to inform diagnosis and treatment planning. This lecture provides physiotherapists with a comprehensive overview of peripheral nerve injury classification systems, spanning from the Seddon (1943) and Sunderland (1951) classifications to contemporary advancements. Beginning with Seddon's three-tiered system (neurapraxia, axonotmesis, neurotmesis), the lecture progresses to Sunderland's five-tiered framework, offering refined structural damage assessment and prognostication. Lundborg's 1988 classification, integrating anatomical disruption with functional outcomes and regenerative potential, is then introduced.

The Whole Picture, A Holistic Approach to Clinical Practice

Dr. Ahmed Mohamed Hefny

DPT, CMP, CMTI, CDNI, MCTA, Founder of AIMS (Academy of international Medical Seminars) , Certified International Instructor in OMT and DN, Accredited Mulligan Concept Teacher MCTA ,Founder of Therapy & Rehab. Centers – Hurghada.

Abstract

The traditional biomedical model in physiotherapy primarily focuses on physical impairments and anatomical dysfunctions. However, the complexity of human health demands a more comprehensive approach that considers the full picture of different pain factors.

The biopsychosocial (BPS) model integrates biological, psychological, and social factors, offering a holistic perspective on patient care. This lecture explores how the BPS model enhances physiotherapy by addressing not only physical symptoms but also psychological well-being and social determinants of health. This lecture explores how addressing pain mechanisms, mental resilience, emotional well-being, and social influences alongside physical impairments leads to better patient outcomes. By embracing the BPS model, physiotherapists can develop personalized, effective, and sustainable treatment plans, leading to improved functional recovery, long-term adherence, and overall quality of life.

Nutrition And Fatigue During Exercise and Work Activities

Prof. Dr. Farag Abd Elmonem

Dean of Physical Therapy, Nahda University Founder and Formar Dean of Physical Therapy Horus University

Abstract

Carbohydrates are important substrates for contracting muscle during prolonged, strenuous exercise, and fatigue is often associated with muscle glycogen depletion and/or hypoglycemia. Thus, the goals of carbohydrate nutritional strategies before, during, and after exercise are to optimize the availability of muscle and liver glycogen and blood glucose, with a view to maintaining carbohydrate availability and oxidation during exercise. During heavy training, the carbohydrate requirements of athletes may be as high as 8 to 10 g/kg body weight or 60 to 70% of total energy intake. Ingestion of a diet high in carbohydrates should be encouraged in order to maintain carbohydrate reserves and the ability to train intensely. Ingestion of a high-carbohydrate meal 3 to 4 hours prior to exercise ensures adequate carbohydrate availability and enhances exercise performance.

Updates in Stroke Protocols

Prof. Dr. Khaled Sallam

Professor and Head of Neuropsychiatry Department Faculty of Medicine
Benha University Treasurer of Egyptian Society of Neurology Psychiatry and Neurosurgery

Abstract

Stroke is the second leading cause of death and the third leading cause of death and disability worldwide, according to the Global Burden of Diseases Study Group An increase in stroke deaths and disability-adjusted life years (DALYs) will accompany future population growth and increased life expectancy in many countries. Simultaneously, stroke care has been optimized through specialized acute facilities (e.g., stroke units), and the advancement of recanalization therapies (i.e., thrombectomy and thrombolysis) has shown positive effects. Discussion and public knowledge are very important.

Ergonomics for Every Age

Prof. Dr. Olfat Diab

Dean, Faculty of Physical Therapy October University for Modern Science and Art MSA.

Abstract

Ergonomics is a science that aligns human capabilities and workplace limitations to enhance performance, minimize risks, and improve quality of life. Adaptive ergonomic strategies and biomechanics provide support for humans throughout their different life stages, such as improving their posture and reducing the risk of musculoskeletal disorders.

Ergonomists and occupational ergonomics specialists are responsible for conducting surveys and implementing ergonomic solutions to fit workers with a standard and optimized workplace. Ergonomic recommendations and good body mechanics throughout life stages, including geriatrics, can improve well-being and comfort. Integrating artificial intelligence with ergonomics can also help health professionals implement ergonomically designed protocols to improve the well-being of humans. Ergonomic awareness also helps people of all ages choose the right tools to maintain their health, improve their productivity, and prevent repetitive stress injuries throughout their lifetime.

In conclusion, ergonomics enhances health, productivity, and quality of life at all stages. By combining ergonomic strategies with AI and promoting awareness, we can reduce health risks and create healthier, more efficient environments for everyone.

Elhafez Technique versus Traditional Treatment for Shoulder Adhesive Capsulitis

Prof. Dr. Haytham Mohamed Elhafez
Professor of Physical Therapy/Basic Science Department/Faculty of Physical Therapy
Cairo University

Abstract

Background: The Elhafez technique is a combination of several physical therapy interventions used to treat shoulder adhesive capsulitis, also known as frozen shoulder. It involves: Axillary ultrasound: Ultrasound waves are applied to the axillary (armpit) region of the shoulder to reduce inflammation and pain; Laser therapy: Laser light is used to stimulate tissue repair and reduce pain and post-isometric facilitation (PIF): This technique involves contracting and relaxing muscles in a specific pattern to increase and facilitate motion in restricted range and reduce muscle tension.

Objective: To compare the efficacy of the Elhafez technique, which combines axillary ultrasound, laser therapy, and post-isometric facilitation, with traditional physical therapy in managing shoulder adhesive capsulitis.

Methods: A randomized controlled trial was conducted involving patients diagnosed with shoulder adhesive capsulitis. Participants were randomly assigned to two groups: the Elhafez technique group and the traditional therapy group. Both groups received a standardized number of treatment sessions. Primary outcomes included pain intensity and shoulder range of motion, measured using validated scales.

Results: The Elhafez technique group demonstrated significantly greater improvements in pain reduction and increased shoulder range of motion compared to the traditional therapy group. These findings suggest that the Elhafez technique may be a more effective treatment option for shoulder adhesive capsulitis.

Conclusion: The Elhafez technique, incorporating axillary ultrasound, laser therapy, and post-isometric facilitation, offers a promising approach for managing shoulder adhesive capsulitis. Further research is warranted to validate these findings and explore the long-term effects of this innovative treatment modality.

Key words: Elhafez technique, Adhesive capsulitis, Axillary ultrasound, Postisometric facilitation.

Hand Rehabilitation Post Flexors Tendons Repair Zone II

Prof. Dr. Mohamed Ali Sarhan

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Abstract

Flexor tendon injuries are some of the more common and complex injuries managed by hand surgeons. A satisfactory outcome in a flexor tendon injury patient requires a good understanding of the treatment procedures, healing stages, clinically relevant anatomy, and rehabilitation of these injuries. In the hand, Zone II—from the FDS insertion to the distal portion of the A1 pulley. In the thumb, Zone II is between the metacarpophalangeal (MCP) and interphalangeal (IP) joints.

Role of physical therapy in Regaining Balance post Stroke

Prof.Dr. Eman Samir Fayez

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Abstract

Stroke is a common disease that generates great morbidity, mortality, and different degrees of disability, causing a great economic impact on families and society. A stroke can lead to a wide range of impairments that predispose the subjects to falls. One of the principal impairments observed in this population is balance dysfunction. It has been reported that 83% of stroke patients present balance impairments, which lead to gait problems, such as low gait speed and alterations in different gait phases, increasing the risk of falling. To regain balance after a stroke, precise assessment followed by training of specific muscle groups in order to improve full-body coordination must be performed.

Physical Therapy for Burn Rehabilitation

Prof. Dr. Nesreen Afify

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Abstract

Burn is a life-threatening condition. Where there is pain, edema, skin damage, associated soft tissue lesions, associated injuries, and multiple body reactions to the burn. Burn rehabilitation needs teamwork decision [emergency room physician, plastic surgeon, nursing care, internal medicine doctor, psychiatrist, clinical pharmaceutical, other sub-specialties according to post-burn complications, and physical therapist]. The role of PT in burn care includes pain and edema management, wound healing, preventing deformities and scar tissue formation, and restoring function as much as possible. The biophysical agents used in burn [photobiomodulation, electrotherapy, magnetic, shock wave, and ultrasound] are very safe, painless, and cheap options for burn management.

Role of Physical Therapy After Rotator Cuff Repair

Prof. Dr. Khaled Ayad

Dean, College of Physical Therapy, Deraya University

Abstract

The ultimate goal of a rehabilitation program after rotator cuff repair is to maintain secure tendon-to-bone attachment and prevent shoulder stiffness. An ideal rehabilitation program should be based on close communication between the surgeon and the physical therapy team. It is important to know all the necessary details about the surgery, such as the size of the tear, the exact tendons involved, the quality of tissue, and the repair technique used, in order to establish a suitable protocol for the patient. A physical therapist should take into account that every patient and every rotator cuff tear is not the same. The purpose of this lecture is to present an approach to common rehabilitation protocols after rotator cuff repair in order to end up with a successful outcome for the patient and finally his return to daily activities.

Connecting the Dots: Mental Health and Sustainability in Physical Therapy

Dr. Manal Helmy Koura

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Abstract

As the field of healthcare increasingly acknowledges the mind-body connection, we emphasize the importance of integrating mental health considerations into physical therapy practices. By adopting eco-friendly practices, therapists can contribute to a healthier environment, which in turn supports the mental health of both patients and practitioners.

The lecture aims to inspire a paradigm shift in physical therapy, urging professionals to connect the dots between mental health and sustainability for more comprehensive patient care and a healthier planet.

We explore the intricate relationship between mental health, environmental sustainability, and the well-being of physical therapists themselves. As the healthcare landscape evolves, there is a growing recognition of the significant impact that burnout can have on practitioners. Emphasizing the importance of addressing mental health not only in patients but also among physical therapists, who often face high levels of stress and emotional exhaustion.

By integrating mental health considerations into their practice, physical therapists can cultivate resilience and improve their own well-being, ultimately leading to better patient outcomes. We outline practical strategies for self-care and stress management tailored to the unique challenges faced by physical therapists.

Artificial Intelligence in Scoliosis

Dr. Tayseer Saber Abdeldayem

Lecturer of Pediatric Physical Therapy - Beni-Suef University, Assistant Professor, School of Health Sciences, University of Hertfordshire Hosted by GAF.

Abstract

Scoliosis is a three-dimensional spinal deformity characterized by lateral bending and rotation. With advancements, artificial intelligence (AI) is increasingly utilized in the diagnosis and treatment of scoliosis. AI has demonstrated promising applications in areas such as early screening, diagnosis, treatment decision-making, intraoperative support, and prognosis prediction. This presentation summarizes the role of AI in clinical scoliosis practice, highlighting various AI models and their applications. Additionally, it addresses the limitations of AI and discusses potential future developments to improve patient outcomes.

Don’t Miss a Step: Essential Updates and Tips for Ankle Sprain Recovery

Prof. Dr. Rafik Radwan

Assistant Professor of Clinical Biomechanics, Cairo University. Founder / CEO Fizik centers. Consultant sports injury & spine rehabilitation. President of Sky life educational organization

Abstract

Ankle sprains are among the most common injuries in sports and daily activities, with a high risk of recurrence if not managed properly. "Don’t Miss a Step: Essential Updates and Tips for Ankle Sprain Recovery" provides an in-depth look at the latest advancements in ankle sprain rehabilitation, emphasizing the importance of a structured, evidence-based approach to recovery. This presentation covers updated treatment protocols, from the acute phase of injury to the return-to-sport stage, including cutting-edge techniques such as proprioception training, dynamic balance exercises, and sport-specific rehabilitation. Practical tips for preventing re-injury and managing chronic ankle instability are also discussed, along with the importance of individualized care, early diagnosis, and rehabilitation compliance. Whether you’re an athlete, coach, or healthcare provider, this session offers crucial insights and actionable strategies to ensure a full recovery and long-term ankle health.

Post-Prostatectomy Rehabilitation

Prof. Dr. Ahmed Fathy Samhan

Vice-Dean of Community Service and Environmental Development Affairs, Faculty of Physical Therapy, Suez University

Abstract

Prostate cancer is cancer that occurs in the prostate. The prostate is a small walnut-shaped gland in males that produces the seminal fluid that nourishes and transports sperm. Prostate cancer is one of the most common types of cancer. Many prostate cancers grow slowly and are confined to the prostate gland, where they may not cause serious harm. However, while some types of prostate cancer grow slowly and may need minimal or even no treatment, other types are aggressive and can spread quickly. More advanced prostate cancer may cause many problems, such as urine retention, urinary incontinence, retrograde ejaculation, and erectile dysfunction.

Physical therapy evaluation in prostate cancer includes palpation (to evaluate pelvic-floor muscle strength, endurance, and coordination), pelvic-floor muscle strength assessment (digital rectal examination), and pad tests. Physical therapy interventions after prostatectomy should be the first choice of treatment and may include cryotherapy, pelvic floor electrical stimulation (faradic or TENS), Kegel exercises, and biofeedback training (BFB).

Technology-Based Rehabilitation Tools (AI)

Prof. Dr. Nermeen Mohamed Abdelhalim

Vice Dean for Education and Student Affairs, Faculty of Physical Therapy
Suez University

Abstract

Technology-based rehabilitation is by applying AI, which is a priority of the World Health Organization (WHO) and is reflected in the rehabilitation and research plan. Artificial intelligence technology (AI) is a general term to describe computers exhibiting human-like intelligence and reason. AI is becoming more prevalent in health care as a tool to improve practice patterns and patient outcomes.
SWORD Health is a system for physical rehabilitation: the system uses wireless motion trackers that patients attach to their bodies.

Kaia Health is like a digital personal coach: an application that tracks the motion of points on the body. Exer Health is a digital measure that tracks the progression. Exer Health is an app used to perform motion assessment & generate accurate objective data. Physitrack is a new standard in exercise programs: +PhysiApp is characterized by professional video to perform the exercise correctly.

ImitoWound is a digital wound measurement: it is a standardized and convenient wound documentation through the mobile image. Robotic therapy creates mechanical rehabilitation devices that work with all body parts, guiding the patient to perform the exact movement in the correct way and providing assistance as needed.

Effects of Bobath Stretching Approach Prior to Modified Constraint-Induced Movement Therapy in Post-Stroke Patients: A Pilot Study

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2.Student of physiotherapy/Faculty of Physical Therapy/Cairo University

Abstract

Purpose: This pilot study examines the combined effects of modified Constraint-Induced Movement Therapy (mCIMT) and Bobath stretching on functional outcomes in chronic stroke patients.
Methods: Six male participants were divided into experimental and control groups. The experimental group underwent daily sessions of Bobath stretching followed by one hour of mCIMT for three weeks, alongside daily mitt wear, while the control group received standard care. Functional Independence Measure (FIM), Range of Motion (ROM), and Box and Block Test (BBT) were used to assess outcomes pre- and post-intervention.
Results: Statistical analysis showed no significant differences between groups at baseline ($p = 0.691$), indicating similar initial conditions. However, significant improvements were observed over time across both groups ($p = 0.001$), with substantial gains in ROM and FIM scores. The interaction effect between group and time was not significant ($p = 0.144$), suggesting comparable improvements between groups.
Conclusion: These findings suggest that integrating Bobath stretching with mCIMT may effectively enhance motor function in chronic stroke patients. Further research with larger sample sizes and extended intervention periods is recommended to confirm these preliminary results and optimize therapeutic approaches for stroke rehabilitation.

Keywords: Bobath stretching; Modified Constraint-Induced Movement Therapy; Functional Independence Measure; Stroke rehabilitation; Upper extremity function.

Outcome Measures: Navigating the Shift from Labs to AI and New Technologies Paving the Path to Sustainable Clinical Outcomes

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PT, PhD, MSc, CMTP, CDNP, Lecturer of MSk university of Hertfordshire

PT wadi degla Football Club

Abstract:

Due to the high cost and limited availability of laboratory-based measurement devices, sustaining the outcome measures has become increasingly challenging. This presentation proposes alternative measurement approaches powered by modern technologies and artificial intelligence (AI), offering significant advantages in terms of accessibility, cost-effectiveness, and ease of use, which ensure clinical value and sustainability. Moreover, it presents the researchers with new ideas for using alternative measurement methods or comparing them with gold standard results.

Relationships between forward head posture and lumbopelvic sagittal alignment in older adults with chronic low back pain

Dr. Aliaa Mohamed Elabd

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Abstract

Background: Abnormal posture creates abnormal stress and strain in many spinal structures which are considered predisposing factors for chronic mechanical low back pain. **Purpose:** To examine the relationships among pain intensity, forward head posture (decreased cranio vertebral angle) and lumbopelvic sagittal alignment (pelvic incidence, pelvic tilt, sacral slope, and lumbar lordosis) in chronic mechanical low back pain patients. **Methods:** A cross-section correlational study was conducted on one hundred patients. A numerical-pain rating scale was used to determine pain intensity. Standardized standing lateral radiographs were analyzed to measure the spinopelvic angles. Reported data were analyzed using correlation coefficients, and regression analyses. **Results:** Lumbar lordosis had very strong positive correlations with each pain intensity and sacral slope. Pain intensity had a strong positive correlation with sacral slope. Moderate positive correlations highlighted between pelvic tilt and craniovertebral angle. Moreover, the pelvic incidence had weak positive correlations with each sacral slope and pelvic tilt. Negative correlations were strong between pelvic tilt and each of pain intensity, lumbar lordosis and sacral slope. Craniovertebral angle had moderate negative correlations with each of pain, lumbar lordosis, and sacral slope. However, the pelvic incidence had no relations with pain, craniovertebral angle lumbar lordosis. Overall, an association of demographic data and measured variables had a significant effect on the pain multi-regression equation prediction model. They accounted for 76.60% of the variation in pain. **Conclusion:** Abnormal spinopelvic posture relates to chronic mechanical low back pain. There are significant associations among pain intensity, FHP and lumbopelvic sagittal alignment in chronic mechanical low back pain patients.

Key words: Chronic low back pain, Head position, Lumbosacral Region, Postural Balance

Visual Reality: Revolutionizing the Way, We Experience the World

Dr. Mahmoud Usama

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Abstract

Virtual reality (VR) is a technique for simulating a real or virtual world by applying the theory of immersion into a virtual 3-D space in which stereoscopic vision, sense of hearing, sense of touch, and sense of smell are very similar to that of the real world within a certain area. A definition of VR can be given as: “Virtual reality is a scientific technology of human-machine interaction for understanding and simulating the real or virtual environment into a 3-D space much similar to that of the real environment and experiencing the nature in a certain range by emerging and showing physical presence into that environment using high-performance computers along with sensory equipment like gloves, headsets, etc. VR changes the way we experience a lot of things—games, websites, movies, specialized learning, training, etc. VR has been around for the last three decades, but it is displayed either on a computer monitor, a projector screen, or with a virtual reality headset called a head-mounted display. By putting on the headset and going nowhere, one can get transported to anywhere. VR also refers to a remote communication environment that provides a virtual presence of users through telepresence and tele-existence, or the use of a virtual artifact (VA), either using standard input devices such as a keyboard and mouse or through multimodal devices such as a wired glove or omnidirectional treadmills. This advancement of technology, which is bringing the media closer to real life, has put its footprints in mostly all real-world applications. Virtual reality (VR) is a powerful and interactive technology that changes our life unlike any other. Virtual reality, which can also be termed as immersive multimedia, is the art of simulating a physical presence for the audience in places both real and imaginary. It usually involves two senses, namely sight and sound. The key property that distinguishes VR from all previous media types is "presence." Presence is the psychological sense of "being there," of actually being immersed in and surrounded by the environment. This discussion is an attempt to give an overview of the current state of environment-related VR, with an emphasis on live VR experiences. The technology, art, and business of VR are evolving rapidly. The various fields of VR are discussed to get a better view about it. The next development based on virtual reality is augmented reality.

From Lab to Market: Insights about the new era of technology transfer in the physical therapy field

Dr. Aya A. Khalil

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Abstract

Technology transfer is the process of moving an idea from an academic lab to the marketplace. Universities and research institutions are fertile ground for inventions that change the way we live. Telehealth, mobile apps, wearable fitness trackers, augmented and virtual reality, electronic health records, advanced wheelchairs, and robotics are examples of inventions that make the world a better place. The professionals who work in the field of technology transfer are responsible for successful innovation management, corporate engagement, protecting and licensing inventions to companies, new venture creation and incubation, and economic development. They provide their services to help researchers for the successful completion of their invention launching. Sales of inventions achieve better outcomes in the lives of many users, returns on scientific research applications, and profit in terms of money to researchers. Physical therapists worldwide are integrating technology into their workflow to enhance rehabilitation and improve outcomes, complementing evidence-based treatment plans. By embracing these technological advancements with research and developing novel ones, physical therapists can provide more personalized, efficient, and engaging care. Thus, scientific research is helping clients on their path to recovery. Researchers could benefit along with patients through research commercialization and innovation sales facilitation.

Empowering Women's Health: The Latest Innovations in Physical Therapy

Prof. Dr. Maha Mohamed Mady

Assistant Professor of Physical Therapy for Women's Health, Shebin El-Kom Teaching Hospital, Menoufia, Egypt.

Abstract

Women's health is an innovative approach that takes into account the special requirements of women at different phases of life. Women's health greatly benefits from physical therapy, which empowers them by encouraging body autonomy, improving self-care, and preventing conditions like osteoporosis and pelvic floor dysfunction. It can greatly improve general quality of life by easing problems associated with menopause, pregnancy, and chronic illnesses.

Despite its advantages, the field faces challenges such as lack of awareness among both patients and healthcare providers, stigma associated with women's health difficulties, and restricted access to expert care.

Emerging innovations in virtual physical therapy and telehealth are addressing these obstacles by providing accessible and adaptable treatment choices. Additionally, incorporating artificial intelligence into therapeutic practices improves patient evaluation and outcome tracking, providing tailored interventions that are customized to each patient's needs.

This overview highlights the most recent advancements in physical therapy tailored to women's health, supported by research and evidence.

Prediction of Back Disability Using Clinical, Functional, and Biomechanical Variables in Adults with Chronic Nonspecific Low Back Pain

Dr. Aliaa Mohamed Elabd

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Abstract

Background: Researchers are focusing on understanding the etiology and predisposing factors of chronic nonspecific low back pain (CNSLBP), a costly prevalent and disabling disorder. Related clinical, functional, and biomechanical variables are often studied, but in isolation. We aimed to identify key factors for managing CNSLBP by examining the relationship between back disability and related clinical, functional, and biomechanical variables and developed prediction models to estimate disability using various variables. **Methods:** We performed a cross-sectional correlational study on 100 recruited patients with CNSLBP. Clinical variables of pain intensity (visual analog score), back extensor endurance (Sorenson test), functional variables of the back performance scale, 6 min walk test, and the biomechanical variable C7-S1 sagittal vertical axis were analyzed to predict disability (Oswestry disability index). **Results:** All variables independently, as well as in multi-correlation, were significantly correlated to disability ($p < 0.05$). The bivariate regression models were significant between back disability and pain intensity (Y = 11.24 + 2.189x), Sorensen results (Y = 105.48 − 0.911x), the back performance scale (Y = 6.65 + 2.486x), 6 min walk test (Y = 49.20 − 0.060x), and sagittal vertical axis (Y = 0.72 + 4.23x). The multi-regression model showed significant contributions from pain ($p = 0.001$) and Sorensen results ($p = 0.028$) in predicting back disability, whereas no significant effect was found for other variables. **Conclusions:** A multidisciplinary approach is essential not only for the management of but also for the assessment of chronic nonspecific low back pain, including its clinical, functional, and biomechanical characteristics. However, special emphasis should be placed on clinical characteristics, including the intensity of pain and back extensor endurance.

Effect of aerobic exercises on patients with chronic mechanical low back pain: A randomized controlled clinical trial

Dr. Aliaa Mohamed Elabd

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Abstract

Background: Chronic mechanical low back pain (CMLBP) is one of the most prevalent and costly disorders. Determining its most effective treatment approach is a priority for researchers.

Purpose: To examine the effects of including aerobic exercise within a conventional therapy regimen for young adults with CMLBP.

Methods: Fifty CMLBP patients (22 males and 28 females) were randomly and equally assigned to one of two groups to receive the prescribed treatment for 8 weeks. The control group received the traditional program only (infrared, ultrasound, burst TENS, and exercises); for the experimental group, an aerobic training program using a stationary bicycle was added. Back pain intensity was the primary outcome. Secondary outcomes included the Oswestry disability index, back extensor endurance measured by the Sorensen test, and physical performance indicated by the back performance scale and the 6-min walk test. A Two-way MANOVA was used for data analysis.

Results: Multivariate tests revealed statistically significant effects of group ($p = 0.002$, partial $\eta2 = 0.182$), time ($p < 0.001$, partial $\eta2 = 0.928$), and group-by-time interaction ($p = 0.01$, partial $\eta2 = 0.149$). Univariate group-by-time interactions were significant for back disability ($p = 0.043$), extensor endurance ($p = 0.023$) and results of the 6-min walk test ($p = 0.023$) showing greater improvement in the experimental group. However, back pain intensity and the back performance scale revealed no significant group-by-time interactions. Within-group comparisons were significant for all measured variables in both groups ($p < 0.001$).

Conclusion: Although a traditional program of infrared, ultrasound, TENS, and exercises is beneficial for CMLBP treatment, adding aerobic exercises to the program leads to more beneficial outcomes.

Keywords: Aerobic training; Chronic low back pain; Exercises; Treatment

Own Your Define, Refine, & Shine (Personal Branding)

Dr. Sara Farouk

12 +Years in Marketing, Training and Business Consulting, MBA Holder International Business Major, DBA Holder Marketing Major.

Abstract

In today's healthcare world, competition is fierce. Patients have countless options, so what makes you their first choice? It's not just your qualifications or skills—it's how you present yourself, connect with others, and build trust. Your personality is your superpower, and your personal brand is how you showcase it. Whether you want to attract more patients, collaborate with top professionals, or grow your practice, your brand is the key to unlocking those opportunities. This talk is your roadmap to stand out. You'll gain practical strategies, relatable insights, and actionable steps to create a personal brand that highlights your strengths, communicates your unique value, and leaves a lasting impression in the competitive healthcare field. By the end, you'll be ready to market your talents with confidence and purpose.

Response of Pulmonary Functions to Inspiratory Muscles Training Versus Pneumatic Compression in COPD Patients

Dr. Heba Gamal Ali Ali El-Daous

Assistant Lecturer of Physical Therapy Department for Internal Medicine and Geriatrics, Faculty of Physical Therapy, Benha University.

Abstract

Background: Chronic obstructive pulmonary disease (COPD), which is a leading cause of mortality and morbidity worldwide, is the main cause of persistent obstruction of the airway leading to respiratory muscle weakness .

Objective: To compare the response of pulmonary functions to resisted inspiratory muscles training versus pneumatic compression in COPD patients.

Methods: Randomized prospective clinical study included 40 patients with moderate and severe COPD. They were recruited from outpatient clinic of chest disease, Benha University Hospital; patients were randomly assigned into two equal groups, group A received Inspiratory Muscle Training (30%of maximum inspiratory pressure) and group B received Pneumatic Compression with abdominal sleeve (30% of one- repetition maximum). All patients trained 3 times per week for 12 weeks. Respiratory function tests were compared before interventions and post 12 weeks.

Results: Comparison between groups post treatment revealed a significant increase in FEV1, FVC, PEFR, FEF25-75% and 6 MWT of group A compared with that of group B ($p < 0.05$) .

Conclusions: Inspiratory muscle training and pneumatic compression improve pulmonary functions and pneumatic compression can be considered as an effective component for pulmonary rehabilitation in COPD patients.

Keywords: COPD, Pulmonary Functions, Inspiratory Muscle Training, Pneumatic Compression.

Bronchial Asthma in Children and Physical Therapy Role: A Narrative Review

Dr. Zahera Refaat

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Abstract

Background: Bronchial asthma is described as a persistent inflammatory condition that disrupts the airways and respiratory system, leading to infrequent occurrences of wheezing, difficulty breathing, chest constriction, and coughing. The disease is on the rise globally, it is estimated that approximately 14% of children have experienced asthma symptoms that affect their activities of daily living .

Objective: This study aimed to explore bronchial asthma in children and the role of physical therapy in its management .

Methods: The published studies in the PubMed, LILACS, Google Scholar, and Cochrane Library Scholar that studied bronchial asthma were reviewed with the following keywords obstructive airway disease, breathing exercise, inspiratory muscle training, physical training, physical therapy in children. Studies that aligned with the scope of the current research were included, while those that did not align were excluded .

Results: The recommended treatment of bronchial asthma is divided into 5 main categories that are widely used, like inspiratory muscle training (IMT), breathing exercises exercise, manual therapy, stretching exercise and physical training .

Conclusion: The reviewed studies highlight that the management of bronchial asthma can be effectively addressed through four primary physical therapy approaches: inspiratory muscle training (IMT), breathing exercises, manual therapy, stretching exercise and physical training. These methods, identified through a comprehensive review of relevant literature, demonstrate their significance as complementary interventions in the overall treatment of bronchial asthma .

Keywords: Obstructive airway disease, Breathing exercise, Inspiratory muscle training, Physical training, Physical therapy in children.

Deep Cervical Flexor Endurance Training and Pulmonary Function Response in Mechanical Neck Pain

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Abstract

Background: Neck pain is a common musculoskeletal complaint with tremendous impact on health and quality of life. Neck pain also leads to pulmonary function restrictive disorder

Objective: to investigate the effect of deep cervical muscle training using pressure biofeedback device on pulmonary functions in chronic mechanical neck pain patients

Methods: Forty subjects of both sexes with mean age 24.8± 1.87 years were participated in this study. They were divided into two groups equal in number; the study group (A) and the control group (B) who were suffering from chronic mechanical neck pain. Group A received deep cervical flexor endurance training and traditional physical therapy modalities. Group B received only traditional physical therapy modalities. Both groups were assessed using the neck disability index questionnaire for functional disability, visual analogue scale for pain intensity, craniocervical flexion test for deep cervical flexor muscle endurance and spirometric tests for pulmonary functions. Patients were assessed before and after treatment .

Results: There was significant improvement in craniocervical flexion test, maximum voluntary ventilation and peak expiratory flow rate in the study group only ($p = 0.0001$). There was a statistically significant improvement in neck disability index ($p = 0.0001$), visual analogue scale ($p= 0.0001$), forced vital capacity ($p = 0.002$) and forced expiratory volume in 1 second ($p= 0.01$) in both groups. The study group showed more statistically improvement in NDI and VAS than the control group ($p < 0.05$), however, there was no statistically significant difference between both groups in FVC & FEV1 ($p > 0.05$).

Conclusion: It is concluded that deep cervical flexor strengthening exercise combined with traditional physical therapy modalities have better clinical effects on the mechanical neck pain and ventilatory functions than traditional physical therapy modalities alone in patients with chronic mechanical neck pain.

Keywords: Non-specific neck pain, cervical stabilizers, ventilatory functions.

Test-retest reliability of an Android application (Protractor) for range of motion evaluation

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Abstract

Background: Several tools are used by physical therapists to assess the range of motion (ROM) for joints of the upper and lower limbs. However, most of them are costly, time-consuming, and difficult to use. Smartphone apps may offer a sustainable solution, but they need further research.

Objective: The current study aimed to determine the within-visit test-retest reliability of an android application (App) (Protractor) for elbow, wrist and ankle joints range of motion evaluation in outpatients with post fracture fixation .

Methods: We evaluated the Android App (Protractor) in twenty-six patients with a mean age of 30 years, who had undergone operative treatment for fractures around the elbow, wrist, and ankle. These patients were recruited from the physiotherapy outpatient clinic at the Faculty of Medicine, Tanta University. Repeated measures were performed within the same session, focusing on motions in the sagittal plane for the elbow, wrist, and ankle joints. All measurements were conducted by the same investigator. Pearson correlation coefficient (r) and intra-class correlation coefficient (ICC) were calculated .

Results: Within-visit test retest intra-rater reliability for elbow, ankle, and wrist joints was excellent (r and ICC≥0.99) except for wrist joint flexion ROM, it was weak and insignificant. The mean group difference of measures obtained in the first and second measurements was close to zero, with the exception of wrist joint flexion, which was -5 degrees, and ankle joint plantar flexion, which was +2 degrees .
Conclusion: The Smartphone android App (Protractor) displayed reasonable within-visit reliability. Protractor app is an alternative and sustainable solution for assessing ROM in trauma patients.
KEYWORDS: Range of Motion; Reliability; Smartphone; Mobile Application; Protractor

New Approaches in Using Robotic Exoskeleton in Clinical Practice

Dr. Mina Ashraf

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Abstract

The development and application of medical exoskeletons have marked a significant advancement in the fields of rehabilitation and mobility enhancement. These wearable robotic devices, designed to support and augment human movement, offer transformative benefits for individuals with spinal cord injuries, stroke-induced mobility impairments, and other neuromuscular conditions. This talk will delve into the latest innovations in medical exoskeleton technology, highlighting key design features such as lightweight materials, improved sensor integration, and enhanced control systems.

We will explore the clinical efficacy of exoskeletons in promoting neuroplasticity, enhancing motor function, and improving quality of life. Case studies will be presented to demonstrate successful rehabilitation outcomes, supported by data from recent clinical trials and user testimonials. Additionally, the talk will address the challenges and limitations currently faced in the widespread adoption of exoskeletons, including cost, accessibility, and the need for comprehensive training protocols for both users and healthcare providers.

Effect of Tui-Na Versus Positional Release Techniques on Pregnancy-Related Low Back Pain in the Third-Trimester A Randomized Comparative Trial

Dr. Yara Nabil

Lecturer of Physical Therapy for Women Health, Benha university Physiotherapy and Nutritional Consultant. Member of World Federation of Chinese Medicine Societies WFCMS.

Abstract

Background: Researchers are prioritizing the development of an effective treatment approach for third-trimester pregnancy-related low back pain (LBP), a prevalent and costly disorder .

Objective: to examine the effects of Tui-Na (TN) versus positional release techniques (PRT) on third trimester pregnancy-related LBP .

Methods: Fifty pregnant women in their third trimester with low back pain were randomly assigned to 1 of 2 groups for 4 weeks of prescribed treatment (TN or PRT). The primary outcome was LBP intensity. Secondary outcomes included the Oswestry disability index for back disability and the pressure pain threshold of lumbar tender points. Two-way multivariate analysis of variance was used for the data analysis .

Results: Multivariate tests indicated statistically significant effects of group ($F = 10.062$, $P < .001$, partial $\eta 2 = 0.302$), time ($F = 473.5$, $P < .001$, partial $\eta 2 = 0.953$), and group-by-time interactions ($F = 4.045$, $P < .001$, partial $\eta 2 = 0.148$). However, the TN group, when compared to the PRT group, revealed a significant decrease in back disability ($P < .001$, partial $\eta 2 = 0.124$) and a significant increase in pressure pain threshold at the Rt and Lt points ($P = .02$ and $.001$, partial $\eta 2 = 0.055$, and 0.108, respectively). Within-group comparisons were significant for all measured variables in both the groups ($P < .001$) .

Conclusion: Although both TN and PRT are beneficial treatments for third trimester pregnancy-related LBP, TN leads to more beneficial outcomes .

Keywords: exercise therapy, low back pain, manual therapy, pregnancy, traditional Chinese medicine

Impact of Chronic Ankle Instability on Gait Loading Strategy in Individuals with Chronic Ankle Instability: A Comparative Study

Dr. Omar Elabd

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Abstract

Background: Lateral ankle sprains rank among the most prevalent musculoskeletal injuries, while chronic ankle instability (CAI) is its most common cascade. In addition to the conflicting results of the previous studies and their methodological flaws, the specific gait loading strategy is still not well studied.
Purpose: The study aimed to investigate the fluctuations in gait loading strategy in people with chronic ankle instability compared to health control.
Methods: A total of 56 male subjects participated in this study and were allocated into two groups: (A) CAI group: 28 subjects with unilateral CAI (age 24.79±2.64 and BMI 26.25±3.50); and (B) control group: 28 subjects without a history of ankle sprains (age 24.57±1.17 and BMI 26.46±2.597). Stance time, weight acceptance time, and load distribution were measured to investigate gait loading strategy.
Results: The study findings revealed that the CAI group had a significantly higher load over the lateral rearfoot. However, MANOVA indicates that there was no overall significant difference in gait loading strategy between the CAI and control groups. Furthermore, in terms of stance time, time of weight acceptance phase, load over medial foot, and load over lateral foot, CAI and healthy controls seemed to walk similarly.
Conclusions: The findings revealed that individuals with CAI had a significant alteration in the lateral rearfoot loading, suggesting a potential compensatory mechanism to address instability during the weight acceptance phase. This could manifest a laterally deviated center of pressure and increased frontal plane inversion during the early stance phase. However, it is acknowledged that these alterations could be both the result and the origin of CAI. The study highlights the vulnerability of CAI during the early stance phase, emphasizing the need for gait reeducation as individuals return to walking, as healthcare clinicians should focus on treatment modalities aimed at reducing rearfoot inversion in individuals with CAI.
Keywords: Chronic ankle instability, Lateral ankle sprain, Gait, Loading strategy

Aerobic Exercise on Fitness Score and Blood Glucose Level on Type I Diabetes Mellitus Girls

Dr. Nevien Elagamy

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Abstract

Background: The interplay between physical activity and metabolic health, particularly in diabetes management, is a pivotal area of investigation. This study examines the impact of 3 months of moderate aerobic exercise on glycemic control and estrogen levels in girls with type 1 diabetes mellitus**.**

Methods: One group pretest posttest design focused on young diabetic girls aged 13-18. a structured program was compromising warm-up exercises and cool-down phases pre- and post-intervention; assessments including blood glucose, estrogen levels, and fitness scores. with subsequent comparison and correlations

Results: Fifteen young girls with a mean age of 15.07 participated in the study. The exercise program led to a reduction in glycated hemoglobin (HbA1c) from 8.1% to 7.23% and an increase in estrogen level from 54.53% to 54.09%, and the fitness score improved from 66.53% to 70.13%.

Conclusion: This study demonstrates that a three-month aerobic exercise regimen enhances glycemic control and estrogen levels in young diabetic females.

Effect of Sensory-Motor Training on Knee Function and Dynamic Balance in Patients with Patellofemoral Pain Syndrome

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Abstract

Background: Patellofemoral Pain Syndrome (PFPS) frequently affects athletes and various other groups. No previous research has explored the combined effect of sensory motor training (SMT) and conventional exercise programs on knee function and dynamic balance. So, this randomized controlled trial with a pre-test and a post-test looks at how the two interventions improve knee function and dynamic balance.
Methods: In this study, 48 participants between the ages of 18 and 25 with PFPS were randomly divided into two equal groups. The SMT group underwent SMT in addition to a conventional exercise program, while the control group engaged solely in the conventional exercise program. The sessions occurred twice a week for six weeks. Both before and following treatment, the patients' knee function was assessed using the anterior knee pain scale (AKPS), as well as their dynamic balance through the Y-Balance Test (YBT).
Results: There was a significant difference in knee function between groups at post-treatment ($P=0.003$) in favor of the SMT group (MD= 4.21). Moreover, within the same patients' group, both groups significantly improved ($P < 0.001$) post-treatment. There was a significant difference in the dynamic balance between groups at post-treatment ($P= 0.033$) in favor of the SMT group (MD= 3.70). Moreover, within the same patients' group, both groups significantly improved ($P < 0.001$) post-treatment.
Conclusions: Incorporating SMT into a conventional exercise program has demonstrated greater advantages compared to solely utilizing the conventional exercise program, due to notable enhancements in knee function and dynamic balance**.**

Keywords: Dynamic Balance; Kneecap; Knee Function; Patellofemoral Pain Syndrome; Sensory Motor Training.

The Role of Kinesiotape in Speech Rehabilitation and Oral Motor Improvement in Children with Developmental Apraxia: A Controlled Experimental Study

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1.Professor of physiotherapy for neurological diseases and surgery, and dean of the Faculty of Physiotherapy, Benha University
2.PhD student Department of Educational and Psychological Sciences Special Education Faculty of specific Education, Benha University.

Abstract

Background: Kinesio Tape (KT) is a flexible tape that can support and stimulate muscles, providing sensory feedback to enhance muscle awareness and coordination. This study aims to assess the effectiveness of KT combined with oral motor training in improving speech performance and oral motor skills.
Methods: A two-group experimental design was carried out on 10 children with developmental apraxia, divided into two equal groups: an experimental group and a control group. The intervention consisted of KT application, oral motor training, and sensory stimulation, provided to the experimental group, while the control group received regular speech therapy. The intervention lasted six months, with progress measured before and after using the assessment tools developed by the researcher.
Results: There was a significant improvement in speech clarity, fluency, sound articulation, oral motor coordination, and oral muscle strength following the intervention with KT ($p < 0.05$). Specifically, speech clarity improved by 60.87%, oral muscle strength by 58.33%, and sound articulation by 59.09%. Sensory processing also improved, particularly in responses to tactile stimuli ($p = 0.042$, effect size = 1.22). Post-intervention analysis showed a clinically meaningful improvement in verbal and motor performance metrics. KT had the most significant positive impact ($p = 0.005$, effect size = 2.55) on verbal articulation, oral muscle strength, and motor coordination.
Conclusions: KT was considered an effective tool for improving verbal and oral motor performance in children with apraxia, based on the results showing significant improvements in speech clarity, fluency, articulation, and oral muscle strength**.**
Keywords: Kinesio Tape, Speech Rehabilitation, Oral Motor Improvement, Developmental Apraxia.

Influence of Extracorporeal Shockwave Therapy in Patients with Mechanical Neck Pain

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Abstract

Background: Extracorporeal shock wave therapy (ESWT) is a novel, beneficial, and non-invasive treatment technique. In a number of orthopedic disorders, ESWT may be used in the absence of surgical indications with comparable outcomes to surgery. ESWT is a popular adjunct to conventional therapy that has been demonstrated to reduce neck pain and pressure pain threshold.
Purpose: The purpose of this study is to explore the effect of adding extracorporeal shockwave therapy to standardized physiotherapy on active cervical ROM (range of motion) in patients with chronic mechanical neck pain (CMNP).
Subject and Methods: This study was a double-blinded (statistician and examiner), pretest-posttest controlled clinical trial. Subjects who met the selection criteria were divided randomly into 2 groups. Group A received only standardized physiotherapy in the form of stretching, isometric training, and a home program of postural correction. Group B received ESWT combined with standardized physiotherapy. The treatment lasts 4 weeks, with two sessions per week, one session weekly for ESWT with standardized physiotherapy, and other sessions for standardized physiotherapy alone. The outcome measure was active cervical range of motion using a universal goniometer.
Results: There was no significant effect of adding ESWT to standardized physiotherapy on active cervical ROM in patients with chronic mechanical neck pain except active cervical left rotation was improved significantly ($p < 0.001$).
Conclusion: These results suggested that adding ESWT to the standardized physiotherapy program may be superior in improving active cervical range of motion compared to standardized physiotherapy alone in patients with chronic mechanical neck pain.
Key words: Chronic mechanical neck pain; Extracorporeal shock wave therapy; Cervical range of motion.

Effect of Blood Flow Restriction on Blood Pressure

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Abstract

Background: Blood flow restriction (BFR) training is a trendy alternative for standard resistance exercise since it can enhance muscular strength and diameter without requiring training with high loads. Some individuals who use BFR at low loads need to attenuate their cardiovascular response to exercise; contraction patterns may be one of the factors that can affect the cardiovascular response.

Purpose: The current study attempted to assess the acute cardiovascular response of healthy young individuals to lower body resistance exercise with blood flow restriction training (BFR).

Methods: The participants were selected from Benha university students; the study was conducted over a 6-month period from September 2022 to March 2023. This was a randomized controlled, pre-test, and post-test study. Subjects who met the selection criteria were divided randomly into 3 groups. Group A: 40 participants performed a single trial of unilateral pattern of resistance exercise with blood flow restriction (UIL-BFR) with 40% of arterial occlusion pressure (AOP) and 30% of one-repetition maximum (1RM). Group B: 40 participants performed a single trial of a bilateral pattern of resistance exercise with blood flow restriction (BIL-BFR) at 40% of arterial occlusion pressure (AOP) and 30% of one-repetition maximum (1RM). Group C: 20 participants performed a single trial of resistance exercise at 30% of one-repetition maximum.

Results: There was significant rise in Systolic blood pressure following exercise in the (UIL-BFR) group (p -value <0.001). In the (BIL-BFR) group, there was a significant reduction in Systolic blood pressure after exercise compared to before exercise (p-value <0.001).

Conclusion: These results suggested that those who want to decrease risk of a cardiovascular incident may choose (BIL- BFR) over (UNI-BFR).

Keywords: BFR, Hypertension, Training, healthy.

Empowering Recovery: The Effect of Scapular Exercises on Brachial Plexus Sensitivity and Pain Relief

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Abstract

Purpose: This study evaluated the effectiveness of scapular upward rotation exercises in reducing brachial plexus mechanosensitivity in individuals with depressed scapular alignment**.**

Methods: Thirty participants diagnosed with scapular depression were included in a single-group pre-test post-test experimental design. Mechanosensitivity was assessed both before and after the intervention using sensory and motor strength-duration curve tests for the trapezius nerve and upper limb neurodynamic tests, which evaluated pain intensity and quality. Measurements were consistently performed on the affected scapula using a standardized protocol. Participants underwent a six-week intervention program consisting of scapular upward rotation exercises performed three times per week.

Results: Post-intervention results revealed a significant increase in sensory and motor Rheobase values and a notable reduction in Chronaxie values ($p < 0.001$). The upper limb neurodynamic tests demonstrated significant reductions in pain intensity for the median, ulnar, and radial nerves, as well as significant improvements in pain quality ($p < 0.001$).

Conclusion: These findings highlight the effectiveness of scapular upward rotation exercises in decreasing neural tissue irritability and improving mechanosensitivity in individuals with depressed scapular alignment, offering a promising therapeutic approach for managing this condition.

Keywords: Depressed scapular alignment; Strength-duration curve; Neurodynamic test; Scapular upward rotation exercises.

Effect of Cervical Stability Exercises on Neck Pain and Disability in Patients with Cervical Spondylosis: A Randomized Controlled Study

Dr. Shimaa Motawea

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Abstract

Purpose: To investigate the effect of cervical stability exercises (CSE) on neck pain and neck functional disability in patients with cervical spondylosis.

Methods: This is a randomized controlled trial. Overall, 40 patients of both genders with ages ranging from 40 to 65 years with mild to moderate cervical spondylosis were recruited randomly and divided into two equal groups; Group (A) (control group) received traditional treatment for cervical spondylosis for 4 weeks, and Group (B) (experimental group) received the same traditional treatment plus CSE for 4 weeks. Pre- and post-treatment assessments using the Visual Analogue Scale (VAS) and Neck Disability Index (NDI) were done for all patients.

Results: The comparison between both groups post-treatment revealed statistically significant reductions in VAS, as well as NDI total score and NDI subscores ($p<0.05$) in favor of the experimental group (B).

Conclusion: Cervical stability exercises have a significant effect on reducing pain and improving function in patients with cervical spondylosis.

Keywords: Cervical spondylosis, Cervical stability exercises, Neck pain, Neck disability index

Comparison of Static Balance and Gait Between Subjects with Plantar Fasciitis and Age-Matched Controls

Dr. Marwa Saleh

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Abstract

Background: Plantar fasciitis is one of the most common causes of plantar heel pain, with approximate incidence of 10% in general population. Several treatment methods have been proposed. Extracorporeal shock wave therapy (ESWT) and myofascial release (MFR) are commonly investigated in research for their effect on plantar fasciitis pain, tenderness and foot function.

Purpose: Investigating the effect of ESWT versus MFR on pain measured as VAS and tenderness measured as pressure pain threshold (PPT) in plantar fasciitis.

Methods: forty-five subjects, both genders aged 30-45 years with plantar fasciitis for at least one month were recruited in this study. They were randomly assigned in a pre-test post-test three groups experimental design. Experimental group (A), included 14 patients, received radial ESWT plus conventional treatment. Experimental group (B) included 14 patients, received MFR plus conventional treatment. Control group (C) included 14 patients, received conventional treatment in the form of TENS, stretching exercises and hot application. Pain intensity was measured using visual analogue scale (VAS), tenderness, expressed as PPT, was measured using algometer, ROM measured by electronic goniometer and functional level measured by FAAM scale.

Results: There was a significant reduction in pain intensity in the three groups post-treatment. The percent of change of VAS in the groups A, B, and C were 73.72, 28.34, and 24%, respectively. The percent of change of post-treatment PPT scores of points I, II, and III in group (A) were 78.03, 71.01, and 62.56%, respectively. For group (B) were 35.8, 28.75, and 22.65%, respectively, while those in group (C) were 12.9, 13.88, and 12.81%, respectively. The percent of change of FAAM scores was 73.53% for group (A), 39.98% for group (B), and 33.91% for group (C). The percent of change of dorsiflexion ROM was 0.75% in group (A),1.82% in group (B) and 1.81% in group(C), While for plantarflexion, it was 2.4% in group (A), 0.95% for group (B) and 1.23% for group (C).

Conclusion: Shock wave therapy shows better effects than myofascial release and conventional treatment in reducing pain intensity and tenderness and improving activity of daily living in plantar fasciitis patients, although there was no difference between both of them as regards ankle ROM.

Keywords: Plantar fasciitis, radial extracorporeal shock wave therapy, myofascial release.

The Roadmap to NPTE "From Credentials to Licensure "

Dr. Mohamed E. Kandeel

PT, DPT, MS

Abstract

The journey to becoming a licensed physical therapist (PT) in the United States involves a structured, multi-step process designed to ensure competency and adherence to professional standards. This presentation provides a comprehensive roadmap for internationally trained physical therapists and domestic graduates, outlining key milestones from credential evaluation to state licensure (New York).

The process begins with credentialing, where foreign-trained applicants must have their educational qualifications assessed by agencies such as the Foreign Credentialing Commission on Physical Therapy (FCCPT) to determine equivalency to U.S. educational standards. This is followed by obtaining eligibility to sit for the National Physical Therapy Examination (NPTE), a standardized test administered by the Federation of State Boards of Physical Therapy (FSBPT).

Additionally, candidates must fulfill other requirements, including English language proficiency exams (e.g., TOEFL) required by certain states of the U.S., supervised clinical practice (if required by certain states), and adherence to specific state regulations. Upon passing the NPTE, applicants must complete the state licensure process, which varies by jurisdiction, to legally practice as a physical therapist in the U.S.

This presentation aims to provide aspiring physical therapists with clear guidance on navigating this pathway efficiently, addressing potential challenges and updates, and offering strategies to successfully transition into the U.S. healthcare system.

ACL reconstruction: what is the goal?

Prof. Dr. Ayman Ebied

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Abstract

The Anterior Cruciate Ligament ACL plays a pivotal role in knee kinematics and stability. Along with the articular configuration and other ligaments and menisci, the ACL maintains knee stability in various daily and sporting activities. When torn, altered kinematics may result in instability in the anteroposterior plane but, more importantly, in rotation. There is ample evidence that patients who suffer from chronic ACL insufficiency present with associated damage to important structures like the menisci and articular cartilage. Irreparable meniscus injuries as well as chondral lesions do not only hinder the knee pain-free range of movement (ROM) but also accelerate the degenerative changes with subsequent arthritis.

The techniques for ACL reconstruction have developed over the years based on our understanding of the ACL anatomy. Most recently, it is to chose the femoral foot print defined by the acronym IDEAL (Isometric-Direct-Excentric-Anatomic-Low tension). These techniques ensure the insertion of the ACL graft in the anatomic position that will help ligamentization over the period of many months. Additionally, the value of restoring the function of the anterolateral ligament has been raised. Hence, iliotibial band tenodesis is usually added to augment the function of the intra-articular ACL reconstruction in patients with a high degree of rotational instability. For patients to regain pre-injury levels of activity, the surgical ACL reconstruction should be in parallel with a well-designed and executed program of pre- and post-operative rehabilitation.

The role of physiotherapy in the management of patients with ACL injury starts at a very early stage after trauma with a focus on reducing pain, recovering quadriceps function, and avoiding muscle wasting that happens if the patient resorts to immobilization. From week 1 to 6 after trauma, the patient should regain ROM and quadriceps function, which would determine the timing of surgery. Post-operatively, the rehabilitation period may extend up to 8 or 9 months. Whether the patient can go back to spotting activities or not does not depend only on the favorable outcome of ligament healing but also on restoring balance, proprioceptive function, and neuromuscular responses that remain in the hands of the physiotherapy team. Although ACL reconstruction has not been proved to prevent the development of arthritis, a successful outcome would allow patients to restore pre-injury levels of activity, a goal that can only be achieved through the collaborative efforts of surgeons and physiotherapists.

Different Diet Aspect in Managing Obesity

Dr. Ahmed El Khatieb

Lecturer for Pharmacology Department, Faculty of Medicine. Clinical Nutrition Consultant, Certified Life coach.

Abstract

Fad diets are popular weight-loss plans that often promise quick results, but they may not be nutritionally balanced or sustainable long-term. Some common types of fad diets are 1) Low-Carb diets, which focus on reducing carbohydrate intake, such as the keto diet, which is high fat, moderate protein, very low carbs, and the Atkins diet. 2. High-Protein Diets, which focus on emphasizing protein-rich foods while reducing carbs and fats, such as the Dukan diet, which is low in carbs and high in protein in stages, and the paleo diet. 3-Low-Fat diets focus on minimizing fat intake, such as the Ornish diet, which is a low-fat vegetarian diet, and the T-Factor diet. 4. Detox and cleansing diets, which focus on removing toxins from the body, often through very restrictive food choices or liquid-only plans, such as juice cleanses, which are consuming only fruit and vegetable juices, and master cleanses. 5. Meal replacement diets focus on replacing meals with shakes, bars, or other supplements, such as Slim Fast meal replacement shakes and snacks and the HMR program. 6. Intermittent fasting focuses on alternating between periods of eating and fasting, such as the 16:8 method, which is eating within an 8-hour window and fasting for 16 hours, and the 5:2 diet. 7. Single-food or limited-food diets focus on relying on one or very few foods, as the cabbage soup diet is primarily cabbage soup and the grapefruit diet. 8-Blood type diet focuses on eating foods based on your blood type, as the blood type diet by Dr. Peter D'Adamo, 9. A raw food diet focuses on eating uncooked, unprocessed foods. 10. Very low-calorie diets (VLCDs) focus on drastically reducing calorie intake. 11. Gluten-Free Diet.

Business Development and Partnership in Healthcare (Strategic Planning & Tactics)

Dr. Mohamed Kamal

-Head of Business Development & Partnerships Unit at Hansa Medica Group for Healthcare- Grand Egyptian Museum Clinics Executive Manger, Co Founder of HLTA Egypt for Healthcare Practitioners Growth.

Abstract

In this lecture, we will explore effective business models in healthcare, the significance of forming successful partnerships among key stakeholders, and the role of strategic planning and tactical execution in fostering innovation and long-term sustainability.

By the end of this session, attendees will gain valuable insights into building resilient business models, leveraging partnerships for competitive advantage, and implementing strategic and tactical approaches to navigate challenges in the healthcare industry.

Headlines :

-The Evolution of Healthcare Business Development
-Business Development Strategies in Healthcare
-The Power of Strategic Partnerships in Healthcare
-Strategic Planning in Healthcare
-Tactical Approaches for Success in Healthcare Markets
-Case Studies & Success Stories
- Open discussion and Q&A session

From Surgery to Sports: The Role of Prosthetics in Rotation Plasty

Dr. Haytham Elesawy

Lecturer of Physical Therapy for Integumentary System, Faculty of Physical Therapy, Pharos University in Alexandria.

Abstract

While rotationplasty offers a functional alternative to amputation, we need to explore the multifaceted role of prosthetics in enhancing the functionality and quality of life. We will briefly delve into the surgical principles of rotation plasty, highlighting its applications in various clinical scenarios, particularly in pediatric oncology and trauma cases. The discussion will extend to the design and development of specialized prosthetics that cater to the biomechanical needs of rotationplasty patients. Emphasizing the importance of a multidisciplinary approach, we will examine how collaboration between surgeons, physical therapists, and prosthetists can optimize rehabilitation outcomes. Furthermore, a showcase of inspiring case studies of children who have successfully integrated prosthetics into their lives, reclaiming their passion for sports. Aims to ignite a dialogue on the future of prosthetic technology and its potential to empower patients through mobility and athleticism.

Basic Principles of Sports Nutrition

Dr. Alaa El Din Abd El Razek

Consultant of Physical Therapy and Nutrition, D.P.T., Cairo University Vice President of Sky Life Organization Head of Sports Nutrition at Fizik Centers.

Abstract

Sports nutrition plays a vital role in enhancing athletic performance, recovery, and overall health. This lecture provides a comprehensive overview of the fundamental principles of sports nutrition, emphasizing the importance of nutritional assessment, macronutrient distribution, hydration, and dietary planning tailored to various sports disciplines. Key topics include the evaluation of an athlete's physical and nutritional status through anthropometric measurements, biochemical markers, and dietary intake analysis. The lecture explores the role of carbohydrates, proteins, and fats in energy metabolism, detailing their optimal intake for different training phases. Nutrient timing is highlighted as a crucial factor in improving endurance, strength, and recovery, with specific recommendations for pre-exercise, intra-exercise, and post-exercise nutrition. Hydration strategies and electrolyte balance are discussed in relation to performance and thermoregulation. Additionally, the lecture covers the impact of micronutrient deficiencies on athletic performance and provides guidance on appropriate supplementation when necessary. Practical approaches to meal planning are addressed, incorporating total energy expenditure calculations, periodized nutrition, and sport-specific dietary adjustments. The session also underscores the importance of individualized nutrition strategies, considering factors such as training intensity, competition schedules, and seasonal variations. By applying evidence-based nutrition principles, athletes, coaches, and healthcare professionals can optimize physical performance, minimize injury risk, and support long-term health and well-being.

Navigating The Challenges of Lymphoedema Management

Dr. Michel Fathy

Int. instructor at Gueltig lymphology Germany, President, Egyptian lymphedema Therapy Association ELTA-H.O.D lymph dept,Cleopatra hospitals group.

Abstract

Lymphedema, a chronic condition characterized by the accumulation of lymphatic fluid and swelling, poses significant physical, emotional, and social challenges for patients. This lecture, Navigating Lymphedema Management, provides a comprehensive overview of the condition, its underlying mechanisms, and evidence-based strategies for effective management.

The session begins by exploring the anatomy and physiology of the lymphatic system, highlighting the causes of lymphedema, including primary (congenital) and secondary (acquired) forms. Key risk factors, such as cancer treatments, surgery, and infections, are discussed to enhance early detection and prevention. Central to the lecture is the staging and diagnosis of lymphedema, emphasizing the importance of clinical assessment, imaging techniques, and patient history.The presentation then delves into the cornerstones of lymphedema management, including: Patient Education: Empowering patients with self-care techniques, lifestyle modifications, and psychological support to improve quality of life, The lecture also addresses emerging research and technologies in lymphedema management, offering hope for more personalized and effective treatments. Challenges in access to care and the need for multidisciplinary collaboration are highlighted to underscore the importance of a holistic approach.

In conclusion, Navigating Lymphedema Management equips healthcare professionals with the knowledge and tools to optimize patient outcomes, reduce complications, and enhance the overall well-being of individuals living with lymphedema. By integrating evidence-based practices with compassionate care, we can transform the journey of lymphedema management into one of hope and resilience

Radiological and Clinical Prognostic Factors for Disc Prolapse Resorption and Remodeling

Dr. Mahmoud El-Razzy

Consultant physical therapist, MSc. PhD. Candidate, PT for Spine & Neuromuscular disorders, Radiological and Clinical Prognostic Factors for Disc Prolapse Resorption and Remodeling.

Abstract

Disc prolapse is a common spinal condition with variable clinical outcomes. While some cases require surgical intervention, others undergo spontaneous resorption and remodeling. Understanding the radiological and clinical prognostic factors that influence these outcomes is crucial for optimizing patient management.

This lecture explores key imaging markers, including disc hydration, size, migration, and inflammatory response, as well as clinical predictors such as symptom duration, patient age, and metabolic factors. We will discuss the biological mechanisms underlying disc resorption, including macrophage activity and enzymatic degradation, and their implications for conservative versus surgical treatment strategies.

By integrating radiological findings with clinical assessments, clinicians can better predict the likelihood of spontaneous healing and tailor treatment plans accordingly. The session will provide a comprehensive review of current evidence, case studies, and practical guidelines for enhancing prognostic accuracy in disc prolapse management.

Limb Lengthening, How to Cross the Limits?

Prof. Dr. Gamal Hosny

Professor of Orthopaedic Surgery, Faculty of Medicine, Benha University.

Abstract

Limb lengthening continues to be a real challenge to both the patient and the orthopedic surgeon. Although it is not a difficult operative problem, there is a long and exhausting postoperative commitment that can jeopardize early good results. The method of fixation is evolving rapidly from unilateral external fixator to ring fixator, computer-assisted, and finally lengthening intramedullary nails. The newly manufactured nails avoid many of the drawbacks of external fixation, but they have their own complications. In general, the indications for limb lengthening are controversial. The indications have been extended from lower limb length inequality to upper extremity lengthening, including humeral, forearm, and phalangeal lengthening. A wide range in frequency of complications is recorded in the English literature, which may reach up to 100% of cases treated. With developing experience, cosmetic lengthening has become possible using external or internal lengthening devices with an acceptable rate of problems. The magnitude of lengthening can be more than 100% of the original length in selected cases. In achondroplasia, lengthening 35 cm can be achieved.

Sudden Cardiac Death

Prof. Dr. Gamal Shaban

MD,FESC, FSCAI FHRS Consultant of Cardiology and Critical Care.

Abstract

Sudden cardiac death (SCD) is death due to a cardiovascular or unidentifiable cause that occurs within an hour of the onset of symptoms. Death occurs when the heart stops beating or is not beating sufficiently to maintain perfusion and life. Those who have experienced sudden cardiac arrest (SCA) have a higher risk of SCD. The causes in people under the age of 39 are often a thickening of the heart muscle or an electrical problem with the heart. In older people, SCD is more likely to be caused by a narrowing of the blood vessels that supply the heart. However, primary care physicians can prevent SCA and SCD through counseling about healthy lifestyle changes, regular health monitoring, and treatment adherence. Screening might help by identifying heart conditions at an early stage before they cause symptoms. This in turn would allow treatment to start earlier.

MS Clinical Presentation and Red Flags

Prof. Dr. Dina Zamzam

Professor Of Neurology Ain Shams University.

Abstract

Multiple sclerosis is a chronic autoimmune disease affecting the central nervous system and is characterized by inflammation, demyelination, gliosis, and neuronal loss. This condition manifests with a wide range of neurological symptoms, such as vision impairment, numbness and tingling, focal weakness, bladder and bowel dysfunction, and cognitive impairment. Multiple sclerosis has various disease courses, including relapsing-remitting, primary progressive, and secondary progressive. Diagnosis of multiple sclerosis (MS) requires exclusion of diseases that could better explain the clinical and paraclinical findings. A systematic process for exclusion of alternative diagnoses has not been defined. An international panel of MS experts developed consensus perspectives on MS differential diagnosis. Treatment goals include decreasing relapses and magnetic resonance imaging activity while minimizing permanent disability and addressing various patient concerns such as bladder and bowel dysfunction, depression, cognitive impairment, fatigue, sexual dysfunction, sleep disturbances, and vertigo.

Enhancing Quality of Life Through Geriatric Nutrition

Dr. Sara Abo Elsoud

Consultant of anesthesia/Head of department of clinical nutrition and obesityQewaisna central hospital /Vice President of the Association of Nutritionists – Qalyubia.

Abstract

Good nutrition promotes health-related quality of life (HRQOL) by averting malnutrition, preventing dietary deficiency disease, and promoting optimal functioning. However, definitions of quality of life also encompass life satisfaction and both physical and mental well-being. Nutrition and diet have not been a part of mainstream research on quality of life and are not included among key quality of life domains. This article explores connections between diet and nutritional status in relation to HRQOL measures and overall well-being among older adults. Adding life to years, not years to life, is the current agenda for productive and successful aging. Policies and programs on aging are increasingly focused on identifying ways to improve quality of life and health status rather than just extending life span.

The Evolution of Clinical Trials: A Historical Journey Through Innovation and Progress

Dr. Shahnaz Hasan

PT PhD, PGDHHM, COMT(Australia), Associate Professor, Department of Physical Therapy and Health Rehabilitation, College of Applied Medical Sciences, Majmaah University, Al Majmaah 11952, Saudi Arabia.

Abstract

The history of clinical research is the systematic exploration of innovation, perseverance, and progress, from the observational practices of ancient physicians to the data-driven trials of the modern era. Clinical trials are the backbone of evidence-based medicine, playing a pivotal role in clinical research by generating the scientific evidence to develop and approve new therapies. Clinical trials have evolved over the centuries, progressing from simple experiments to sophisticated, ethically regulated studies that drive medical advancements. This review explores the historical journey of clinical trials, highlighting key innovations, ethical milestones, and technological advancements that have shaped their development. By examining pivotal moments such as James Lind's scurvy trial, the advent of randomized controlled trials (RCTs), and the integration of artificial intelligence in trial designs. This study provides insights into how clinical trials have adapted to scientific and technological progress in clinical research. It also explores contemporary challenges and future directions in clinical research, emphasizing the role of digital health, precision medicine, and patient-centric approaches.

Keywords: Clinical trials, history, randomized controlled trials, ethics, medical research, innovation

The Combined Effect of Biofeedback Exercises and the Mulligan Approach on Clinical Outcomes in Mechanical Neck Pain: A protocol for RCT

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Abstract

Background: Although Mulligan mobilization and exercise programs yield positive effects in reducing mechanical neck pain, further research is needed to investigate the additional benefits of incorporating biofeedback into Mulligan mobilization.
Purpose: The purpose of this study is to evaluate the impact of adding biofeedback to Mulligan mobilization and exercise programs on mechanical neck pain and to determine whether this combination leads to greater improvements in pain reduction and functional outcomes compared to Mulligan mobilization and exercise programs alone.
Methods: This study will include patients with mechanical neck pain who will be randomly assigned to two groups: one receiving Mulligan mobilization and exercise programs and the other receiving Mulligan mobilization, exercise programs, and biofeedback. Pain levels, range of motion, and functional outcomes will be measured before and after the intervention, as well as at follow-up points of 3 months and 6 months. Tools such as the Visual Analogue Scale (VAS), Range of Motion (ROM) measurements, and the Neck Disability Index (NDI) will be used for evaluation. Data will be analyzed to compare the effectiveness of the two interventions.
Key words: Mechanical neck pain**;** Biofeedback; Mulligan Mobilization.

AI in physical therapy: A Narrative review

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Abstract

Background: Artificial Intelligence (AI) is reshaping physical therapy (PT) by introducing advanced diagnostic tools, personalized rehabilitation programs, and enhancing patient outcomes.

Purpose: This review explores the integration of AI in PT, discussing its applications, benefits, challenges, and future directions.

Methods: Recent studies in PubMed, Scopus, and Google Scholar, emphasizing machine learning, computer vision, and telerehabilitation, were reviewed.

Results and conclusion: Findings highlight that while AI enhances diagnostic precision with tools like motion analysis systems achieving an accuracy of 92% in detecting gait abnormalities compared to 85% by expert clinicians. Deep learning models for musculoskeletal diagnostics report a sensitivity of 94% in detecting ligament injuries, outperforming traditional methods. AI-enabled telerehabilitation platforms increase patient adherence rates to 75%, and wearable devices deliver 95% accuracy in detecting abnormal movement patterns. However, challenges remain, including ethical issues, data quality concerns, and infrastructure requirements, which must be addressed to maximize AI's potential in physical therapy.

Keywords: Artificial intelligence, physical therapy, diagnostics, personalized rehabilitation, wearable technology.

The Impact of Strengthening Exercises on Quality of Life: Evidence from Recent Studies

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Abstract

Background: Given the growing body of evidence regarding the benefits of muscle-strengthening activities, approximately 70% of adults globally still do not engage in regular strength-building exercises.

Purpose: This study evaluates the impact of strength training on various populations, including elite athletes, older adults, and individuals with chronic diseases.

Methods: By analyzing modern clinical studies published between 2019 and 2024, we aim to provide evidence-based guidelines for integrating strength training into public health strategies and rehabilitation protocols.

Results: Key findings include a 35% reduction in falls among older adults, a 25% decrease in depressive symptoms, and a 40% improvement in rehabilitation outcomes for patients with chronic diseases.

Conclusion: This study highlights the effect of strengthening exercises on quality of life

Effect of physical Activity in Reducing Breast Cancer Chemotherapy Toxicities: A Review

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Abstract

Recent research highlights the potential benefits of exercise during chemotherapy for breast cancer. Regular physical activity during treatment has been associated with reduced fatigue, improved cardiovascular health, enhanced cognitive function, and better overall quality of life. However, the impact of exercise varies based on intensity, duration, and individual patient conditions. This review aims to provide a comprehensive analysis of the existing literature on the effects of exercise during chemotherapy, with a focus on cardiovascular health, cognitive function, and long-term survivorship.

Reminder Application for Physical Therapy Home program

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Abstract

Purpose: This research investigates the critical role of home-based physical therapy exercises in rehabilitation and addresses the prevalent issue of patient nonadherence due to forgetfulness.

Methods: A mixed-methods approach was employed, including a survey of 68 patients, to identify barriers to adherence and evaluate the potential of a digital reminder application.

Results: The survey revealed that 45.6% of patients occasionally struggle to remember their exercises, while 27.9% forget them entirely. Notably, 94.1% of participants expressed interest in using a reminder application. The proposed app, featuring instructional videos and progress tracking, aims to enhance adherence, improve rehabilitation outcomes, and reduce the burden on caregivers and healthcare systems.

Conclusion: The findings underscore the need for mobile applications to support patient compliance with home-based therapy regimens.

Keywords: Mobile application, smartphone, rehabilitation, self-management.

Impact of Manual Therapy Combined with Lumber Stabilization Exercises on Neuromotor Control on Old Patient with Weakness in Dorsiflexors

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Abstract

Background: Lumbar disc herniation (LDH) is a common orthopedic condition which significantly impairs patients' health-related quality of life. Core stabilization exercises retrain the important function of local trunk muscles and increase the accuracy of the sensory integration process for stability of the spine in individuals with low back pain (LBP). Lumbar stabilization exercises and manual therapy primarily aimed at improving neuromuscular control, strength, and endurance of the muscles, which are considered to be central to the maintenance of dynamic spinal and trunk stability. It is considered as a safe exercise with the advantages of having multiple stages, as well as cost-effectiveness.
Purpose: to determine the impact of manual therapy combined with lumbar stabilization exercises on neuromotor control in old patients with weakness in dorsiflexors

Methods: Participants with radiculopathy will be recruited in the four research centers through official hospital websites and offline advertising with inclusion criteria like age of participants being more than 50 years, ability to perform forward movement without an aid or pain and discomfort, the course of the condition being more than 3 months, voluntarily participating in this trial, and signing the informed consent form.

Keywords: Lumber disc herniation, Lumber stabilization, Manual therapy, Core stability exercises, Low back pain, Weakness in dorsiflexor.

Awareness of physiotherapy Students of Benha University Regarding the Role of Physical Therapy in Achieving Sustainable Development Goals: A Cross-Sectional Study

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Abstract

Background: Physical therapy has a vital role in achieving sustainable development goals. For example, improving individuals' ability to work promotes good health and well-being, reduces environmental impact, supports sustainable economic growth, and improves knowledge of the sustainable development goals, ranging from low to patient productivity. However, few studies were conducted to assess physiotherapy students awareness of sustainable development and their role in achieving its goals.
Purpose: This study aims to investigate the level of awareness of physiotherapy students of Benha University regarding the role of physical therapy in achieving sustainable development goals.
Methods: A cross-sectional study was conducted among 333 undergraduate students from the Faculty of Physical Therapy, Benha University. The data was collected by an online questionnaire including questions about demographic data, students' knowledge of sustainability, and physical therapy contributions to sustainable development, and the data was analyzed using SPSS version 28 for Windows.
Results: Participants were moderate, even though they were aware of their role in sustainable development, without realizing its direct link to the goals. Also, participants who heard of sustainable development or had previously attended any specific non-academic courses on Sustainable Development Goals presented high levels of awareness and attitudes.
Conclusion: The study findings showed a high level of awareness of physical therapy contributions in sustainability but a significant gap of knowledge regarding understanding of sustainable development goals, emphasizing the necessity for increasing educational efforts and integrating sustainable development-related content into physical therapy curricula to cover this gap.
Keywords: Awareness, Physiotherapy, Students, Sustainable development goals.

The Blind Guardian: "Enhancing Mobility for the Visually Impaired"

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Abstract

Background: Visually impaired individuals face significant challenges in mobility and navigating their environments, leading to risks of injury and reduced independence. While traditional aids such as walking sticks offer some assistance, they do not fully address the complexities of obstacle detection in various environments. The integration of modern technology with physical therapy is promising to improve safety, mobility, and independence for the visually impaired.

Objectives: This project aims to develop a wearable, portable device that assists blind individuals by detecting obstacles and providing auditory alerts. The primary goal is to enhance user mobility and safety by offering a reliable warning system. Additionally, the project explores the device's potential integration into physical therapy programs, where it can help improve balance, coordination, and spatial awareness for rehabilitation and injury prevention.

Methods: The device utilizes an Arduino UNO microcontroller, an ultrasonic sensor (HC-SR04), and a buzzer to detect obstacles and alert the user. The ultrasonic sensor emits sound waves to measure distances to objects, while the buzzer signals when obstacles are detected within a specific range. The device was tested by placing objects at varying distances to verify the accuracy of the obstacle detection system. The potential applications in physical therapy were also explored, focusing on its preventive and rehabilitative role.

Results: The device successfully detected obstacles and provided real-time auditory alerts when objects were within a defined range. The buzzer reliably activated in response to obstacles, significantly reducing the risk of falls and injury for visually impaired users. Testing also revealed that the device could aid in improving users' balance and motor coordination, as they were able to make more informed movement decisions. Users reported increased confidence, independence, and motivation to move, especially in unfamiliar environments.

Conclusion: The Blind Guardian offers a promising solution for enhancing mobility and safety for the visually impaired. By combining obstacle detection with physical therapy applications, the device not only prevents injuries but also supports rehabilitation efforts. With further development, this device could set a new standard for assistive technologies, significantly improving the quality of life for blind individuals and promoting their independence.

Keywords: Blind, Mobility, Technology.

Effect of Intermittent Pneumatic Compression on Patients with Diabetic Neuropathy

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Abstract

Background: The most prevalent microvascular consequence of diabetes is diabetic polyneuropathy (DPN), which affects over 50% of individuals with type 2 diabetes. It is a prevalent complaint that contributes to morbidity. It has been demonstrated that intermittent pneumatic compression improves this impairment. despite the fact that there is currently insufficient research on this topic.

Purpose: to study the impact of intermittent pneumatic compression on nerve conduction velocity, pain, and quality of life in patients with diabetic polyneuropathy.

Methods: 40 diabetic neuropathy patients, both male and female, between the ages of 50 and 65, were split into two equal groups at random (Study and Control). Both groups received a traditional program of physical therapy. Furthermore, intermittent pneumatic compression was administered to the study group. For four weeks, the 45–60-minute treatment sessions were held three times a week. Prior to and following treatment, the Nerve Conduction Velocity (NCV), Neuropathic Pain Scale (NPS), Pain Disability Questionnaire (PDQ), and Short Form 36 Questionnaire were used to measure amplitude and velocity, pain degree, disability and function degree, and quality of life in the same group and between the two groups.

Results: There was a statistically significant increase in the nerve conduction amplitude and velocity after treatment in both groups. This improvement was more statistically significant in the group of IPC.

Conclusion: Intermittent pneumatic compression adds a valuable effect to the conventional physiotherapy program in improving amplitude, velocity, and function in diabetic neuropathic patients.

Keywords: Diabetic Peripheral Neuropathy, Intermittent Pneumatic Compression, Nerve Conduction Velocity, Neuropathic pain scale. Herniation

Reaching Kinematics Improvement After Using Modified Constrained Induced Movement Therapy in Hemiparetic Patients

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Abstract

Background and Purpose: Unsuccessful use of the affected UL in stroke patients may cause the "learned nonuse phenomenon," in which patients habitually rely on their unaffected upper limb to accomplish daily activities. Constraint-induced movement therapy overcomes learned nonuse through the restraining of the unaffected limb over an extended period of time in combination with intensive training of the affected UL specific tasks. This study examined the effect of modified constraint-induced movement therapy on reaching kinematics in stroke patients.

Patients and Methods: Thirty male ischemic stroke patients were included in this study, and their ages ranged between 45 and 55 years. Patients were divided randomly into two equal groups. The first group (Group I) received modified constraint-induced movement therapy plus a selected physical therapy program. The second group (Group II) received the selected physical therapy program only. Reaching movement kinematics of the affected upper limb was assessed before and after treatment using two-dimensional analysis.

Results: Within each group, the first group showed a significant decrease in compensatory trunk displacement and a decrease in time to reach to grasp after treatment ($p=<0.0001$ and $p=0.0002$, respectively). The second group showed a significant increase in compensatory trunk displacement ($p=0.0004$), while there was no significant difference in time of reach to grasp after treatment ($p=0.40$). Also, there was a significant difference in trunk displacement and time of reach to grasp between both groups post-treatment. ($p=0.0001$ and $p=0.0004$, respectively).

Conclusion: Modified constrained induced movement therapy increases movement control and improves reaching movement kinematics in the affected limb of stroke patients. **Key Words:** Stroke, Constrained induced movement therapy, Compensatory, Trunk displacement , Reaching kinematics.

Ergonomic Influence of Workplace Design and Body Posture on Musculoskeletal Pain for Workers with Different Working Experiences in The Egyptian Company for Exporting Agricultural Crops

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Abstract

Background: Work-related musculoskeletal disorders (WMSDs) affect various body tissues such as muscles and tendons, causing pain and stiffness. They affect millions of workers worldwide, causing significant health problems. Workplace ergonomics can assess and therefore treat the risk factors contributing to musculoskeletal pain among workers.

Objective: To determine the prevalence of WMSDs-related pain and assess the assOciated ergonomic risk factors among company workers.

Method: This cross-sectional study was conducted at the Egyptian Company for Exporting Agricultural Crops and assessed 10 workers (7 male and 3 female) aged between 20 and 26 years for the presence of WMSD-related pain and the associated ergonomic risk factors using a questionnaire and Occupational Repetitive Action (OCRA), assessment of repetitive tasks (ART), and manual handling assessment charts (MAC) assessment tools.

Results: Low back pain, knee pain, shoulder pain, and neck discomfort were prevalent among workers, affecting 50%, 20%, 20%, and 10%, respectively. Those workers had medium to high risk for WMSDs. There were several ergonomic risk factors among those workers, such as poor posture and repetitive movements.

Conclusion: Ergonomic assessments and treatments are important for company workers to decrease WMSDs-related pain. Organizations can do this by addressing the identified ergonomic risk factors to improve health and productivity. Authors provided some recommendations to achieve this.

Keywords: Work-related musculoskeletal disorders, occupational health, repetitive tasks, ergonomics, poor posture

Advancing Stroke Rehabilitation: A Systematic Review on the Impact of Brain-Computer Interface (BCI) on Lower Limb Function

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Abstract

Background: Stroke is one of the most prevalent neurological disorders and a leading cause of disability worldwide. It often results in motor impairments, particularly in the lower limbs, reducing patients' functional independence. Brain-Computer Interfaces (BCIs) offer a promising approach to lower limb rehabilitation by translating brain signals into movement commands, thereby promoting neuroplasticity and enhancing motor recovery.

Objectives: This paper aims to provide a comprehensive systematic review of the latest brain-computer interface (BCI) technologies for lower limb neurorehabilitation in post-stroke therapy.

Methods: A systematic search was conducted in Ovid, Cochrane Library, Scopus, Web of Science, and PubMed up to November 2024. Only RCTs evaluating BCI interventions for lower limb rehabilitation were included. Data extraction focused on patient characteristics, intervention types, control conditions, and outcome measures. Study quality was assessed using the PEDro scale.

Results: Four RCTs (n=221) examined BCI-controlled electrical stimulation, robotic-assisted therapy, and AI-driven rehabilitation. Outcome measures included the Fugl-Meyer Assessment (FMA-LE), Berg Balance Scale (BBS), and Modified Barthel Index (MBI). BCI interventions significantly improved motor function, balance, and daily activities, with some studies reporting increased serum BDNF levels, suggesting neuroplasticity benefits. AI-driven approaches showed superior spasticity reduction and functional gains. However, methodological differences limit direct comparisons.

Conclusion: BCI-based rehabilitation enhances lower limb function in stroke patients, showing potential benefits over conventional therapies. However, with only four studies included, findings should be interpreted with caution. Further high-quality RCTs are needed to confirm the results and optimize rehabilitation protocols.

Keywords: Brain-Computer Interface (BCI), Stroke Rehabilitation, Neuroplasticity, Motor Recovery, lower limb, Intelligent Training Systems.

Delayed Onset Muscle Soreness (Doms) Identification, Cause and Treatment in Physical Therapy Point of View

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Abstract

Background: Delayed onset muscle soreness (DOMS), or muscle fever, is a pain that comes to athletes 24 hours after performing an intense or new exercise on the body or performing a type of exercise called eccentric exercises like running, swimming, climbing, or stretching. In fact, DOMS is one of the most controversial topics in our field in terms of treatment methods and the anatomical cause within the body that causes pain. Theoretical causes include accumulation of lactic acid on the muscle due to a decrease in the breathing rate or exercise that exceeds the requirements; abnormal, sustained muscle contractions that occur after exercise; or muscle fiber damage.

Methods: Three databases, including PubMed, Embase, and Web of Science, were searched using the following terms: ("recovery" or "active recovery" or "cooling" or "massage" or "compression garment" or "electrostimulation" or "stretching" or "immersion" or "cryotherapy") and ("DOMS" or "perceived fatigue" or "CK" or "CRP" or "IL-6") and ("after exercise" or "post-exercise") for randomized controlled trials, crossover trials, and repeated measure studies. Overall, more than 20 studies were included.

Results: The most powerful techniques for reducing inflammation were massage and cold exposure.

Conclusion: Massage seems to be the most effective method for reducing DOMS and perceived fatigue. Perceived fatigue can be effectively managed using compression techniques.

Keywords: DOMS; fatigue; inflammation; intervention efficiency; meta-analysis; muscle damage; recovery.

Role of physical Activity in Improving Mental Well-being and Reducing Academic Burnout

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Abstract

Physical activity affects physical health and mental well-being. Physically inactive individuals have been reported to have higher rates of morbidity and healthcare expenditures. Commonly, exercise therapy is recommended to combat these challenges and preserve mental wellness. Physical activity is positively associated with certain mental health traits. Physical activity was shown to help with sleep and improve various psychiatric disorders. Exercise in general is associated with a better mood and improved quality of life.

Physical exercise and yoga may help in the management of cravings for substances, especially in people who may not have access to other forms of therapy. Most studies focus on the role of physical activity in improving physical health while neglecting its impact on mental well-being and reducing anxiety and stress among students. This research aims to highlight the role of physical activity in improving mental health and alleviating stress among students. Using an online survey with university students (18-25 years) to assess the relationship between physical activity and mental well-being.

Data were statistically analyzed using descriptive and inferential tests, ensuring participant confidentiality and adherence to ethical standards. The data collected was analyzed using R and Microsoft Excel. Findings suggest that increased physical activity is associated with improved mental well-being among university students aged 18-25, with higher levels of activity linked to better stress management, mood, and overall mental health.

Keywords: anxiety, depression, morbidity, mental health, physical activity

Nutrition as a Holistic Physical Therapy

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Abstract

The integration of nutrition as a holistic approach to physical therapy has gained attention for its potential to enhance rehabilitation outcomes and overall well-being. there is a gab in thus study which is: most studies focus on physical therapy alone, neglecting how personalized nutrition may enhance recovery, improve muscle strength, and reduce pain.

This highlights the need for a holistic approach that integrates both therapies to optimize rehabilitation outcomes. This study aims to explore the role of nutritional interventions in conjunction with physical therapy in the management of musculoskeletal injuries and chronic conditions. This study examines how personalized nutrition (focusing on proteins, vitamins, and minerals) complements physical therapy in rehabilitating musculoskeletal injuries and chronic conditions. Through a randomized controlled trial, patients will receive either both therapies or physical therapy alone.

The survey results indicate that daily habits significantly impact nutrition and weight, with factors such as sleep patterns, meal frequency, and physical activity playing key roles. While many respondents struggle with maintaining a healthy diet due to cravings, lack of time, and financial constraints, a majority express awareness of the importance of balanced nutrition and physical activity.

Keywords: Daily Habits, Weight Management, Physical Activity, Meal Frequency, Fast Food Consumption.

Effect of Intermittent Pneumatic Compression on Patients with Diabetic Neuropathy

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Abstract

Background: The most prevalent microvascular consequence of diabetes is diabetic polyneuropathy (DPN), which affects over 50% of individuals with type 2 diabetes. It is a prevalent complaint that contributes to morbidity. It has been demonstrated that intermittent pneumatic compression improves this impairment. despite the fact that there is currently insufficient research on this topic.

Purpose: to study the impact of intermittent pneumatic compression on nerve conduction velocity, pain, and quality of life in patients with diabetic polyneuropathy.

Methods: 40 diabetic neuropathy patients, both male and female, between the ages of 50 and 65, were split into two equal groups at random (Study and Control). Both groups received a traditional program of physical therapy. Furthermore, intermittent pneumatic compression was administered to the study group. For four weeks, the 45–60-minute treatment sessions were held three times a week. Prior to and following treatment, the Nerve Conduction Velocity (NCV), Neuropathic Pain Scale (NPS), Pain Disability Questionnaire (PDQ), and Short Form 36 Questionnaire were used to measure amplitude and velocity, pain degree, disability and function degree, and quality of life in the same group and between the two groups.

Results: There were statistically significant increase in the nerve conduction amplitude and velocity after treatment in both groups. this improvement was more statistically significant in the group of IPC.

Conclusion: Intermittent pneumatic compression adds a valuable effect to the conventional physiotherapy program in improving amplitude, velocity and function in diabetic neuropathic patients.

Keywords: Diabetic Peripheral Neuropathy (DPN), Intermittent Pneumatic Compression (IPC), Nerve Conduction Velocity (NCV) , Neuropathic pain scale. herniation and low back pain (LBP).

Effect of dry Needling versus neural Mobilization Technique on Velocity and Latency of Median Nerve in Patients with Carpal Tunnel Syndrome

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Abstract

Background: Effects of dry needle (DN) and neural mobilization (NM) have been reported in management of carpal tunnel syndrome (CTS). However, no research has been conducted to compare the between DN and NM on reducing CTS symptoms and median nerve conduction studies in CTS**.**

Methods: Thirty patients with CTS were randomized into DN group (n=15) and NM group (n=15). The treatment continued for 4 weeks with a total of 3 sessions a week. Outcome measures were visual analogue Scale during activity (VAS) , 6-item CTS symptoms scale, conduction velocity, amplitude, and latency of median nerve. Data was measured at baseline and post treatment. Mixed MANOVA (2 groups × 2 times) was used to compare within- and between-group differences. Bonferroni post hoc test was used to detect any significant differences in the main effect for group, time, or group time interaction**.**

Results: There was no significant difference between groups pre treatment ($p > 0.05$). Comparison between groups post treatment revealed non significant difference in VAS, CTS-6, sensory amplitude and VLC, and motor latency and VLC. There was a significant decrease sensory latency of group A compared with that of group B post treatment ($p < 0.5$), while There was a significant increase motor amplitude of group B compared with that of group A post treatment ($p < 0.5$) **.**

Conclusion: Dry needling is effective in improving latency of sensory median nerve while neural mobilization is more effective in improving amplitude of motor median nerve. Although both methods are effective effective in improving signs and symptoms of CTS

Keywords: Dry needling, Median nerve conduction, Neural mobilization, neurodynamic, Carpal tunnel syndrome

Technology-Enhanced Laser Cueing Device for Shoes in Mitigating Freezing of Gait in Parkinson's Disease: A Conceptual Framework

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Abstract

Background: Freezing of Gait (FoG) is a debilitating motor symptom of individuals with Parkinson's Disease (PD), leading to sudden and temporary immobility. This greatly hinders mobility and raises the risk of dangerous falls. Although PD itself is not directly fatal, the consequences of FoG episodes, such as severe injuries from falls, present a major risk to patient safety and overall quality of life. Even with progress in assistive technologies, existing interventions often function independently, lacking integrated solutions or real-time support for patients and caregivers, which creates a significant gap in effective management.

Purpose: This study proposes a conceptual framework for a wearable visual laser cueing device that can be worn on shoes to address FoG in Parkinson's Disease.

Methods: The framework includes a laser cueing system supposed to aid patients to move in steady, regular steps. It also incorporates a fall detection system and a mobile app for real-time monitoring and caregiver support. Additionally, it suggests using machine learning models to analyze foot movement patterns during FoG episodes, which could enhance fall detection accuracy. The design is based on existing literature and technological feasibility analyses.

Results: It is expected to enhance mobility, reduce the number of FoG episodes, and detect falls promptly to aid patients. While theoretical, it lays the foundation for future prototype development and testing.

Conclusion: The framework presents a novel approach to managing FoG. Future work will involve prototyping, testing, and refining the system for real-world application.

Keywords: Freezing of Gait, Parkinson's Disease, Wearable Shoes, Laser Cueing System, Fall detection, Assistive Technology

Virtual Reality Gaming for Rehabilitation of Patients with Urinary Incontinence: A Systematic review and Meta-analysis

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Abstract

Background: Urinary Incontinence (UI) is a global health issue that mainly affects the female population. Different approaches have been sought for the UI management including Pelvic floor muscle training (PFMT) using Virtual Reality (VR) gaming.

Objective: To evaluate the effectiveness of VR gaming for rehabilitation of pelvic floor muscles (PFM) and improving urinary symptoms in patients with UI.

Method: We've included studies that contain any type of VR in all geographic locations and settings with no restrictions on the date of publication, age, or gender. Our exclusion criteria include reviews, case series, case reports, unextractable data, unavailable full text, abstract only articles, and studies don't show the effects of VR as a treatment for UI. A pre-specified search term was used and modified according to the requirements of each of the following databases: PubMed, Web of Science, Scopus, Cochrane, Google scholar, and ScienceDirect. For risk of bias assessment, two assessment tools have been used: ROB 2.0 for RCTs and NIH for single arm studies.

Results: Of 915 papers identified from 6 databases, 341 papers were assigned for screening after removing duplicates, 11 papers were eligible for full text screening, and 4 papers were finally included. The qualitative analysis of the results identifies six outcomes grouped into three primary categories: PFM, urinary symptoms, and quality of life. Only urinary loss outcome was eligible for meta-analysis. The net effect between Game therapy þ PFMT and PFMT reached MD = −5.49, 95% CI [−12.36:1.38] (heterogeneity; $I2 = 95\%$, $p < 0.01$).

Conclusion: Our research underscores the potential of VR gaming as a valuable adjunctive therapy for pelvic floor muscle rehabilitation in patients with UI. However, further studies are needed.

Keywords: Gaming, pelvic floor muscle training, urinary incontinence, urinary leakage, virtual reality.

Physiotherapeutic Protocol and ZnO Nanoparticles: A Combined Novel Treatment Program against Bacterial Pyomyositis

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Abstract

Background: Myositis tropicans or pyomyositis is a muscle inflammation resulting from a bacterial infection of skeletal muscle (commonly caused by Staphylococcus aureus) that usually leads to hematogenous muscle seeding.

Objective: To estimate the role of ZnO-NPs and a physiotherapeutic program in the management of induced biceps femoris atrophy in rats through histological, biochemical, and radiological examinations at different time intervals.

Methods: At the beginning, several bacterial strains were evaluated through a proteolytic enzyme activity assay and the highest activity was recorded with the Staphylococcus aureus strain. ZnO-NPs were synthesized with the arc discharge method with an average size of 19.4 nm. The antibacterial activity of ZnO-NPs was investigated and it was revealed that the prepared ZnO-NPs showed a minimum inhibitory concentration of 8 µg/mL against the tested bacterium. The cytotoxicity of the prepared ZnO-NPs was tested in C2C12 myoblast cells, and it was elaborated that CC50 was 344.16 µg/mL. Biceps femoris pyomyositis was induced with a potent strain (Staphylococcus aureus); then, a physiotherapeutic program combined with the prepared ZnO-NPs treatment protocol was applied and evaluated.

Results: The combined program claimed antibacterial properties, preventing muscle atrophy, and resulted in the most comparable value of muscle mass.

Keywords: pyomyositis; infected rat model; physiotherapeutic program; zinc oxide nanoparticles

The Effect of Therapeutic Exercises on Pain, Disability and Quality of Life in Treatment of Sacroiliac Joint Dysfunction: Systematic Review

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Abstract

Introduction: Low back pain (LBP) represents a significant health concern that adversely affects both quality of life and healthcare expenditures. A frequently overlooked contributor to LBP is sacroiliac joint dysfunction (SIJD), which often arises from irregular movement patterns and misalignment of the joint .

Purpose: to determine the effect of therapeutic exercises on pain and disability in patients with SIJD.

Methods: Databases, including Scopus, Web of Science, PubMed, and Cochrane, were searched for relevant data that matched inclusion criteria. The Cochrane Risk of Bias Assessment Tool (ROB2) was used for quality assessment.

Results: Eight randomized control trials met inclusion criteria, of which five studies evaluated the effect of therapeutic exercises compared to manual therapy as Mulligan and Maitland mobilization; two studies compared the effect of exercises with muscle energy techniques. While one study demonstrated the effect of motor control exercises and balance exercises in the treatment of sacroiliac joint dysfunction.

Conclusion: Therapeutic exercises, especially stabilization or motor control exercises, are effective in the treatment of sacroiliac joint dysfunction in terms of pain, disability, and quality of life, while combining exercises with manual therapy, such as mobilization and muscle energy techniques, showed better improvements than exercises.

Keywords: Sacroiliac joint dysfunction, therapeutic exercises, physiotherapy.

The Effect of Laser Therapy Versus Electrical Stimulation on Pain and Facial Function in Treatment of Bell's Palsy: Systematic Review

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Abstract

Introduction: Bell's palsy is characterized by acute paralysis of the facial muscles due to inflammation of the seventh cranial nerve at the stylomastoid foramen. The paralysis causes a loss of contractility in all muscles on the affected side. Muscle weakness can interfere with speech, eating, and drinking, causing food to accumulate in the cheek and saliva to drip from the mouth.

Purpose: To evaluate the effect of laser versus electrical stimulation on pain and facial function in the treatment of Bell's palsy.

Methods: Randomized control trials that assessed the effect of laser compared to electrical stimulation on male and/or female patients more than 18 years of age who were diagnosed with acute unilateral facial palsy were included. We searched the following electronic bibliographic databases: PubMed, Scopus, Web of Science, and Cochrane. Two reviewers independently read the selected studies in full, appraised them critically, and scored their methodological quality using the risk of bias 1 (ROB-1) scale.

Results: 707 Records are found in databases, and 486 records are screened and finally include 5 studies; 256 patients were enrolled in all randomized control trials. Four types of electrical stimulation were used.

Conclusion: Both low-level laser therapy (LLLT) and electrical stimulation (ES) show a significant effect in relieving pain and improving facial function in Bell's palsy patients, but LLLT is much more effective than ES.

Keywords: Bell's Palsy, Low-level Laser Therapy (LLLT), Electric stimulation (ES)

The efficacy of transcranial magnetic stimulation on overactive bladder: A systematic review

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Abstract

Background: Overactive bladder is a condition that totally affects the patient's lifestyle, as there is always a strong desire to urinate multiple times a day, even though the bladder isn't full. Stroke, spinal cord injury, and multiple sclerosis are key factors leading to overactive bladder. Theories such as neurogenic, myogenic, and afferent signaling explain this, with reduced inhibition of the micturition reflex post-cerebrovascular accident being a primary cause.

Objective: to synthesize the effects of Transcranial Magnetic Stimulation (TMS) on Overactive Bladder (OAB) symptoms

Methods: A systematic review was conducted using the Preferred Reporting Items for Systematic and Meta-Analyses (PRISMA) guidelines. The review was registered in PROSPERO (CRD42025633762). The systematic search for RCTs was performed in the databases PubMed, Scopus, Web of Science, and Cochrane Library, which were searched on December 15, 2024, for literature published up to that date. Articles were selected according to the inclusion and exclusion criteria regarding the effectiveness of TMS on patients with OAB.

Results: In total, 148 articles were identified, of which 4 randomized controlled trials were finally included in order to determine the inclusion criteria. Changes in urodynamic parameters (maximum cystometric capacity, maximum detrusor pressure, residual urine volume), overactive bladder symptom score (OABSS), the Incontinence Quality-of-Life Questionnaire (I-QOL), International Consultation on Incontinence Questionnaire-Urinary Incontinence Short Form (ICIQ-UI SF), and pelvic floor surface electromyography.

Conclusions: This systematic review shows that transcranial magnetic stimulation (TMS) demonstrates significant potential in improving symptoms of overactive bladder (OAB), as evidenced by changes in urodynamic parameters and patient-reported outcomes. However, further large-scale, high-quality studies are needed to confirm these findings and establish long-term efficacy.

Motivation and Balance Recovery in Hemiplegia Through Virtual Reality: A protocol for RCT

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Abstract

Background: Hemiplegia, commonly resulting from stroke, often leads to profound balance impairments, limiting mobility and increasing the risk of falls. While traditional balance rehabilitation methods have proven effective, they often lack the engagement and motivation needed to ensure patient adherence and optimal outcomes. Virtual Reality (VR) technology has recently emerged as an innovative solution, offering immersive and interactive environments that foster motivation and active participation.

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Purpose: This study evaluates the effectiveness of a six-week balance training program comparing VR-based rehabilitation to conventional methods. The primary focus is to explore how VR enhances patient motivation and its subsequent impact on balance performance.

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Methods: The VR group participates in tasks such as weight shifting, stepping exercises, and dual-task challenges within an immersive virtual environment designed to stimulate both physical and cognitive engagement. In contrast, the traditional group follows conventional balance exercises, including weight shifting, obstacle navigation, and balance training on unstable surfaces. Both groups undergo three supervised sessions per week, and progress is assessed using standardized tools such as the Berg Balance Scale (BBS), Timed Up and Go Test (TUG), and Functional Reach Test (FRT). It is hypothesized that the VR group will exhibit superior improvements in balance and higher levels of motivation due to the engaging and interactive nature of VR environments.

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Effectiveness of Exercise Therapy in managing muscle atrophy in chronic kidney disease: A Systematic Review of Randomized Control Trials

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Abstract

Background: Chronic Kidney Disease (CKD) leads to progressive muscle atrophy, impaired physical function, and reduced quality of life (QoL). Despite growing interest in exercise as a therapeutic intervention, its effectiveness remains uncertain in CKD populations. This systematic review evaluates the impact of exercise therapy on muscle mass, strength, functional capacity, and QoL in CKD patients.

Methods: A comprehensive search was conducted across PubMed, Scopus, Web of Science, and Cochrane Library up to November 2024. Only randomized controlled trials (RCTs) published in English were included. The Cochrane Risk of Bias 2 tool assessed study quality, and a structured narrative synthesis was performed.

Results: Nine RCTs met the inclusion criteria, covering pre-dialysis and dialysis populations. Resistance training showed the most significant gains in muscle hypertrophy and strength, particularly in quadriceps volume and knee extensor power. Combined training improved functional capacity (e.g., 6-minute walk test) and cardiovascular endurance more effectively than single-modality programs. QoL improvements were seen across physical, mental, and social domains. Intradialytic and home-based programs proved feasible and well-tolerated, with no major adverse events reported.

Conclusion: Exercise therapy, particularly resistance and combined training, is a safe and effective strategy for counteracting muscle atrophy and functional decline in CKD. Future research should focus on long-term outcomes, standardized protocols, and innovative delivery models such as tele-rehabilitation and wearable technology. Integrating structured exercise into CKD management could improve health outcomes and overall patient well-being.

Keywords: Chronic kidney disease, exercise therapy, muscle atrophy, functional capacity.

Effectiveness of Virtual Reality–Based Exercise Rehabilitation in Improving Functional Outcomes and Quality of Life for Cancer-Related Dysfunctions: A Systematic Review of Randomized Controlled Trials

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Abstract

Background: Cancer-related dysfunctions (CRDs), including fatigue, cognitive impairments, pain, and mobility deficits, significantly affect survivors' quality of life (QoL) and rehabilitation outcomes. Virtual reality-based exercise rehabilitation (VRER) has gained attention as an innovative approach that integrates digital engagement with physical therapy to enhance recovery. This systematic review evaluates the effectiveness of VRER in managing CRDs.

Methods: A comprehensive search was conducted in PubMed, Embase, Cochrane Library, Scopus, and Web of Science until 2024, following PRISMA guidelines. Randomized controlled trials (RCTs) published in English were included. Two independent reviewers screened studies, extracted data, and assessed methodological quality using the ROB 2.0 tool.

Results: Eleven RCTs involving diverse cancer populations met the inclusion criteria. VRER significantly improved physical function (range of motion, muscle strength, mobility; $p < 0.01$), cancer-related fatigue ($p < 0.001$), and cognitive function (working memory, executive function; $p < 0.05$). Pain reduction and psychological benefits, including decreased anxiety and depression, were also observed. However, adherence variability and differences in intervention protocols remain challenges.

Conclusion: VRER is an effective intervention for CRD management, providing improvements in physical and cognitive function while enhancing psychological well-being. Future research should focus on standardizing VR protocols, integrating AI-driven adaptive therapy, and assessing cost-effectiveness to support clinical implementation.

Keywords: Virtual reality, Exercise rehabilitation, Cancer-related dysfunctions, Quality of life

A Protocol for Randomized Controlled Trial Comparing Aquatic and Land-Based Therapy for Enhancing Ability Mand Strength in Paraplegic Patients

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Abstract

Background: Spinal cord injury (SCI) commonly results from trauma such as traffic accidents, falls, assaults, or sports injuries, with lesions caused by mechanisms like impact, compression, or tearing. The annual global incidence of SCI ranges from 250,000 to 500,000 cases, with varying regional rates. Despite its prevalence, there is limited global data on SCI, and treatment primarily focuses on managing symptoms, preserving residual function, and enhancing patients' independence.

Purpose: This study aims to evaluate the effectiveness of aquatic therapy compared to land-based physical therapy in improving mobility and strength among paraplegic patients. By identifying the more effective rehabilitation approach, this research seeks to enhance functional outcomes, independence, and quality of life for individuals with SCI.

Methods: 160 participants will be randomly assigned to either the Aquatic Therapy Group or the Land-Based Therapy Group, with both groups will participate in therapy sessions three times per week for 6 months. Each session will last 45 minutes, post-intervention assessments will be conducted at the end of the 6-months period, with optional follow-up evaluations at 6 and 12 months to determine long-term outcomes.

Keywords: Spinal cord injuries, post diagnostic support, Aquatic therapy, Land Base therapy, paraplegic.

Effectiveness of Short Foot Exercise and Orthotics Based Intervention in Chronic Low Back Pain Due to Flat Foot Deformity: A Randomised Study

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Abstract

Background: Flat foot deformity (FFD) is a biomechanical condition that alters lower limb alignment and lumbopelvic mechanics, contributing to chronic low back pain (CLBP).

Purpose: This randomized controlled study investigates the impact of short foot exercises (SFE), orthotics, and their combination on CLBP associated with FFD.

Methods: Participants will be divided into four groups: a control group receiving standard care, an orthotics group, a short foot exercises group, and a combination group undergoing both interventions. The intervention will be conducted over six weeks; assessments will focus on pain levels, functional disability, foot posture, pelvic alignment, and lumbar mobility.

Keywords: chronic low back pain, flat foot deformity, short foot exercises, orthotics.

Comparing Lower Body Positive Pressure Therapy and Standard Rehabilitation for Overweight Women with Knee Osteoarthritis

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Abstract

Background: Knee osteoarthritis (OA) is a common condition that significantly affects the quality of life in overweight individuals. Traditional rehabilitation techniques primarily focus on strengthening muscles and improving joint function. However, Lower Body Positive Pressure Therapy (LBPPT) is a novel approach that uses air pressure to reduce body weight during exercise, potentially decreasing joint load and offering a unique therapeutic option for individuals with knee OA.

Purpose: Comparing the effects of LBPPT with standard rehabilitation for pain, function, mobility, and quality of life in knee osteoarthritis overweight women.

Methods: This randomized controlled trial involved 67 overweight women diagnosed with knee osteoarthritis. Participants were randomly assigned to two groups: one group received LBPPT, and the other underwent standard rehabilitation. The primary outcomes assessed were pain intensity, functional performance, joint range of motion, and quality of life. Secondary outcomes included muscle strength and overall mobility, gait analysis, and weight reduction. Data were collected before treatment, immediately after the intervention, and at a 3-month follow-up.

Results: Both groups showed significant improvements in pain and functional mobility. However, the LBPPT group demonstrated superior results in pain reduction, with greater improvements in functional performance, muscle strength, range of motion, and weight loss compared to the standard rehabilitation group. The LBPPT group also exhibited a more significant improvement in quality-of-life measures.

Conclusion: LBPPT was found to be more effective than standard rehabilitation in improving pain, function, weight loss, and quality of life in overweight women with knee osteoarthritis. These results suggest that LBPPT could be a valuable therapeutic option for individuals with knee OA, offering an innovative approach to rehabilitation. Further research with larger sample sizes and long-term follow-up is needed to confirm these findings and explore the mechanisms of LBPPT in managing knee osteoarthritis.

Keywords: Quality of life, Air pressure therapy, Physical therapy, Exercise therapy, Offloading therapy, Chronic knee pain

Postural Habits and Their Impact on Musculoskeletal Health

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Abstract

Prolonged periods of sitting and standing, especially in faulty postures, are increasingly linked to musculoskeletal discomfort and disorders. Here, we investigated the impact of daily postural habits on musculoskeletal health among university students. Using a cross-sectional survey-based approach, data were collected through a structured questionnaire assessing sitting duration, ergonomic awareness, and musculoskeletal symptoms. We observed a correlation between poor posture, prolonged sitting, and lack of physical activity, leading to increased musculoskeletal disorders. In addition, results emphasize the need for better ergonomic education and preventive strategies to reduce posture-related musculoskeletal issues.

Keywords: Ergonomic awareness, university students, physical activity, sedentary behavior.