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10th INTERNATIONAL CONFERENCE OF PHYSIOTHERAPY - AIIMS 2024

(10th INCPT AIIMS 2024)

Organized by

PHYSIOTHERAPY UNIT, DEPARTMENT OF GERIATRIC MEDICINE,
NCA, AIIMS, NEW DELHI

Pre conference workshop 12 - 13 December

Main conference 14 - 15 December

Post Conference Workshop 16th December




SOUVENIR

ओएनजीसी
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ऊर्जा उद्योग का नया 'सुरक्षा बेंचमार्क'

ओएनजीसी एड्वांस्ड ट्रेनिंग इंस्टिट्यूट, गोवा

एक प्रमुख वैश्विक ऊर्जा कंपनी का सर्वोत्तम संपूर्ण सुरक्षा प्रशिक्षण संस्थान

ओएनजीसी एडवांस्ड ट्रेनिंग इंस्टिट्यूट की मुख्य विशेषताएँ

- उग्र सामुद्रिक दशाओं में हेलीकॉप्टर क्रैश सिमुलेशन्स के साथ अत्याधुनिक मरीन एविएशन और समुद्र में प्राण-रक्षा का कठोर प्रशिक्षण
- रियल-लाइफ़ ऑफशोर तथा ऑन-लैंड सेफ्टी ड्रिल्स
- इंडस्ट्रियल प्रोसेस सेफ्टी पर अत्याधुनिक मल्टिपल ट्रेनिंग सिमुलेटर्स (अनुपूरक)
- संपूर्ण ऊर्जा क्षेत्र को समाविष्ट करते हुए व्यापक प्रशिक्षण कार्यक्रम

जनता के लिए सेंटर के मुख्य फ़ायदे

- हेलीकॉप्टर दुर्घटना के कारण सी-सर्वाइवल दरों में उल्लेखनीय वृद्धि के फलस्वरूप अमूल्य जीवनों की सुरक्षा
- यह सी-सर्वाइवल सेंटर भारतीयों द्वारा निर्मित एक राष्ट्रीय संपत्ति है, जो कि स्वदेशी प्रशिक्षण क्षमताओं के विकास में आत्मनिर्भरता को बढ़ा रही है
- इस सुविधा का किसी भी प्रकार के समुद्रगामी कार्मिकों द्वारा व्यापक इस्तेमाल किया जा सकता है: चाहे वो ओएनजीसी, नौसेना, तटरक्षक, मरीन, वायु सेना से हों या फिर सिविल एविएशन से

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प्रतापराव जाधव
PRATAPRAO JADHAV

सत्यमेव जयते

आज़ादी का अमृत काल

राज्य मंत्री (स्वतंत्र प्रभार)
आयुष मंत्रालय
व
राज्य मंत्री
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
भारत सरकार

MINISTER OF STATE
(INDEPENDENT CHARGE) OF
MINISTRY OF AYUSH AND
MINISTER OF STATE OF
MINISTRY OF HEALTH & FAMILY WELFARE
GOVERNMENT OF INDIA

MESSAGE

I am delighted to address you at 10th International Conference of Physiotherapy, AIIMS 2024, Theme: "Digital Dynamics in Physiotherapy: Harnessing Technology for Progress – A Leap Forward or Step Backward". As technology transforms healthcare, we stand at a pivotal moment—where innovation can enhance patient care, improve accessibility, and optimize outcomes.

The application of sophisticated technology, telemedicine, artificial intelligence, and digital tools in physiotherapy practice has the potential to greatly improve patient outcomes, increase accessibility, and expedite the provision of service.

This conference offers an exciting opportunity to explore how we can balance the promise of technology with physiotherapy. Together, let us harness these advancements thoughtfully, ensuring they empower both practitioners and patients for a healthier tomorrow.

Thank you for your commitment to progress and care.

Wishing you all a productive and insightful conference.

(Prataprao Jadhav)

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Camp office : Khasdar Jansampark Karyalay, Jijamata Krida Sankul, Buldhana, Maharashtra-443001
Telefax : 07262-247777, E-mail : prataprao.jadhav@sansad.nic.in

MESSAGE

I am delighted to extend my warmest congratulations and best wishes to all the participants, organizers, and speakers at this prestigious 10th International Conference of Physiotherapy, AIIMS 2024, The theme of the conference, “Digital Dynamics in Physiotherapy: Harnessing Technology for Progress - A Leap Forward or Step Backward is both thought provoking and timely.

I commend the efforts of all those involved in advancing research, education, and the implementation of innovative techniques within the field. This conference is a testament to your commitment to continuous improvement and excellence in care

I encourage all attendees to take full advantage of this opportunity to learn, collaborate, and share insights that will shape the future of physiotherapy practice. Together, we can drive positive change, enhance patient outcomes, and create a healthier future for all.

Once again, I congratulate you on the success of this conference and look forward to the continued growth and impact of physiotherapy in our healthcare system.

Warm regards,

Yours Sincerely,

(RAMDAS ATHAWALE)

Shri Avinash Dhargave
Chief Physiotheraphist
National Centre for Ageing
Aiims, New Delhi

अखिल भारतीय आयुर्विज्ञान संस्थान
अन्सारी नगर, नई दिल्ली-११००२६ (भारत)
ALL INDIA INSTITUTE OF MEDICAL SCIENCES
ANSARI NAGAR, NEW DELHI - 110029 (INDIA)
Ph. 011-26594805/4800, Email: director@aiims.gov.in

दिनांक/Dated :10th December 2024

MESSAGE

It gives me immense pleasure to learn that the Physiotherapy Unit, Department of Geriatrics Medicine, AIIMS is organizing the 10th International Conference of Physiotherapy- AIIMS 2024 (10th INCPT AIIMS 2024 from 12th December to 16th December 2024.

The theme, "Digital Dynamics in Physiotherapy: Harnessing Technology for Progress - A Leap Forward or Step Backward ", invites us to critically examine the ways in which technology is shaping the landscape of physiotherapy.

In today's world, where digital technologies are rapidly transforming healthcare, it is imperative for clinicians, educators, and researchers to stay ahead of these advancements. This conference will offer a unique opportunity to delve into the integration of digital tools such as tele-rehabilitation, AI-driven diagnostics, and wearable technologies, all of which are poised to redefine the future of physiotherapy.

I hope that this conference will offer a unique platform to explore the vast potential of digital technologies in revolutionizing physiotherapy practices. As the healthcare landscape continues to evolve, understanding the role of technology in enhancing patient care, improving clinical outcomes, and optimizing rehabilitation strategies has never been more crucial.

I am sure that this event will host a distinguished gathering of national and international experts who will lead thought-provoking discussions, workshops, and presentations. This conference will undoubtedly serve as an important avenue for knowledge exchange, fostering global collaboration and inspiring innovation in the field of physiotherapy.

I extend my warm wishes for a grand success of the conference.

10/12/2024

(Prof. M. Srinivas)
Director

ALL INDIA INSTITUTE OF MEDICAL SCIENCES
DEPARTMENT OF GERIATRIC MEDICINE
ANSARI NAGAR, NEW DELHI – 110029

10.12.2024

MESSAGE

As we stand at the crossroads of tradition and innovation, the world of physiotherapy is embracing the winds of change. Digital advancements now hold the promise of revolutionizing the way we care for our patients, offering a future where technology empowers both practitioners and individuals on their healing journey. From telehealth platforms to AI-driven assessments, technology is paving the way for more personalized, accessible, and effective therapies.

Yet, as we leap forward, we must pause and reflect—do these innovations enhance the human connection that lies at the heart of physiotherapy, or do they risk diminishing it? Technology, while transformative, must always serve the patient's well-being and respect the compassionate touch that defines our profession.

Moreover, as we integrate these advancements, let us also recognize the value of aligning physiotherapy with other systems of medicine to provide a truly holistic approach. By incorporating insights and techniques from complementary and traditional practices, we can create a patient-centric model of care that addresses the diverse needs of individuals. This synergy between physiotherapy, digital innovation, and multidisciplinary collaboration ensures that care is not only effective but also personalized and comprehensive.

In harnessing the potential of these digital dynamics and integrating the strengths of diverse medical systems, let us take bold strides forward with a deep commitment to ensuring that every technological and multidisciplinary advancement is in harmony with the essence of care. Let us move forward with innovation and collaboration, always with a thoughtful perspective on their impact, ensuring that progress in physiotherapy benefits both practitioners and patients alike.

Dr. Naveet Wig
(Patron, 10th INCPT AIIMS 2024)
Professor & Head
Dept. of Geriatric Medicine
AIIMS, New Delhi - 110029

MESSAGE

Embracing technological innovations such as telemedicine, AI-driven diagnostics, wearable devices, and virtual physiotherapy has paved the way for more efficient, personalized, and accessible healthcare solutions. It is appropriate and thought-provoking to have it as the theme **"Digital Dynamics in Physiotherapy: Harnessing Technology for Progress – A Leap Forward or Step Backward"** at the 10th International Conference of Physiotherapy, AIIMS 2024

However, it also raises critical questions: Is this progress truly enhancing the quality of care, or are we moving too far away from the human touch that lies at the heart of physiotherapy?

This discourse invites us to explore the possibilities and challenges that come with this digital shift—striking a balance between innovation and the timeless values of empathy, trust, and direct patient-provider interaction. By carefully navigating this journey, we can ensure that technology serves to advance physiotherapy while upholding its core principles.

Let us continue to move forward, thoughtfully and conscientiously, leveraging technology to unlock new avenues of progress while never losing sight of the patient-centred care that defines the essence of physiotherapy.

Dr Praun Chatterjee
Co-Patron, 10th INCPT AIIMS 2024
Additional Professor
Additional Medical Superintendent
Department of Geriatric Medicine, National Centre of Ageing,
AIIMS, New Delhi

MESSAGE

The digital revolution has introduced transformative tools—telemedicine, AI-driven diagnostics, wearable devices, and virtual rehabilitation—that promise to reshape patient care, making it more personalized, accessible, and efficient. Yet, in this rapid embrace of innovation, we must pause and ask: Are we stepping forward into a future of progress, or are we risking a step back from the heart of what makes physiotherapy so profoundly human?

The theme **"Digital Dynamics in Physiotherapy: Harnessing Technology for Progress – A Leap Forward or Step Backward"** at the 10th International Conference of Physiotherapy, AIIMS 2024, is apt and intriguing.

In this journey, technology offers us a canvas upon which to paint the future of care, but it is essential that we hold fast to the soul of our profession—compassion, empathy, and the irreplaceable connection between therapist and patient. The challenge lies in harmonizing these advances with the core principles that have always guided our practice, ensuring that technology serves as an ally, not a replacement, for the deep human touch that is at the core of healing.

Let us move forward with both optimism and wisdom, harnessing the power of technology not just to enhance the precision of our treatments, but to elevate the very essence of care we provide. In this delicate balance, we will discover the true promise of progress—where innovation and humanity coexist, and where every step forward is a step toward a brighter, more compassionate future in physiotherapy.

Dr Avinash Chakrawarty
Co-Patron, 10th INCPT AIIMS 2024
Additional Professor
Department of Geriatric Medicine, National Centre of Ageing,
AIIMS, New Delhi

MESSAGE

It is with great joy and excitement that I extend a heartfelt welcome to all participants, speakers, and delegates to the 10th International Conference of Physiotherapy, AIIMS 2024, Theme : "Digital Dynamics in Physiotherapy: Harnessing Technology for Progress – A Leap Forward or Step Backward".

As we navigate through the exciting intersection of technology and healthcare, we find ourselves at a crucial juncture. The rapid evolution of digital tools has brought immense potential to reshape the landscape of physiotherapy, offering new avenues for improving patient outcomes, enhancing therapeutic techniques, and making healthcare more accessible. From tele-rehabilitation and AI-powered diagnostics to virtual reality treatments and patient monitoring systems, the future of physiotherapy is undoubtedly digital.

This conference provides a unique platform for dialogue and collaboration, where we can share insights, explore innovative solutions, and challenge conventional thinking. It is an opportunity for us to thoughtfully explore how technology can enhance our practice without compromising the warmth, empathy, and individual attention that our patients deserve.

As we embark on this exciting journey of learning and discovery, I am confident that the conversations we share here will inspire new ideas, foster deeper connections, and shape the future of physiotherapy in ways that are both forward-thinking and deeply rooted in care.

I extend my sincere gratitude to all the speakers, participants, and volunteers for their invaluable contributions. I hope this event leaves you with lasting memories, new knowledge, and a renewed passion for the limitless possibilities that lie ahead in our field.

With warm regards,

Avinash B. Dhargave
Organizing Chairperson
10th INCPT AIIMS 2024

Message

With immense pleasure and excitement, we welcome you to the 10th International Conference of Physiotherapy on **"Digital Dynamics in Physiotherapy: Harnessing Technology for Progress – A Step Forward or Leap Backward."**

The event is a celebration of knowledge, collaboration, and innovation, hosted under the auspices of physiotherapy unit, Department of Geriatric medicine, NCA, AIIMS, New Delhi This conference aims to bring together students, professionals, and enthusiasts from the field of physiotherapy to share insights, research, and experiences while fostering a spirit of learning and interaction.

This gathering brings together a vibrant community of physiotherapy professionals, innovators, and thought leaders, united by a shared commitment to explore the transformative role of technology in our field. As we stand at the intersection of tradition and innovation, this theme invites us to critically examine how digital advancements reshape our practices, from patient care to professional growth.

Throughout this conference, you will have the opportunity to engage in insightful discussions, participate in hands-on workshops, and hear from leading voices in both physiotherapy and digital technology. Together, we will explore pressing questions: Are we advancing incrementally or undergoing revolutionary change? Are these shifts universally beneficial, or do they present challenges that need careful navigation?

The conference encapsulates various cultural events and student programs providing students with a platform to showcase their skills in a variety of domains and to learn from the experiences and creativity of others. This souvenir serves as a token of appreciation for your participation and a reflection of the knowledge and inspiration that we hope this event will bring.

As the Organising Secretary, I am delighted to have you with us for this momentous occasion. Let us collaborate, learn, and innovate as we work together to shape the future of physiotherapy.

Thank you for being part of this journey!

Warm regards,

Ruchika Madan
Physiotherapist
Organising Secretary
10th INCPT AIIMS 2024

10th INCPT AIIMS 2024 SCIENTIFIC PROGRAMME JL AUDITORIUM 14TH DECENBER 2024 (SATURDAY)		
TIME	Topic	Name of the Resource person
MUSCULOSKELETAL INSIGHTS: BRIDGING KNOWLEDGE AND PRACTICE		
10:00 AM- 10:15 AM	Novel Biomechanical Insights into Shoulder Impingement syndrome	Dr Meena Makhija Associate Professor ISIC-IRS
10:15 AM- 10:30 AM	Understanding and Managing Geriatric Syndromes: A Comprehensive Approach for elderly care	Richa Goswami Physiotherapist, NCA, AIIMS
10:30AM- 10:45AM	Physical rehabilitation at the ICRC	Charu Sharma Physical Rehabilitation Project Manager ICRC, India
10;45AM- 11:00AM	Upper cervical dysfunction correction for vertigo, headaches, essential hypertension and autonomic dysfunctions	Dr Manish Arora Dean and professor SBSS University, Dehradun
11:00AM- 11:15AM	Shoulder Physiotherapy hacks	Dr Subhash Khatri Principal, Maharashtra Institute of Physiotherapy, Latur, Maharashtra
11:15AM- 11:30AM	Breaking Boundaries: Physiotherapist Strategies for Hemophilia -Related Mobility	Dr Reena Srivastava Physiotherapist AIIMS Patna
11:30PM-12:00PM KEYNOTE SPEECH (Dr ASHA CHITNIS , Certified NDTA Therapist Certified NDTA Instructor Mumbai ,Maharashtra) **CREATING A PATH TO INDEPENDENCE: MAXIMIZING FUNCTION IN PEDIATRIC REHABILITATION**		
MUSCULOSKELETAL INSIGHTS :TECHNOLOGY AND ADVANCES		
12:00PM- 12:15PM	Artificial Intelligence-Boon or Bane for Physiotherapy	Anu Bansal Assistant Professor Amity Institute of Health and Allied Sciences, Amity University
12:15PM- 12:30PM	Beyond the obvious less common causes of low back pain -	Dr Smita Gulati Former Asst. Prof. Anaesthesia and Pain Medicine, Rajiv Gandhi Superspeciality Hospital, Delhi Director, Trinity Pain Clinic
12:30PM- 12:45 PM	Myofascial Trigger Points: Evidence Based Physiotherapy Interventions for Pain Relief and Functional Restoration	Anand Singh HOD Associate Professor SOHAS G D Goenka University
12:45PM INAUGRATION		
1:30PM-2:00PM LUNCH BREAK		
BEYOND KEGELS:INNOVATIONS IN PELVIC FLOOR HEALTH		
2:00PM- 2:15PM	Role of Physiotherapy in PCOS &Osteoporosis	Poonam Mishra Senior Physiotherapist Deptt of Orthopaedics AIIMS,New Delhi
2:15 PM - 2:30PM	Pelvic Floor Muscle Stimulation in Complex Perineal Injuries Following Trauma: An Evidence Based Practice.	Dr Altaf Hussain Mir Physiotherapist JPNATC AIIMS New Delhi
2:30PM - 2:45PM	Ultrasound Guided PFMT	Sonia Kaundal Physiotherapist Department of Obstetrics and Gynaecology, AIIMS New DELHI

A MULTIDISCIPLINARY EXPLORATION		
2:45PM-3:00PM	Treatment of NAFLD with Diet ,Physical Activity and Exercise	Supriya Awesthi Dean School and Allied Health Sciences Noida International University
3:00PM-3:15PM	Advancements in Therapeutic Strategies for Obstructive Sleep Apnea and Restless Leg Syndrome :Enhancing Sleep Quality and Patient Outcomes	Dr Himanshu sharma, Associate Professor , Department of Neurophysiotherapy, Mahalaxmi College of Physiotherapy and Rehabilitation Centre Satara , Maharashtra
3:15pm-3:30pm KEY NOTE SPEECH **MODERN INTERVENTION TOOLS IN REHABILITATION** **DR PRAKASH SHARMA (MOT PhD)** **Principal &professor** **Mahatma Gandhi occupational College** **Mahatma Gandhi University of Medical Science &Technology** **Jaipur, Rajasthan**		
EXPLORING THE UNEXPLORED :DIVERSE PERSPECTIVES		
3:30PM-3: 45 PM	From India to Germany: Unlocking Career Opportunities for Physiotherapists with Meduniverse.app	Ram Prakash Founder, Meduniverse International Pvt Limited
3:45PM-4:00PM	Unfolding Telerehabilitation :New Future for Physiotherapy	Dr Ranbir Singh Sekhon General Secretary All Saints Physiotherapy College Ludhiana
4;00PM-4:15PM	Amputation -A New Management Approach	Nida Mir Research Scientist- II Division of Trauma Surgery and Critical Care
		JPNATC AIIMS New Delhi
4:15PM-4:30PM	Extracorporeal Shock Wave Therapy in Neurological Conditions: A Promising Therapeutic Option	Dr Reena Kumari HOD SBS Balawala Dehradun
4:30PM-4:45PM	Role of Professional University Teachers in Students Skill Enhancement	Dr Zaki Anwer Professor (MSK) School of Allied Medical Sciences, Lovely Professional University Punjab
4:45PM-5:00PM	Applications of Digital Signal Processing in Clinical Surface Electromyography	Prof Sanjeev Gupta Chairperson and Professor-Physiotherapy Director-Sports , Dy Dean Academic Affairs
5:00PM-5:15PM	Ancient to Recent Journey of Physiotherapy in India	Dr Anand Mishra PhD,MPT,MBA Registrar Sri Aurobindo University Indore
5:15PM-5:30PM J.B JOSHI ORATION AWARD- **Advancing Horizons: Exploring Emerging Trends and innovations in Manual Therapy** **Dr.Umasankar Mohanty,** **BPT, MPT(Manual Therapy), Ph.D., MIASP, MISEP, FAGE** **Founder President, Manual Therapy Foundation of India** **Managing Director, Vedanta Educational and Charitable Trust**		
5:30PM – 6:00PM PANEL DISCUSSION ETHICS IN PHYSIOTHERAPY:BALANCING PATIENT CARE,TECHNOLOGY AND PROFESSIONAL STANDARDS		
MODERATORS		**PANNELISTS –**

❖ **Dr V.P.Gupta** Ex-Chief Physiotherapist & Head, Physiotherapy unit, Deptt of CTVS- C T Centre, AIIMS, New Delhi; Additional charge- Center for Integrative Medicine and Research , AIIMS, New Delhi ❖ **Dr Sanjeev Gupta** Chairperson and Professor-Physiotherapy Director-Sports , Dy Dean Academic Affairs ❖ **Arushi Kaul** Superintendent Physiotherapist Department of Anaesthesiology ,Pain Medicine and Critical Care	❖ **Prof Dr E.Shanmugananth** Principal in school of Physiotherapy Sri Balaji Vidyapeeth University Pondicherry ❖ **Dr T . Kartikeyan** Associate Professor , Dept pf physiotherapy Gurugram university ,Haryana ❖ **Amit kumar** PhD, MPH Associate Professor, University of Utah, Salt Lake City ❖ **Dr Anand Mishra** PhD,MPT,MBA Registrar Sri Aurobindo University Indore ❖ **Dr Anne Thackeray** Assistant professor , Physical Therapy &Athletic Training The University of Utah, ❖ **Dr Stephan Richelli** University Master in Osteopathy Post Graduate in Joint Manipulative Physiotherapy ❖ **Dr Kristina kindblom** Ex Sr. Lecturer, Karolinska Institute, Solna Stockholm ❖ **Dr A.S Moorthy** Physiotherapist Dept of Burns & Plastic ❖ **Ajit Kumar** Physiotherapist Dept of Orthopaedics AIIMS,New Delhi ❖ **Manish Morya** Junior Physiotherapist Trauma Centre JPNATC AIIMS

6:00PM TEA BREAK FOLLOWED BYPHYSIO FIESTA (CULTURAL NIGHT)

10th INCPT AIIMS 2024 SCIENTIFIC PROGRAMME
CONFERENCE HALL 14th DECEMBER 2024 (SATURDAY)

TIME	Topic	Name of the Resource person
OPTIMISING MUSCULOSKELETAL FUNCTION: A PATH TO MOBILITY AND WELLNESS		
10AM:10:15AM	The simplified Cyriax way on Tennis Elbow	Dr R Arunmozhi Professor Sardar Bhagwan Singh University Dehradun Uttarakhand
10:15AM- 10:30AM	Advanced Workplace Ergonomics in Musculoskeletal conditions.	Dr Gaurav Srivastav Associate Professor University of Engineering and Management Jaipur
10:30AM- 10:45AM	Musculoskeletal Injuries among Medical Practioners Who Perform Endoscopy	Dr Rohit Rathore Assistant Professor Noida International University
10:45AM- 11:00AM	The Advent of Onco-Physiotherapy	Dr Dipti Kadu Scientific assistant Physiotherapy Department ,Mahamana Pandit Madan Mohan Malviya cancer Centre ,Sundar Bagiya, ,BHU, Varanasi, Uttar Pradesh
GERIATRIC WINDOW :NAVIGATING HEALTH IN LATER LIFE		
11AM-11:15AM	Cognition and Learning New Motor Skill Learning in Geriatrics	Dr Stuti Khanna Associate professor ISIC IRS, New Delhi
11:15AM- 11:30AM	Sarcopenic Obesity and Aerobic Exercise	Dr Archana Khanna Associate Professor, Department of Physiotherapy Sharda school of Allied Health Sciences Sharda University, Greater Noida

3:15PM-3:30PM	Advancement of Cutting-Edge Robotic Technology in Physiotherapy and Rehabilitation in India	Dr Mukul Kumar Sain ,PT Application Manager (Neuro rehabilitation) J-VPD India Pvt Ltd
3:30PM-3:45PM	Neuro-computation of Brain computer Interface in Neurorehabilitation and Application in outer space.	Rishabh Pathak Research Assistant Neuro Scientist School of Computational and Integrative Sciences, JNU ,New Delhi
3:45PM-4:00PM	Bridging the Gap :Tele-Rehabilitation solutions for expanding Physiotherapy in Remote Areas	Dr Avinash Kumar Bharti Assistant Professor Department of physiotherapy IGIMS ,Patna
4:00PM-4:15PM	Holistic Approaches to Physiotherapy: combining Mind and Body for Optimal Recovery	Dr Sapna Malla Ph.D Scholar University of Engineering and Management Jaipur
4:15PM-4:30PM	Role of Robotic Technology in Inducing Neuroplasticity	Preeti Chaudhary Physiotherapist NILD
4:30PM-5:30PM	**SYMPOSIUM** **Prof Dr E.Shanmugananth** **Principal in school of Physiotherapy** **Sri Balaji Vidyapeeth University** **Pondicherry** **INTELLECTUAL PROPERTY RIGHTS AND DESIGN THINKING**	
6:00PM TEA BREAK FOLLOWED BYPHYSIO FIESTA(CULTURAL NIGHT)		
11:30AM- 11:45PM	Enhancing Elderly care with Digital Dynamics in Physiotherapy	Dr Charu Chhabra Assistant Professor Department Of Physiotherapy Jamia Hamdard University New Delhi
11:45PM- 12:00PM	Technology in Geriatric Rehabilitation	Dr Rajiv Limbasiya PrincipalSarvajanik College of Physiotherapy Surat,Gujarat
MOVE TO AUDITORIUM FOR INAUGRATION FOLLOWED BY LUNCH		
INSIGHTS THROUGH THE NEUROLOGICAL WINDOW:BRIDGING SCIENCE AND PATIENT CARE		
2:00 PM -2:15PM	Ending darkness of dependency of stroke patients by vasa concept	Dr Dhwanit .S. Shah Senior Lecturer Government physiotherapy college, New Civil Hospital Surat ,Gujarat
2:15PM-2:30PM	Exploring the Frontier: Virtual Reality's Impact on Cognitive Enhancement and Rehabilitation	Zubina Khan Research Fellow Department of Physiotherapy Gurugram University
ADVANCING FRONTIERS :THE POWER OF TECHNOLOGY		
2:30PM -2:45PM	Qualitative and Quantitative Analysis of Sit to Stand Activity in Stroke	Isha Tajane, Associate Professor K J Somaiya College Of Physiotherapy, Mumbai
2:45PM-3:00PM-	Transcranial Direct Current Stimulation in Spinal Cord Injury Rehabilitation	Megha Nijhawan Associate Professor ISIC -IRS
3:00PM-3:15PM	Tech Advancements in Neuro-rehabilitation	Dr. Jaishree Rai HOD , IHIF Noida Rehabilitation Centre

10th INCPT AIIMS 2024 SCIENTIFIC PROGRAMME
JL AUDITORIUM 15th DECEMBER 2024 (SUNDAY)

Time	TOPIC	Name of the Resource Person
	INSIGHTS TROUGH THE MUSCULOSKELETAL WINDOW:FROM STRUTURE TO SOLUTION	
9:00AM-9:15AM	Introduction on IASTM	Dr. Nishant Gemini Visceral and Musculoskeletal Manipulation Therapist
9:15AM-9:30AM	Ergonomical Low Back Pain	Dr. S. Purna Chandra Shekhar Principal & Head PDS Institute of Physiotherapy Hyderabad, India
9:30AM- 9:50AM	**BABAN MOHANKAR ORATION AWARD** **PROCESS EVALUATION IN RESEARCH :RATIONAL AND IMPLEMENTATION** Dr Rinkle Malani Prof & Director MGM School of Physiotherapy Aurangabad, Maharashtra	
9:50AM-10:05AM	Exploring Dilemma of TMJ Dysfunction	Dr Himanshu Mathur Associate Professor at Dept of Physiotherapy, Jaipur National University, Director and Chief Educator at Jaipur Rehab physiotherapy Clinic and Joint Rehab Online Education in Physiotherapy
10:05AM-10:20AM	Fascial Diagnosis through an App. How can the Fascial Quadrants System be brought to the Digital World?	Dr Stefan Richelli Master in Osteopathy Post Graduate in Joint Manipulative Physiotherapy Spain
10:20AM-10:35AM	Bowen Therapy	Dr Deepak Raghav Principal School of Physiotherapy Santosh Medical College Ghaziabad
10:35AM-10:50AM	Blood Flow Restriction Training : Beyond Musculoskeletal Application	Durga Prathap Ganesan MPT CMP CDNP MIAP Consultant Physiotherapist Phagwara Punjab
	10:50AM-11:05AM KEY NOTE SPEECH REVOLUTIONIZING PHYSIOTHERAPY THROUGH PATIENT CENTRIC DIGITAL INNOVATIONS: HARNESSING VIRTUAL REALITY AND AI FOR OPTIMIZING REHABILITATION (DR NUPUR HAJELA CALIFORNIA STATE UNIVERSITY, (USA)	
	SHAPING TOMMOROW:BREAKTHROUGH IN TECHNOLOGY	
11:05AM-11:20AM	Motor Relearning and Robotic Physiotherapy	Dr Seema Grover HOD Physiotherapy and Rehabilitation Apollo Hospital Indraprastha New Delhi
11:20AM-11:35AM	Technology and Simulation in Physiotherapy	Dr. Lajwanti Lalwani Associate Professor Dept of Cardiovascular and Respiratory Physiotherapy, Ravi Nair Physiotherapy College Datta Meghe Institute of Higher Education and Research, Sawangi, Wardha
11:35AM-11:50AM	Stabilometry -Novel Way to assess and Rehabilitation of Balance	Dr Sandeep Kumar MS ENT
11:50AM-12:05PM	Navigating Trauma :The Essential contribution of physiotherapy	Dr Amarjot Singh Gill Associate Professor College of Physiotherapy Christian Medical College Hospital Ludhiana Punjab
12:05PM-12:20PM	Headache and Digital Health	Dr Meghna Wadhwa Senior Assistant Professor SBS University Dehradun

12:20PM-12:35PM	Wellness at Work: Merging Design Mental Health	Dr Ambuj Mishra Unit Head & Senior Physiotherapist Medanta the Medicity Ambuj.mishra@medanta.org
12:35PM-12:50PM	Hydrotherapy for Sciatica : Advancement for Better Progression	Dr Varun Ahuja Chief Physiotherapist The Physios Gurugram
12:50PM-1:05PM	Cognitive-Motor Dual Task Training in Neurological Conditions	Dr Sumit Asthana Assistant Dean and Head Faculty of Allied Health Sciences Era University, Lucknow
1:05PM-1;20PM	Inflammation to Regeneration: Electromagnetic Therapy in Respiratory care	Dr Ghufran Jaleel Assistant Professor Paramedical College Muslim University Aligargh Aligarh
1:30:PM -2:00PM LUNCH		
THE FUTURE OF CARDIO-PULMONARY HEALTHCARE: CHALLENGES AND OPPORTUNITIES		
2:15 PM -2:30PM	Respiratory Concerns in Neuromuscular Diseases :Physiotherapy Perspective	Vandana Dua Physiotherapist Deparment of Neurology AIIMS New Delhi
2:30PM -2:45PM	Addressing the Challenges in Physical Therapy Care in Burns ICU	Misha Ahir Physiotherapist Burns , Plastic and Reconstructive Surgery AIIMS,New Delhi
2:45PM-3:00PM		
KEY NOTE SPEECH 1 INTEGRATING LOW BACK PAIN WITH PERSON CENTERED CARE TO ENHANCE PATIENT EMPOWERMENT Dr ANNE THACKERAY Assistant Professor Physical therapy & atheletic Training ,University of Utah		
3:00PM-3:15PM KEY NOTE SPEECH 2 IMPROVING REHABILITATION AND PATIENT– CENTERED OUTCOME USING ADMINISTRATIVE DATA AND EILECTRONIC HEALTH RECORDS AMIT KUMAR PhD, MPH Associate Professor University of Utah Salt Lake City		
EXPLORING THE UNEXPLORED :DIVERSE TOPICS AND PERSPECTIVES		
3:15PM-3:30PM	Hip Fractures in Elderly-An Overview	Nidhi Sharma JNPACT,Trauma Centre AIIMS, New Delhi
3:30PM-3:45PM	Need for Physiotherapist to Modify Healthy Lifestyle to Avoid Diseases	Ishwaree Deshmukh Director Asha Advance Multispeciality Physiotherapy Rehabilitation and Wellness Centre Mumbai
3:45PM-4:00PM	Assessment of Competencies in Physiotherapy and Nursing Professionals Managing Older Population in Sri Lanka '	Dr Esther Liyanage Faculty, Department of Physiotherapy Faculty of Allied Health Sciences, University of Peradeniya, Sri Lanka
4:00PM-4:15PM	Interlimb Spinal Facilitation – Implication in Neurological Rehabilitation	Dr. Manoj .K. Deshmukh MPT, Neurology, PhD Lecturer Government Physiotherapy College , Raipur, Govt of Chattisgarh
4:15PM-4:30PM	Role of Nitric Oxide in Tissue Healing	Vivek K MPT PhD Dean Incharge College of Physiotherapy SMVEC Puducherry
4:30PM-4:45PM	An overview on Exploring Physiotherapy as an Adjunctive Treatment Non-Pharmacological for Bulimia and Anorexia Nervosa	Kalpana Zutshi Associate Professor Dept of Physiotherapy Jamia Hamdarad

4:45PM-5:00PM	Physiotherapy: A Prestigious and Lucrative Medical Profession	Dr Pushpendra Yadhuvanshi Associate Prof and Head, School of Health and Allied Sciences,Career Point University Kota, Rajasthan
5:00PM-5:30PM	BRAIN FREEZE(QUIZ) -FINALS FOLLOWED BY VALIDECTORY	

10th INCPT AIIMS 2024 SCIENTIFIC PROGRAMME
CONFERENCE HALL 15TH DECEMBER 2024 (SUNDAY)

TIME	Topic	Name of the Resource person
TARGETING MUSCULOSKELETAL DISORDERS: FROM RESEARCH TO PRACTICE		
9:00AM-9:15AM	Exercise prescription for type 2 diabetes mellitus	Dr Shagun Agarwal Dean, School of Allied Health Sciences Galgotias University, Uttar Pradesh
9:15AM-9:30AM	Lower Cross Syndrome&Pilates	Dr Omair Khan Founder and President ARFA , Pune, Maharashtra
PEADIATRIC WINDOW:UNDERSTANDING CHILHOOD THROUGH CARE		
9:30AM- 9:45AM	Future Steps in the Prognosis of Ambulation in Pediatric Cerebral Palsy	Dr Pallavi Palaskar Associate Professor, Phd Scholar, Mahatma Gandhi Mission's School of Physiotherapy Aurangabad
9:45AM-10:00AM	Oro motor Stimulation in NICU	Anjani Kumar Sr Peadiatrics Physiotherapist Lotus Children Hospital Hyderabad
10:00AM-10:15AM	Innovative Approaches in Pediatric Musculoskeletal Rehabilitation	Dr Sandeep Chauhan, MPT(Neuro) Chief Physiotherapist NeuroMotion
10:15AM-10:30AM	Enhancing Accessibility: Adapting Indian Folk Games for Children with Cerebral Palsy	Mansoor Rahman A Assistant Professor MGM Institute of Physiotherapy Chh. Sambhajinagar Maharashtra rahman.paediatry@gmail.com
10:30AM-10:45AM	Early Intervention in Cerebral palsy :Evidence Based Practice	Dr Sonali Shrivastava, Associate Professor and HOD, Department of Physiotherapy Shri Shankarcharya Institute of Medical Sciences Durg Chattisgarh
NAVIGATING PAIN:TOOLS FOR RELIEF AND GROWTH		
10:45AM-11:00AM	Cultural Threads in the Fabric of Pain: Recognizing Diversity in Experience and Expression	Dr Vaibhavi Walimbe Assistant Professor, Phd Scholar, Mahatma Gandhi Mission's School of Physiotherapy Aurangabad
11:00AM-11:15AM	Rethinking Chronic Pain: The Transformative Power of the Biopsychosocial Model	Dr Tajuddin Chitapure Associate Professor, Phd Scholar, Mahatma Gandhi Mission's School of Physiotherapy Aurangabad
11:15AM-11:30AM	Making Sense of Painful Knee Osteoarthritis: A Patient-Centered Approach to Pain Management"	Dr Prashant Mukannwar Principal KLE College of Physiotherapy, Kotagondhunshi Hubballi Karnataka
TRANSFORMING WOMEN'S HEALTH :THROUGH RESEARCH AND INNOVATION		
11:30AM-11:45AM	Role of Pilates In Urinary Incontinence	Dr Mamta Biyani Certified Pilates Teacher Diploma in Orthopaedic and Manual Therapy (UK) HOD Department of Physiotherapy UAIMS,Maharashtra
11:45AM-12:00PM	Pelvic Health in Sports Medicine	Dr Inndu Kashyaapp Certified Pelvic Floor Physiotherapist Cofounder Health Specifics Academy & Clinics Delhi

12:00PM-12:15PM	Primary Dysmenorrhoea: A Limelight on Physiotherapeutic Approaches	Dr. Manisha Uttam MPT Neurology,PhD Director ,Golden Touch University (Advance Pain and Paralysis) Clinic Amritsar
AGEING GRACEFULLY:ADVANCING ELDERLY HEALTH		
12:15PM:12:30PM	Elderly Care: From Rehabilitation to Pre-rehabilitation	Dr Sampada. S Jahagirdar Assistant Professor Amar Jyoti Institute of Physiotherapy
12:30PM-12:45PM	Future of Elderly: An Indian Approach	Divya Physiotherapist Department of Orthopaedics AIIMS,New Delhi
RESEARCH AND REVIEWS		
12:45PM-1:00PM	Restoring Function after Spinal Cord Injury: A Review of Epidural Stimulations	Surbhi Kaura Phd Scholar, Galgotias University
1:00PM-1:15PM	Association Between Fear of Falling and Activity Restrictions in Community Dwelling Older Adults :A Review	Archana Kaushik PhD Scholar Senior OT, PDUNIPPD
1:30PM-2:00PM LUNCH		
INTERSECTION OF THOUGHTS -THE UNEXPECTED NEXUS		
2;00PM-2:15PM	New innovation of Treating Osteoarthritis knee FNMT	Dr Vinay Naveen Gulati MPT, PhD Scholar Physiotherapy and Pain Centre , Kota
2:15PM-2:30PM	The Transformative Power of AI in Physiotherapy and Rehabilitation	Dr Vishal Verma Assistant Professor SBS University Dehradun
2:30PM-2:45PM	Beyond the Barriers: Navigating the Landscape of Transgender Affirmative Care	Dr Badri Vishal MPT, MBA, PhD Scholar Assistant Professor Era University Luckhnow ,Uttar Pradesh
2:45PM-3:00PM	Evidenced based Physiotherapy	Dr Ujwal Yeole
		Professor and Principal, Smbt College of Physiotherapy Nashik
300PM-3:15PM	Role of Virtual Reality in Spinal Cord Injury Rehabilitation	Dr Shefali Walia Associate Professor Department of Physiotherapy Gurugram University shefaliwalia@gurugramuniversity.ac.in
3:15PM-4:40PM	INNOVATION PRESENTATION	
4:45 PM ONWARDS- MOVE TO JL AUDITORIUM FOR BRAIN FREEZE (QUIZ)-FINAL ROUNDS FOLLOWED BY VALIDECTORY		

Wish you a Merry Christmas

&

A Very Happy New Year

2025

From :

Organising Committee

INCPT AIIMS 2024,

EFFECT OF STRETCH-SHORTENING EXERCISE ON STRENGTH AND STABILITY AMONG RIFLE SHOOTERS.

Amruta Chauk, MPT Scholar

Introduction: Rifle shooting is a high-precision sport requiring stability, control, and fine motorcoordination, in events like the 50m Rifle 3 Positions and 10m Air Rifle. Success in shootingrelies heavily on posture stability and strength. Plyometric training, particularly plyometric push-ups, focuses on enhancing upper body strength and shoulder stability, which are essential for shot consistency and precision.

Objectives: This study aims to examine the impact of plyometric push-up training on stability, and strength among rifle shooters, comparing the effects across these performance metrics.

Methods: Using a prospective interventional design, 30 rifle shooters (conveniently sampled) participated in a six-week Plyometric Push-up training program, with three sessions weekly. Each session included warm-up and cool-down routines, followed by three sets of plyometric push-ups with 10 repetitions per set. Two assessments measured the outcomes: the Closed Kinetic Chain Upper Extremity Stability Test (stability) and the 1 RM Bench Press test (strength).

Results: Post-intervention results showed significant improvements across tested areas (stability and strength) with $p < 0.001$. Correlation analysis indicated that height, weight, and gender significantly affected strength and stability, while age and hand dominance had no significant effect.

Conclusion: Plyometric push-up training was effective in enhancing stability and strength in rifle shooters. Physical attributes, such as height, weight, and gender, were influential in strength and stability outcomes, whereas age and hand dominance did not affect performance.

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EFFECT OF STRENGTHENING OF GLUTEUS MAXIMUS AND GLUTEUS MEDIUSMUSCLE ON FOOT POSTURE (PRONATION) IN ATHLETES

RADHIKA SONI 1 , REEMA S.BHUVA 2 , Prof. (DR). MANEESH ARORA 3 ,
DR. MEGHNA WADHWA 4
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2 Student of MPT (sport rehabilitation), Sardar Bhagwan Singh University
3 Professor, Department of Physiotherapy, Sardar Bhagwan Singh University
4 Assistant Professor, Department of Physiotherapy, Sardar Bhagwan Singh University

Introduction: Foot pronation is a natural movement, necessary for the normal development ofgait, since it contributes to the absorption of the ground reaction forces. However, overpronationcauses the collapse of the medial longitudinal arch (MLA) of the foot. It is suggested thatmaintaining the integrity of the MLA can prevent numerous musculoskeletal injuries. Over-pronation of foot may be caused to due postural compensations as result of pelvic anteriorinnominate leading to medial rotation of hip and internal rotation of tibia. This research seeks toinvestigate the effect of proximal lower limb muscle strengthening on foot posture.

Purpose: The purpose of the present study is to examine the effects of Gluteus maximus and Gluteus medius strengthening exercises on pronated feet.

Subjects and Methods: The present study was conducted on 30 elite athletes (mean age 12÷5)without any history of surgery on the foot or ankle. Navicular drop test was used to assess foot pronation. Subjects were then randomly divided into two groups. Group “A” performed Gluteus maximus strengthening exercises, while Group “B” performed Gluteus medius strengthening exercises four times per week for three weeks. Pre and post - test data were recorded for both the groups.

Results: The analysis showed significance change in foot pronation with t-value is 1.70941 and p-value is 0.049219 ($p<.05$).

Conclusion: The study concluded that strengthening of proximal lower limb muscles (Gluteus maximus and Gluteus medius) has significant effect on foot pronation.

Keywords: Gluteus maximus, Gluteus medius, overpronation, foot posture index, muscle

PREVALENCE OF SCAPULAR DYSKINESIS IN BADMINTON PLAYERS IN VADODARA: A CROSS-SECTIONAL STUDY

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Dr. Neha Mukkamala (MPT, PhD), Professor, College of Physiotherapy, Sumandeep Vidyapeeth Deemed to be University, Vadodara. neha.cop@sumandeepvidyapeethdu.edu.in

BACKGROUND: Badminton is a solo sport demanding quick direction changes and quick arm motions. Due to its overhead nature, badminton players rely on unilateral upper extremity function which may cause alterations in the activation of the scapular stabilizing muscles, thus making them prone to scapular dyskinesis (SD).

OBJECTIVE: To find the prevalence of scapular dyskinesis in badminton players. METHOD: This was a cross-sectional study approved by Institutional Ethics Committee. Badminton players from various sports complexes in Vadodara were recruited. Males and females, above 18 years of age and playing badminton since atleast a year were included. Players with shoulder pain, cervical pain or shoulder surgery were excluded. SD was measured by Lateral Scapular Slide Test using vernier caliper in three positions: neutral position, 45º and 90º shoulder abduction. Measurements were from inferior angle of scapula to corresponding spinous process in all three positions.

ANALYSIS: Chi-square test was used to test association between SD and various variables. Level of significance was kept at $p<0.05$.

RESULT: 50 players (76% males, 24% females) had mean age 24.34±3.42 years and mean BMI 22.32±2.67 kg/m 2 . Average years of playing was 5.77±3.85 years. The prevalence of scapular dyskinesis in badminton players was 62%. The association between weakness and SD was (÷ 2 -15.407, $p<0.001$). The association between tightness and SD was (÷ 2 -19.369, $p<0.001$). The association between warm-up and SD was (÷ 2 -8.233, $p<0.05$).

CONCLUSION: The prevalence of SD in badminton players was 62%. SD was significantly associated with weakness of serratus anterior and lower trapezius, tightness of pectoralis major and lack of warm-up exercises.

KEYWORDS: SCAPULAR DYSKINESIS, SCAPULAR DYSFUNCTION, BADMINTON PLAYERS.

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COMBINED EFFECT OF THROWERS 10 PROGRAME AND BALLISTIC 6 PROGRAME ON THE PERFORMANCE OF ARCHERY AND SHOOTING PLAYERS : AN EXPERIMENTAL STUDY

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2 Student of MPT (sport rehabilitation), Sardar Bhagwan Singh University

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4 Assistant Professor, Department of Physiotherapy, Sardar Bhagwan Singh University

INTRODUCTION- Sport performance is influenced by both physical fitness and skill proficiency. Adaptive sports such as archery and parachuting enable athletes with disabilities to engage in competition with limited equipment, necessitating a combination of physical fitness and exact motor skills.

AIM OF THE STUDY- The purpose of this study was to study the combined effect of Throwers 10 and Ballistic 6 programme on the Performance of Archers and shooters.

METHODOLOGY- This experimental investigation recruited 30 individuals, 15 archers, and 15 shooters based on inclusion and exclusion criteria. Supervised training lasted three weeks. Pre- and post-intervention outcome assessments included the seated medicine ball throw test (SBMT), Y Balance test - UQ, and Standard Scoring exam. The individuals did 16 exercises for 45 minutes, three times a week.

RESULT-The results showed F crit > F value = 3.88. Considering the p value of 0.02, the findings are significant at p<.05 for the archery population. The shooting population had a 0.98 non-significant p value. The paired t-test results for the three groups show significant p values for archery but not shooting.

CONCLUSION-This study found mixed results, but working on strength and stability for three weeks will significantly reduce archery and shooting injuries and improve mental strength.

KEYWORDS-Shooting and Archery Sports, Throwers 10 and Ballistic 6 programme, Upper Quadrant Y balance test, Seated Medicine Ball Throw Test, Standard Scoring Test, Standard Scoring Test.

PREVALENCE AND PATTERN OF MUSCULOSKELETAL INJURIES AMONG THE UNDER-19 PLAYERS DURING THE 18 TH ALL INDIA S.BALWANT SINGH KAPUR MEMORIAL HOCKEY TOURNAMENT FOR MATA PARKASH KAUR CUP

*Ms Mahima Kapoor (MPT 1 st Year), D.A.V.I.P.T.R, Jalandhar
**Dr Soumik Saha (Assistant Professor, D.A.V.I.P.T.R, and Jalandhar)
***Dr Shilpy Jetly (Associate Professor, D.A.V.I.P.T.R, Jalandhar)

BACKGROUND: Field Hockey is a widely popular team sport globally, involving running, sprinting, and quick directional changes to manoeuvre a ball while competing against an opposing team. As a result of its fast-paced movements, hockey players may be at a risk for a range of musculoskeletal injuries. Based on the analysis of several literature review, it was determined that the lower limb was most commonly injured body part , amongst of them ankle sprains were the most prevalent accounting for 51% of injuries, followed by the head and face at 34%, the upper limb at 14% and the torso at 1%. Goalkeepers experienced the highest injury rate at 0.58 injuries per athlete-year, whereas mid-fielders, with a rate of 0.36 injuries per athlete- year. Lack of prevalence studies among Indian players for Injury Identification inspires us to explore the injury patterns, is similar measure as the other region wise measured by various researchers and identifies borderline risk factors associated with injury pattern. This present study will fill the gap of knowledge and will provide knowledgeable insights to physiotherapist and coaches and create evidence based protocol to prevent further injuries, create grass root level injury awareness and preventive strategies among hockey players.

AIM: This study aims to determine the overall prevalence rate of musculoskeletal injuries among field hockey players, levels of play, types of injuries, risk factor association with injuries, playing position, mechanism of injuries and health service utilization among the sports person.

METHODOLOGY: The study will collect data from minimum of 150 U-19 Players participating in the 18 th All India S. Balwant Singh Kapur Memorial Hockey Tournament for the Mata Parkash Kaur Cup. Injuries will be systematically documented using a Structured Questionnaire by Interview Schedule Method.

DATA ANALYSIS: The data will be analysed using SPSS latest version. The data will be expressed at percentage and chi square test will be used as a statistical tool.

KEY WORDS: Prevalence, field hockey, hockey injury, health service utilization.

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EFFECT OF HOLMICH AND COPENHEGEN PROTOCOL ON LUMBAR PARASPINAL MUSCLE ENDURANCE AND PERFORMANCE IN FEMALE FAST BOWLERS- A QUASI EXPERIMENTAL STUDY

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Background and purpose: The study focuses on evaluating the effect of Holmich and Copenhagen protocol on Lumbar paraspinal muscles endurance of female fast bowlers.

Methodology: 30 Female fast Bowlers participated in this study for 6 weeks after providing Holmich & Copenhagen protocol for the endurance of paraspinal muscle, performance criteria was evaluated to check the pre and post results of endurance enhancement on the fast bowler performance. The outcome measure i.e. Biering and Sorenson Test, MC Gill Torso Test and performance was evaluated using Recovery Time Measurement Test in Fast Bowlers, Fatigue Assessment Scale.

Result: Result based on the outcome measures show significant improvement in performance that is improved Recovery Time Measurement and Fatigue Assessment Scale.

Conclusion: It will be concluded from the evidence that the effect of Holmich and Copenhegen Protocol has a significant effect on Lumbar Paraspinal Muscle Endurance and Performance in Female Fast Bowlers.

Keywords: Holmich and Copenhagen Protocol, Paraspinal Endurance, Female Bowlers

FFECTS OF ECCENTRIC ORIENTED STRENGTH TRAINING VERSUS BLOOD FLOW RESTRICTION TRAINING ON RESTURN TO SPORTS AFTER ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION WITH PATELLAR TENDON AUTOGRAFT

Ramanan M (MPT Student, SBV, Pondicherry)

BACKGROUND: Anterior cruciate ligament injuries has a detrimental impact on fitness attributes. Eccentric-oriented strength training (EOST) and blood flow restriction training (BFRT) are emerging rehabilitation techniques that may enhance muscle hypertrophy, strength, and recovery, supporting early return to sports post-ACL reconstruction.

OBJECTIVE: The objective of the study is to compare the effects of eccentric oriented strength training and blood flow restriction training on return to sports after anterior cruciate ligament reconstruction.

METHODOLOGY: A comparative study was conducted on 53 participants in Mahatma Gandhi hospital at Puducherry. The participants were assigned into two groups, Group A received eccentric oriented strength training and Group B received blood flow restriction training. The training duration were 4 sessions per week for 6 weeks.

CONCLUSION: The data was found to be statistically significant ($p<0.05$) with higher improvement in group B(BFRT) compared to Group A(EOST)

KEY WORDS:ECCENTRIC ORIENTED STRENGTH TRAINING, BLOOD FLOW RESTRICTION TRAINING, ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION

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TO COMPARE THE EFFECTIVENESS OF CALISTHENICS VERSUS BALLISTIC EXERCISES FOR PATELLAR TENDINOPATHY AMONG AMATEUR FOOTBALL PLAYERS.

Bharath Kumar S (MPT Student, SBV, Pondicherry)

BACKGROUND: Football was described as an intermittent sports in, jumping and sprinting. Patellar tendinopathy affects the tendon at the front of knee and below your knee cap. Calisthenics is a type of exercise that practically performed without any need of equipment that uses your body weight. Ballistics training is a form of exercise that involves throwing weight and jumping with weights to increase power.

OBJECTIVE: The main aim is to compare the effects between calisthenics versus ballistic exercises for patellar tendinopathy among amateur football players.

METHODOLOGY: A comparative study was conducted on amateur football players .The participants are assigned into 2 groups. Group A-30 Calisthenics exercises and Group B-30 Ballistics exercises. The sample size is 60 and interventional period was 6 weeks.

CONCLUSION: The data was found to be statistically significant difference between both the groups ($p<0.05$) and proved that calisthenics exercises is more effective than ballistic exercises among amateur football players.

KEY WORDS: Amateur football, Calisthenics, Ballisthic, patellar tendinopathy.

TO COMPARE THE EFFECTS BETWEEN ACTIVE PHYSICAL ENDURANCE TRAINING VERSUS ACTIVE STRETCH TRAINING IN GROIN PAIN AMONG THE HOCKEY PLAYERS

Hariharan S (MPT Student, SBV, Pondicherry)

BACKGROUND: Hockey includes high speed and agility. The strength, endurance, balance, speed and movement can also affect the performance of hockey players. Active endurance training increases the heart and breathing rate. Active stretch training to improve muscle flexibility.

OBJECTIVE: The main aim is to compare the effects between the active physical endurance training and active stretch training in groin pain among hockey players.

METHODOLOGY: A comparative study was conducted to hockey players based on selection criteria in hockey academy. They divided into 2 groups. Group A active physical endurance training and Group B active stretch training with the duration of 6 weeks

CONCLUSION: The data was found to be statistically significant difference between both the groups ($p<0.05$) and proved that active physical endurance training is more effective than active stretch training in reducing groin pain in hockey

KEY WORDS: Active physical endurance training, active stretch training, Groin pain, Hockey.

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EFFECTS OF ANDERSON DIP EXERCISE TO ENHANCE VERTICAL JUMP AMONG BASKETBALL PLAYERS

Hari Sudharshan R (MPT Student, SBV, Pondicherry)

BACKGROUND: It's a powerhouse of cardiovascular exercise that offers a full-body workout, high-intensity training, and numerous physical and mental health benefits. A vertical jump in basketball involves the extensor mechanism, which accelerates during the jump and decelerates during landing. The takeoff phase of a vertical jump involves extending the hip, knee, and ankle joints in sequence until the feet leave the ground.

OBJECTIVE: The aim is to find out the effects of Anderson dip exercise to enhance vertical jump among basketball players.

METHODOLOGY: An experimental study was conducted on 60 basketball players based on selection criteria in around colleges of Puducherry. The participants were assigned into 2 groups. Group A would perform Anderson dip exercise and Group B would perform conventional training. The interventional period was 12 weeks.

CONCLUSION: The data was found to be statistically significant difference between both the groups ($p<0.05$) and proved that Anderson dip exercise is more effective than conventional training to enhance vertical jump among basketball players.

KEY WORDS: Anderson dip exercise, conventional training, basketball players.

TO COMPARE THE EFFICACIES OF PLYOMETRICS AND KINETIC CHAIN TRAINING WITH SCAPULAR EXERCISES ON PERFORMANCE, STRENGTH, AND STABILITY OF SHOULDER IN PROFESSIONAL BADMINTON PLAYERS: A RANDOMIZED CLINICAL TRIAL STUDY

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2. Director & HOD, Department of Physiotherapy, Jaipur National University, Jaipur

BACKGROUND: Badminton is one of the most popular racquet sports in the world, characterized by repetitive actions of short duration with high speed and intensity. It requires quick changes in direction, jumps, forward lunges, rapid arm movements, and various postural positions. This study examines and compares the efficacy of two training approaches—Plyometrics with scapular exercises and kinetic chain training with scapular exercises—over 6 weeks for improving shoulder performance, strength, and stability in professional badminton players.

METHODOLOGY: In this randomized control trial, participant assessments were conducted at the Pink City Badminton Academy in Jaipur, Rajasthan. Thirty badminton players, at both the district and state levels, were recruited for the study. They were divided into two groups: Group A and Group B. Group A received plyometric training combined with scapular exercises, while Group B underwent kinetic chain training with scapular exercises. Shoulder performance, strength, and stability were measured using the Seated Medicine Ball Throw test and the Closed Kinetic Chain Upper Extremity Stability Test.

RESULT AND CONCLUSION: The results will be analyzed using SPSS software to determine statistical significance and compare the efficacy of both training methods. This study aims to clarify the efficacies of plyometrics and kinetic chain training with scapular exercises on performance, strength, and shoulder stability in professional badminton players.

KEYWORDS: Seated Medicine Ball Throw, Closed Kinetic Chain Upper Extremity Stability Test, Badminton upper limb, strength, stability.

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EFFECT OF HIGH AND LOW-VOLUME NORDIC HAMSTRING EXERCISE (NHE) TRAINING ON HAMSTRING INJURY RISK IN PROFESSIONAL SOCCER PLAYERS

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2. Associate Professor, ISIC - Institute of Rehabilitation Sciences, Vasant Kunj, New Delhi, India
3. Senior AT Analyst, Indian Spinal Injuries Centre, Vasant Kunj, New Delhi, India

Background: Acute hamstring injuries make up 4% to 13% of soccer injuries. Eccentric NHE training is essential for preventing and rehabilitating lower extremity injuries. However, NHE has low adoption rates due to its high-volume. Examining different intervention volumes of NHE is crucial.

Objective: To evaluate the difference in effectiveness of 8-week high & low-volume Nordic hamstring exercise training on hamstring injury risk in professional soccer players.

Methods: 51 professional soccer players between the age group of 17-25 years were recruited and divided into 3 groups of 17 participants each: High-volume NHE group (HVG), Low-volume NHE group (LVG) and control group (CG). Athletes of HVG & LVG performed volume-specific NHE (HVG: 21 NHE sessions & LVG: 10 NHE sessions) in 8 weeks. Single-leg triple hop test for distance and Single-leg bridge test were assessed at the pre – intervention, at the end of 4th week and 8 th week post intervention. Statistical analysis was performed using one-way analysis of variance and repeated measures ANOVA.

Result: Significant improvement ($p<0.05$) in SLTHT was observed in HVG and LVG in both dominant and non-dominant leg from pre to post intervention. Significant improvement ($p<0.05$) in SLBT was observed in both groups HVG and LVG in right and left leg from pre to post intervention. No significant difference was found in between HVG & LVG at improving lower extremity strength & functional performance

Conclusion: Implementation of high-volume or low-volume NHE training can have a significant positive impact on reducing hamstring injury risk in professional soccer players.

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Effects of exercise on speed and accuracy with their correction in sports: A systemic review

Neeraj Kumar (PhD Scholar, Galgotias University, Greater Noida)

Background: Speed and accuracy are critical components of athletic performance across various sports disciplines. Understanding the impact of different exercise modalities on these attributes, especially their ability to correct performance deficits following fatigue or other performance declines, is essential for optimizing training and competition strategies.

Objective: This systematic review aims to synthesize evidence from the last decade regarding the effects of exercise on speed and accuracy in sports, with a specific focus on the correction of these performance metrics following exercise-induced fatigue.

Methods: Following PRISMA guidelines, a comprehensive literature search was conducted across databases including PubMed, Scopus, and Web of Science. Studies published between 2014 and 2024 that investigated the effects of exercise interventions on speed and accuracy in athletes were included. Eligible studies included randomized controlled trials, cohort studies, and other relevant experimental designs. Data were extracted and analysed to assess the impact of different exercise modalities, such as strength training, plyometric training, stabilization exercises, and acute exercise protocols, on speed and accuracy outcomes.

Results: Twenty-five studies met the inclusion criteria, encompassing a diverse range of sports and exercise interventions. The majority of studies demonstrated that strength and plyometric training significantly improved speed and accuracy across various sports, including soccer, cricket, tennis, and football. These improvements were attributed to enhanced muscle power, neuromuscular efficiency, and cognitive function. Additionally, stabilization exercises were found to improve core stability and accuracy in complex sports movements. Acute exercise interventions showed temporary enhancements in cognitive processing speed, positively affecting decision-making and execution under pressure. Strategies such as active recovery and rehydration were effective in correcting speed and accuracy deficits post-exercise.

Conclusions: The findings suggest that targeted exercise interventions, particularly strength and plyometric training, play a vital role in enhancing speed and accuracy in sports. Moreover, these interventions are effective in mitigating performance declines following fatigue. These insights can inform the development of optimized training regimens to improve athletic performance\ across different sports.

Keywords: exercise, speed, accuracy, sports performance, fatigue, correction, strength training, plyometric training.

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LEVEL OF KNOWLEDGE AND ATTITUDE OF SPORTS INJURY PREVENTION AND MANAGEMENT IN ATHLETES AND COACHES: A CROSS SECTIONAL STUDY

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Background: The prevalence of sport injury in India varies from 58.9% to 73.4% which is much higher compared the studies in other countries. Knowledge directly influences behavior for preventing injuries. In the absence of proper knowledge and attitude of sports injury prevention and management, the loss will be greater than the gain. Additionally, the knowledge and attitude of coaches in managing the sports injuries also have impact on the prevention and management in injuries and performance in sports.

Aim: A study was carried out to evaluate knowledge of athletes and coaches regarding sports injury prevention & management.

Method: A cross sectional study was carried out among 147 athletes and coaches between the age group 18-40.A pre-determined structured questionnaires was used which contain demographic information, sports related details and Knowledge attitude questionnaire.

Result: Total 147 participants were analyzed for the study. The result showed that 63.50% athletes had injury. Knowledge towards sports injury prevention and management in athletes having moderate level and coaches exhibited lower level. Attitude towards injury prevention and management were generally positive among athletes and coaches, with a weak positive correlation observed between knowledge and attitude scores.

Conclusion: it was concluded that in athletes and coaches, the level of knowledge was less and attitude was positive about sport injury prevention and management. Conducting awareness or educational programs for athletes and coaches can enhance knowledge, fostering positive attitude that aids in preventing and managing sports injuries.

Keywords: knowledge, attitude, injury prevention, sports injury, athletes, coaches

" EFFECT OF WOBBLE BOARD TRAINING ALONG WITH PLYOMETRIC TRAINING PROGRAM ON EXPLOSIVE STRENGTH, AGILITY AND DYNAMIC BALANCE IN MALE BASKETBALL ATHLETES "

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BACKGROUND: Basketball is a multidirectional sport that involves explosive activities such as sprinting, rapid changes of direction and jumping. Wobble board training can improve proprioception, which is the perception of your body position and movements in three-dimensional space. Plyometric training is an established technique for enhancing athletic performance but may also facilitate beneficial adaptations in the sensorimotor system.

AIM: To find the effect of wobble board training along with plyometric training on Explosive strength, Agility and Dynamic balance in basketball Athletes.

METHODOLOGY: A pre-test and post-test experimental study was conducted for 30 male basketball athletes. Participants were divided into two groups: Group A received wobble board training along with plyometric training, and Group B received conventional training, for 6 weeks duration. Explosive Strength is assessed by vertical jump height, Agility is assessed by Lane agility test, and Dynamic balance is assessed by Star excursion test,

RESULTS: Unpaired t test values for Explosive strength (4.45) revealed that the post-test value of the Group A (48.13) showed greater significance that of the Group B (41.73) ($p < 0.05$). Unpaired t test values for Lane agility test (2.12) revealed that the post-test value of the Group A (12.66) showed greater significance that of the Group B (13.38) ($p < 0.05$). Unpaired t test values for Dynamic balance (3.79) revealed that the post-test value of the Group A (71.67) showed greater significance that of the Group B (65.13) ($p < 0.05$)

CONCLUSION: Both Groups has significant result in Explosive Strength, Agility and Dynamic balance, but more improvement seen in wobble board training along with plyometric training group.

KEYWORDS: Wobble board training, plyometric training, Explosive strength, Agility, Dynamic balance.

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EFFECT OF CIRCUIT TRAINING EXERCISE ON REACTION TIME IN FOOTBALL GOALKEEPER: AN EXPERIMENTAL CASE STUDY

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BACKGROUND: Reaction time (RT) is defined as the period between a stimulus and the beginning of voluntary response. Reaction time is crucial for football goalkeepers, improving\ reaction time through targeted training is essential for enhancing a goalkeeper's effectiveness on the field. Goalkeeping requires a unique combination of explosive power, agility, coordination, and quick responses all of which can be developed through targeted exercises like circuit training program. The circuit training program is beneficial for improving Reaction time in football goalkeeper.

OBJECTIVE: This study is to assess the impact of circuit training exercises on the reaction time of football goalkeeper by comparing pre- and post-training results.

STUDY DESIGN: Experimental Case study.

METHOD: The circuit training program was given in a 21-year-old male football goalkeeper to improve reaction time for 16 week and the circuit training program includes 6 stations jumping jacks, body weight squat, push ups, curl ups, burpees and ball drop reaction drill. The training program includes 10 sets per week, Duration of 15 secs for each station and rest period of 10 secs after each station. The training program were given for 2-3 days per week.

RESULT: The result had shown a significant improvement in Reaction time as well as overall performance during football sessions when comparing the pre and post outcomes.

CONCLUSION: The study concluded that the Circuit training program is effective in improving Reaction time in football goalkeeper.

Keywords: Reaction time, Football Goalkeeper, circuit training exercises.

Taping for Mobility: Immediate Effects of Kinesiotaping on Foot Drop to improve balance and walking ability in Guillain-Barré Syndrome-A Case Study

Krutika Surana (MPT Student, ISIC), Stuti Khanna, Garima Wadhwa

Introduction - GBS is a rare disease of polyneuropathy in which our body's immune system attacks the peripheral nervous system. It is associated with impairments like flaccidity, muscle weakness, sensory loss, and foot drop which affects balance and walking ability. Traditionally, in GBS, the primary focus is on muscle strengthening and motor functions, however Kinesiotaping (KT) has received attention to provide immediate symptomatic effect to increase functional outcomes.

Case description -This case study is of a 20 year old male recovering from GBS suffering from mild to moderate lower limb muscle weakness and gait disturbances due to foot drop. The patient reported difficulty walking and frequent stumbling.

Methods - Kinesiology tape was applied at the ankle to provide better foot clearance during gait and proprioceptive feedback. The tape was applied with minimal tension to allow for muscle activation while providing support. Immediate effect was seen using clinical observation, TUG, and 10 meter walk test and balance assessment using Berg Balance scale pre and post KT.

Results – Improvements were seen in gait, dorsiflexion and reducing the compensatory movements. Balance and walking ability both improved after the application of KT with Berg Balance Score going from 28 to 34 and reduction in TUG time from 18 sec to 12 sec. While further research with larger sample sizes is needed to confirm these findings, KT appears to be a promising intervention in the management of foot drop and associated mobility challenges in GBS.

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Synergizing Triggered FES And PNF: A Novel Approach To Trunk Control In Stroke Rehabilitation - Protocol Development And A Case Study

Harshita Jain (MPT Student, ISIC), Stuti Sehgal, Garima Wadhwa, Harpreet Singh

Background Stroke often results in impaired trunk control, frequently leads to significant functional dependence. While Proprioceptive Neuromuscular Facilitation (PNF) and Functional Electrical Stimulation (FES) are well-documented rehabilitation techniques, limited evidence exists on their combined use. This study focuses on developing and evaluating the efficacy of a novel rehabilitation protocol integrating PNF patterns and techniques with Triggered FES to improve trunk control in post-stroke survivors.

Methods The intervention incorporated PNF patterns (chopping, lifting) and techniques (rhythmic stabilization, alternating isometrics, slow reversals) alongside triggered FES. Electrical stimulation parameters included a symmetrical rectangular biphasic current (40 Hz frequency, 200 μs pulse width). Electrodes were placed over the thoracic and lumbar erector spinae muscles and the abdominals. The protocol was administered for 30 minutes per session, 5 days a week, for 4 weeks, alongside conventional physiotherapy. A 40-year-old male, 6 months post stroke with impaired trunk control leading to increased functional dependence, underwent this intervention, and pre- and post-intervention assessments were performed using Trunk Impairment Scale (TIS), Postural Assessment Scale for Stroke (PASS).

Results Notable improvements were observed in trunk control and postural stability. The TIS score improved from 9/23 to 16/23, and the PASS score increased from 14/36 to 28/36, indicating enhanced sitting balance, dynamic trunk control, and postural transitions.

Conclusion The integration of Triggered FES and PNF demonstrated significant potential for addressing postural instability and trunk control in post-stroke rehabilitation. Further studies with larger cohorts are warranted to validate these findings and investigate long-term outcomes.

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EFFECTIVENESS OF PACING ACTIVITIES COMBINED WITH STRENGTHENING AND BALANCE TRAINING IN INDIVIDUALS WITH LIMB-GIRDLE MUSCULAR DYSTROPHY: A CASE REPORT

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Background: Limb-Girdle Muscular Dystrophy (LGMD) represents a group of genetic disorders characterized by progressive weakness and wasting of the muscle.

Objectives: The objective of the study is to highlight the efficacy of a research-supported multifaceted physiotherapy management protocol in alleviating the symptoms and enhancing the functional outcome in LGMD

Methods: To present a case study of a 32-year-old female with Limb-Girdle Muscular Dystrophy experiencing progressive muscle weakness, increased mobility challenges, respiratory difficulties, and decreased quality of life over several years. The patient received an intervention of 45-50 minutes per session, 5 times weekly for 6 consecutive weeks. An approach included diaphragmatic breathing exercises and pacing activities, including active range of motion of the scapula, mobility, strength training exercises, stretching, balance training, electrical stimulation, and aerobic training. Baseline and post-treatment assessments were conducted using the Functional Independence Measure (FIM), and Manual Muscle Testing (MMT), and 6-minute walk test scores to evaluate muscle strength and functional mobility.

Results: After 6 weeks of intervention, significant improvements were observed in the FIM, MMT, and 6-minute walk test scores compared to baseline, indicating enhanced muscle strength and functional independence. The results of this report suggest that a potentiate intervention can improve outcomes in individuals with LGMD.

Conclusion: This case underscores the importance of a comprehensive physiotherapy approach in managing LGMD, highlighting the importance of individualized care and empowering patients to maintain mobility and quality of life.

Keywords: Functional Independence Measure, Mobility, Limb-Girdle Muscular Dystrophy, Physical Therapy Modalities.

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Effect of virtual reality training along with conventional therapy on trunk function, standing Balance and mobility in stroke patients- A case study

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Background: A stroke, or cerebrovascular accident (CVA), disrupts blood flow to the brain, often impairing trunk functions vital for balance, mobility, and daily activities. Virtual Reality (VR) training is increasingly utilized in post-stroke rehabilitation, offering patients a simulated 3D environment to practice real-life tasks. This study evaluates the effectiveness of VR training combined with conventional therapy in improving trunk function, balance, and mobility.

Method: A CVA patient with right-side hemiplegia underwent a 21-day rehabilitation program combining VR-based exercises with conventional therapy. VR sessions focused on motor control and postural stability through interactive, task-specific simulations. The patient's progress was assessed using the Trunk Impairment Scale (TIS), Functional Independence Measure (FIM), and Berg Balance Scale (BBS).

Results: Significant improvements in TIS and FIM scores were observed, indicating enhanced trunk control, neuromuscular response, and daily activity independence. These results highlight VR training's role in complementing traditional therapy by reducing fall risks and accelerating recovery.

Conclusion: VR training effectively improves trunk function, balance, and mobility in stroke patients, providing an engaging, dynamic tool to enhance rehab outcomes and promote independence.

Keywords: Virtual Reality, Trunk Impairment Scale, Functional Independence Measure, Berg Balance Scale, Stroke Rehabilitation, Postural Control

Impact of Neural mobilization on grip strength in asymptomatic smartphone addicted individuals

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Background- The regular and intense use of smartphones predisposes median nerve to compression affecting hand functionality leading to symptoms such as pain, numbness and weakness in the wrist and hand region. Thus, with surge in smartphone use, early introduction of intervention becomes imperative to prevent further progression of impairments. Neural mobilization is found to be effective in reducing nerve related impairments but its use in smartphone users is scarce. Thus ,our focus was to study the effectiveness of neural mobilization technique on grip strength in asymptomatic smartphone individuals with high smartphone usage, often termed as smartphone addiction.

Objectives - The primary objective of this study was to determine if a single session of nerve mobilization could improve grip strength in asymptomatic smartphone addicted individuals.

Methodology - pre- post study design with 150 smartphone addicted individuals of age 18-25 of both genders. Smartphone addiction was assessed on the basis of smartphone addiction scale (SAS-SV). Neural mobilization of median nerve by sliders technique was used as intervention. Grip strength was used as primary outcome.

Clinical significance- The finding of this study would suggest efficacy of neural mobilization in improving grip strength, which would help in formulating the effective prevention strategy to smartphone users. Adding neural mobilization to daily routine of smartphone users in combination with ergonomic advice to avoid prolonged gripping, repetitive thumb motion and awkward wrist postures along with regular breaks in between when using mobile devices would improve work efficiency and performance.

Results- The data was analyzed for 7 participants 4 males and 3 females. The mean age group of participants was 24.14 with BMI of 22.55 . Clinical improvement in grip strength was found to slightly more in sliders group(8) as compared to control(4).

Conclusion- There was no significant difference in results because the data was less . Clinical improvement in grip strength was seen after neural mobilization. Generalization of findings can be done on larger samples.

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Efficacy of Lee Silverman Voice Treatment-BIG and Nordic pole walking on balance impairment and quality of life in Parkinson's individuals

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BACKGROUND: Parkinson's disease comes under progressive neurodegenerative disorder mainly characterised by motor symptoms, significantly impacting patient quality of life. Lee Silverman Voice Treatment-BIG and Nordic pole walking are both interventions designed to improve balance, postural stability, quality of life among Parkinson's individuals.

OBJECTIVE: The aim is to compare the effects between Lee Silverman Voice Treatment- BIG and Nordic pole walking among Parkinson's individuals.

METHODOLOGY: A comparative study was conducted on 60 Parkinson's individual based on selection criteria in Chennai. The participants are assigned into 2 groups. Group A will undergo Lee Silverman Voice Treatment-BIG and Group B will undergo Nordic pole walking training. The interventional period was 8 weeks.

CONCLUSION: The data was found to be statistically significant difference between both the groups ($p<0.05$) and proved that Lee Silverman Voice Treatment-BIG is more effective than Nordic pole walking in improving balance, postural stability and overall quality of life.

KEY WORDS: Parkinson's disease, Lee Silverman Voice Treatment-BIG, Nordic pole walking, balance, quality of life.

Effects of motor cognitive dual task training and dynamic neuromuscular stabilization training on dynamic stability in individuals with vestibular ataxia

Haripratha S (MPT Student, Sri Balaji Vidyapeeth, Pondicherry)

BACKGROUND: Vestibular feedback control is the key fundamental feature for maintaining dynamic stability and gait pattern adaptation on external environment. The motor cognitive dual task training and dynamic neuromuscular stabilization training enhances dynamic stability, coordination, multitasking activity, postural control, core and proprioceptive training.

OBJECTIVE: The main objective of the study is to evaluate the effectiveness of motor cognitive dual task training and dynamic neuromuscular stabilization training on dynamic stability in individuals with vestibular ataxia.

METHODOLOGY:A randomised controlled trial with a pre-post test design study was conducted on 54 participants in Mahatma Gandhi hospital at Puducherry. The participants were randomly assigned to group A motor cognitive dual task training(MCDT) and group B dynamic neuromuscular stabilization training(DNS). The training duration were 3 sessions per week for 6 weeks. The outcomes were measured and recorded.

CONCLUSION: The study was found to be statistically significant with a higher improvement in group A (DNS) in individuals with vestibular ataxia.

KEYWORDS: Motor cognitive dual task training, dynamic neuromuscular stabilization training, vestibular ataxia.

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Comparison between task based dynamic hand splint exercises and mirror therapy exercises for hemiplegic hand function

Jeevitha D (MPT Student, Sri Balaji Vidyapeeth, Pondicherry)

BACKGROUND: Hemiplegia following a stroke can affect hand movement, due to which the patient demonstrate, moderate to severe upper extremity dysfunction leading to long term functional limitations. Typically the patient lacks voluntary finger extension and is also subjected to involuntary contraction of finger flexors resulting in clenched fist and thumb in deformed position.

OBJECTIVE: The objective of the present study was to compare the task based dynamic hand splint exercises and the mirror therapy exercises for hemiplegic hand function.

METHODOLOGY: A Comparative study was conducted on 60 clinically diagnosed acute hemiplegic patients based on selection criteria in Mahatma Gandhi Hospital, Pondicherry. The participants were assigned into two groups. Group A were performed dynamic hand splint exercises and Group B were performed mirror therapy. The intervention period was performed for 3-4 mins for 30 mins /day for 12 weeks.

CONCLUSION: This study concluded that task based dynamic hand splint exercise is more significant improvement ($P<0.001$) than the mirror therapy exercise for improving the hand function among hemiplegic stroke patients.

KEYWORDS: Stroke, Mirror therapy, Dynamic splint, Fugl Meyer Assessment Upper Extremity

Effectiveness of Pelvic Proprioceptive Neuromuscular Facilitation on Balance and Gait Parameters in Children with Hemiplegic Cerebral Palsy: A Case Report

Sakshi Runwal (MGM School of Physiotherapy, Chhatrapati Sambhajinagar, Maharashtra)

BACKGROUND- Cerebral Palsy (CP) represents a group of permanent disorders of movement and posture-causing activity limitations that are attributed to non-progressive disturbances in the developing fetal or infant's brain.

CLINICAL INFORMATION- An 8-year-old boy presented with left-sided weakness in the upper and lower limbs, gait abnormalities, and balance issues. He was born after an uncomplicated pregnancy but had a delayed birth cry (20 minutes), requiring NICU care for 8 days. At 6 hours of life, he had a seizure, and by 3 months later, his father noticed reduced movement on the left side. The weakness persisted, leading to his OPD visit. The patient was born to consanguineous parents. Examination revealed left-sided muscle weakness, postural abnormalities, and bilateral hip tightness. Right-sided muscle tone was normal.

OBJECTIVE- To assess the effectiveness of Pelvic Proprioceptive Neuromuscular Facilitation in improving balance and gait parameters in children with hemiplegic cerebral palsy. The child's balance was assessed using PBS with a baseline score of 38/56. After 4 weeks of PNF intervention, the child's score improved to 46/56. Step length increased from 25 cm to 32 cm on the affected side and from 30 cm to 36 cm on the unaffected side, with improved stride symmetry. Stride length improved from 60 cm to 70 cm.

CONCLUSION- The findings suggest that targeting pelvic stability through PNF techniques can have a positive impact on overall motor function in children with hemiplegic cerebral palsy.

KEYWORDS- Balance, Gait, Hemiplegic Cerebral Palsy, Proprioceptive Neuromuscular Facilitation

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Effects of Cognitive Training On Attention And Executive Function Among People With Traumatic Brain Injury

Mohamed Salahudeen M A (MPT Student, Sri Balaji Vidyapeeth, Pondicherry)

BACKGROUND: In moderate to severe TBI, cognition appears to be markedly impaired around 1 month post injury or shortly after resolution of PTA. Cognitive impairments persisting even after 3 months were found to be associated with higher frequency disability. The cognitive recovery tends to be rapid in patients with mild TBI, returning almost to "normal baseline functioning" within 3 months.

OBJECTIVE: To find out the Effect of Cognitive Training on Attention and executive function in People with TBI.

METHOD: 50 participants with TBI divided into 2 groups Group A=25(cognitive training group), Group B = 25(conventional group) both male and female from the age group of 30 to 50 were included, participants with moderate traumatic brain injury, decreased score in MoCA score are included. The subjects excluded are mild TBI.

RESULT: Based on the statistical analysis of pre and post data of Trail making test, the data shows significant improvement ($p<0.05$) in attention and Executive function among people with TBI.

CONCLUSION: The study concluded that using cueing exercise on improving attention has its positive effect on cognition of Parkinson's patient.

KEYWORD: TBI, cognition, attention, Executive function

Assessment of burden on caregivers of patients with neurological disorders : A Cross Sectional Study

Ashwini Mistry (PG student); G Palani Kumar (Dean, Sumandeep Vidyapeeth, Vadodara)

BACKGROUND: Neurological disorders that affects physical functions leads to greater disability. The caregivers who play a major role in rehabilitation also affected with burden of care. Assessing the burden of care can help to find the impact of rehabilitation.

AIM : To assess the of level of burden on caregivers of patients with neurological disorders.

OBJECTIVES: To assess the level of burden on caregivers of patients with neurological disorders; to assess the physical disability in patients with neurological disorders; and to analyse the burden on caregivers in relation to physical disability of patients with neurological disorders.

METHOD: A Cross Sectional Study was conducted in which 85 patients with neurological disorders and their principal caregivers of age 18 years and above were included. To determine the level of burden on their caregivers the Zarit Burden Interview (ZBI) scale was used. Physical disability of patients was assessed using the Barthel Index.

RESULTS: Level of burden assessment by ZBI scale reports that 32% of caregivers had mild to moderate burden. Physical disability using Barthel Index showed that most subjects were moderately or severely dependent (91%). Correlation between Barthel Index and ZBI with the p-value 0.039 ($p<0.05$) showed that the greater the disability, the greater the load on the caregivers.

CONCLUSION : Caregivers of neurological disorders often face significant burden, impacting their well-being and patient care. Caregiver burden correlates with patient disability, increasing as patient dependence increases.

KEYWORDS: Caregiver, Burden, Neurological Disorders, Physical Disability, Rehabilitation

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BOOSTING FUNCTIONAL MOBILITY POST STROKE: THE ADDED IMPACT OF EMG BIOFEEDBACK IN BOBATH THERAPY FOR LOWER LIMB REHABILITATION

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Background and Purpose: Stroke is a major cause of long-term disability, often affecting lower limb function, balance, and gait. While Bobath therapy is widely used for rehabilitation, the added benefits of combining it with EMG Biofeedback therapy are not well understood. This study aimed to compare the effectiveness of Bobath therapy alone versus its combination with EMG Biofeedback therapy in improving lower extremity function and gait in stroke patients.

Methods: In this single-blind randomized trial, 50 stroke patients (35 men, 15 women, aged 40-65 years) were recruited based on inclusion criteria, and randomly assigned to two groups. Group A (n=25, mean age 51.24±7.20 years) received EMG Biofeedback with Bobath therapy, while Group B (n=25, mean age 51.08±7.22 years) received only Bobath therapy. Both groups underwent 16 sessions over four weeks. Lower extremity function was measured using the Fugl-Meyer Assessment lower extremity subscale, and gait was assessed with the 10-meter Walk Test at baseline and post-treatment.

Results: Both groups were homogenous at baseline ($p > 0.05$) and showed significant improvement ($p < 0.05$) in lower extremity function and gait after 16 sessions. However, there was no significant difference ($p > 0.05$) between the groups in any outcome measures.

Conclusion: The study concludes that both EMG Biofeedback with Bobath therapy and Bobath therapy alone effectively improve lower extremity function and gait in stroke patient. However, no additional significant effect was produced by the application of EMG Biofeedback.

Trial registration: The trial is registered with ClinicalTrials.gov (NCT05953272) and CTRI (CTRI/2023/04/051999).

Keywords: Stroke, CVA, Bobath therapy, EMG Biofeedback, Fugl-Meyer Assessment, Gait

Impact of Biomarker Analysis on Unveiling Neuroplasticity-driven Rehabilitation Outcomes in Adult Stroke Population: A Systematic Review

Harsh Khorwal (PDUNIPPD, Delhi)

Background: Stroke is a leading cause of long-term disability and mortality globally, with significant impacts on individuals and society. Despite the critical role of rehabilitation, current practices often fail to harness neuroplasticity effectively.

Objectives: Effects of various rehabilitation strategies on the brain's plasticity, and what biomarkers can we measure to evaluate these effects; Biomarker analysis as a potential tool for predicting neuroplastic changes induced by various rehabilitation strategies.

Methods: Eligibility Criteria: Randomized controlled trials (RCTs) involving stroke patients aged 40–60, focusing on intervention linked with measurable biomarkers. Sources: PubMed, ScienceDirect, PEDro, and Google Scholar, from 2005 to 2023. Risk of Bias: PEDro scale for bias assessment. Results were synthesized qualitatively.

Results: Nine studies met the inclusion criteria, involving diverse interventions: physical therapy, non-invasive brain stimulation, and multimodal techniques. Biomarkers included EEG (ERD/ERS), fMRI, and TMS metrics. ERD and ERS were linked to motor recovery, indicating changes in neural oscillations. TMS measured MEP latencies, indicating enhanced corticospinal excitability, with new MEPs in previously unresponsive muscles. Reduction in silent period duration balanced excitatory-inhibitory processes, improving motor function. fMRI showed improved functional connectivity in motor networks, offering critical insights into recovery mechanisms.

Conclusion: This review highlights the importance of biomarker analysis in guiding tailored treatment plans and helps harness neuroplasticity to maximize functional recovery. Further research is needed on their predictive value alongside clinical outcome measures.

Keywords: Neuroplasticity, Biomarkers, Stroke, Rehabilitation, EEG, fMRI, TMS

Community Mobility in Patients with Multiple Sclerosis in Saudi Arabia – A

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Qualitative Study Analysis

Saja Basharahil, Fayaz Khan, Majed Albadi, and Mashael Alsubhi (Faculty of Medical Rehabilitation Sciences- King Abdulaziz University)

Multiple Sclerosis (MS) is a neurological, chronic, commonly autoimmune disease which affects the central nervous system (Mohebi et al., 2015; Walton et al., 2020), MS affects around 2.8 million people worldwide. In Saudi Arabia (SA), the estimated prevalence was 40.4 per 100,000 person (AlJumah et al., 2020). MS patients live with multiple functional impairments, which makes prolonged mobility challengeable, and affects their community mobility (CM) and participation. Although CM is essential to keep healthy participation (Giroux et al., 2023), there is limited evidence to explore the CM experience qualitatively from patients' perspectives.

Thus, the objective of our study is to explore the experience of community mobility from patients' perspective in order to: 1) recognize the factors affecting their community mobility, 2) identify the secondary elements related to the basic domains including (balance, falling, and fatigue). We've used an inductive approach, based on a face-to-face individual audio-recorded interview, following the criteria of Tong et al., (2007). Based on Braun and Clarke, (2006) method of analysis, the main themes identified as A) Restrictions related to the main factors. B) The impact of one factor on another. and D) the Secondary factor's impact on community mobility. In conclusion, the results respects the unique experience of our patients in SA within their environment and culture. Also, It emphasizes the need for collaboration between the medical rehabilitation institution and other governmental institutions to facilitate different strategies to improve the community mobility.

Effect of Nintendo Wii based Exergaming on sitting balance and quality of life in

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patients with incomplete spinal cord injury

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Background and need of research: Sitting balance is an essential prerequisite for performing activities of daily living. Approximately 70-80% individuals with SCI experience decreased trunk control and are often wheelchair bound, which significantly affects their ability to maintain balance and, in turn, impacts their quality of life (QoL). Virtual reality (VR) - based exergaming offers a promising rehabilitation approach by providing interactive user interfaces that simulate real-life activities or environments.

Methods: Eleven individuals with SCI (ASIA B, C and D, with level of injury between T6 and T12) were enrolled in the study as per the inclusion criteria. Participants underwent VR-based exergaming using Nintendo Wii Sports Resort programme for 30-minute sessions, five days a week over four weeks. Outcome measures included the Star Test (Prokin 252 Trunk Sensor) and Modified Functional Reach Test (mFRT) to assess sitting balance as well as International Spinal Cord Injury Quality of Life Basic Data Set Version 1.0 (ISCoS QoL BDS V1.0) to evaluate QoL. Assessments were conducted one day prior to the intervention and repeated one day after its completion.

Results: The Star Test, mFRT, and ISCoS QoL BDS V1.0 all showed notable increases in scores from pre- to post-intervention. Analysis revealed these changes to be statistically significant ($p < 0.05$).

Conclusion and clinical implications: The findings suggest that the Virtual reality-based exergaming effectively enhanced both sitting balance and quality of life in individuals with incomplete spinal cord injury.

Keywords: Spinal cord injury, Exergaming, Virtual reality, sitting balance, quality of life

Quality of life in individuals with chronic spinal cord injury using WHOQOL-BREF

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BACKGROUND-Quality of life is the ability to perform everyday activities reflecting physical, psychological, and social well-being and a person's view of their place in life in relation to their objectives, standards, expectations, and worries alongside the culture and value systems in which they live. QOL remains fundamentally multifactorial. Spinal cord injury has a devastating effect on the QOL. The WHOQOL was developed by the WHOQOL group in an attempt to establish a QOL assessment.

OBJECTIVE- To determine the QOL of an individual with chronic SCI using WHOQOL-BREF.

METHODOLOGY- A 30 item WHOQOL BREF in English and a 26 item Hindi version of the same was used to infer 50 individuals with SCI at Indian Spinal Injuries Centre.

RESULT-The frequency distribution of the four domains of WHOQOL-BREF was nearly symmetric and showed no floor or ceiling effects. We included 50 subjects with mean age 38.63±12.84 (mean age±SD) years, 72% males and 28% females. The mean scores for the domains were: physical(12.26), psychological(10.80), social(13.78) and environmental(15.34). The age of the subjects exhibited a negative correlation with the psychological and environmental domain with correlation coefficient being -0.298 and -0.305 for both the domains respectively. The study suggested most participants are unsatisfied with their QOL.

CONCLUSION- Greater environmental and psychological challenges and issues are linked to older ages. The WHOQOL came out to be proficient with its various properties to assess the QOL of individuals post traumatic spinal cord injury.

KEY WORDS- Spinal cord injury, WHOQOL, Quality of life

Effect Of Application-Based Cognitive Training On Attention, Memory And Processing Speed In Individuals With SCI

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BACKGROUND AND NEED FOR RESEARCH: Traumatic Spinal Cord Injury (SCI) is linked to significant cognitive impairments, with approximately 60% of patients experiencing deficits in attention, memory, and processing speed. SCI patients are 13 times more likely to face cognitive challenges than the general population. Web-based cognitive training offers an engaging and accessible approach, leveraging interactive games to address these deficits.

METHODS: Twelve individuals with traumatic SCI (4–6 months post-injury, age 18–50 years, MoCA score 18–25, indicative of mild cognitive impairment) were enrolled and randomly assigned to two groups. Group I (experimental, n=6) received application-based cognitive training using Lumosity on a laptop, with sessions lasting 20 minutes, 5 days per week for 4 weeks. Group II (control, n=6) underwent conventional cognitive training with same frequency and duration. Cognitive outcomes, including oral version Symbol Digit Modalities Test (SDMT) and Attention Network Test (ANT), Stroop(Color) , Ebbinghaus were assessed at baseline and post-intervention using Psychology Experiment Building Language (PEBL) software.

RESULTS: Within-group analysis (Wilcoxon signed-rank test) showed significant improvements in ANT, SDMT, Ebbinghaus, and Stroop scores in both groups. However, between-group analysis (Mann-Whitney U test) revealed significantly greater improvements in SDMT, Ebbinghaus, and Stroop scores in Group I compared to Group II ($p < 0.05$).

CONCLUSION AND CLINICAL IMPLICATIONS: Application-based cognitive training using Lumosity significantly enhances attention, memory, and processing speed in SCI patients. Its engaging and interactive nature, combined with visual and auditory feedback, makes it a versatile tool for cognitive rehabilitation, offering potential for broader integration into clinical practice.

KEYWORDS: Cognition, Spinal Cord Injury, Web-Based Cognitive Training

Optimizing Ankle Kinematics and Spatio-Temporal Gait Variables Through Integrated Activity-Based Mirror Therapy and Neuromuscular Electrical

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Stimulation in Individuals with Stroke

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Background and objective: Stroke is a prevalent cause of disability, often resulting in significant gait impairments due to motor function deficits. Mirror therapy enhances motor learning through visual feedback, while neuromuscular electrical stimulation (NMES) facilitates muscle activation and recovery. To evaluate the impact of Activity-based mirror therapy(ABMT) combined with NMES in improving gait performance in stroke individuals.

Methods: The participants were recruited from Physical Medicine and Rehabilitation Department, Indian Spinal Injuries Centre. Seven stroke individuals with hemiparesis were included in the study. Participants performed ankle, knee, and hip activities in both short-sitting and long-sitting positions with less-affected lower limb in front of the mirror while hiding the affected limb. The intervention consisted of 30 minutes of Activity-based mirror therapy(ABMT) combined with NMES targeting the affected lower limb, administered five times weekly for four weeks. Gait assessments were performed with TechnoBody Walker View treadmill using foot sensors which analysed ankle kinematics and spatio-temporal variables at baseline and post-intervention.

Results: The results indicated that participants experienced significant improvements in both kinematic and spatiotemporal gait measures from baseline values indicating enhanced gait stability and efficiency.

Conclusion: The findings suggest that incorporating ABMT with NMES could represent a valuable strategy in stroke rehabilitation protocols by improving both kinematic parameters and spatiotemporal measures of the gait.

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Effectiveness of Dynamic Neuromuscular Stabilization and Neurodevelopmental Therapy on Gross Motor Function and Trunk Control in Children with Spastic Diplegic Cerebral Palsy: A Randomized Clinical Trial

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Background and Objective: Spastic diplegia, a common subtype of cerebral palsy, affects children regardless of gestational age or birth weight. Impaired trunk control in these patients limits extremity movements, restricting gross motor activities. Physiotherapists play a critical role in addressing these impairments. Neurodevelopmental therapy (NDT) is widely used to enhance trunk control and gross motor skills in spastic diplegia. Dynamic neuromuscular stabilization (DNS), a promising technique for improving trunk control across various populations, lacks adequate research for its application in spastic diplegia. This study aims to evaluate the effectiveness of DNS in this population and compare it with NDT.

Methods: Thirty-six children diagnosed with spastic diplegia were randomly divided into two groups: Group A (NDT + conventional physiotherapy) and Group B (DNS + conventional physiotherapy), with 18 participants each. Both groups underwent one-hour therapy sessions, five days a week, for four weeks. Gross motor function and trunk control were assessed at baseline and post-intervention using the Gross Motor Function Measure-88 (GMFM-88) and Trunk Impairment Scale (TIS).

Results: Both groups demonstrated significant improvements post-intervention. However, no significant differences were observed in GMFM-88 scores between the groups pre-treatment ($p>0.05$, $Z=-1.236$) or post-treatment. Similarly, TIS scores showed no significant differences pre-treatment ($p>0.05$, $Z=-0.611$) or post-treatment ($p>0.05$, $Z=-0.016$).

Conclusion: Both NDT and DNS effectively improved trunk control and gross motor function in children with spastic diplegia. The absence of significant differences suggests that these methods are equally beneficial for enhancing motor skills and trunk control.

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Diverse Ambulatory Profiles in Cerebral Palsy: An In-depth Comparative Review

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Background: The estimation of ambulation prognosis in cerebral palsy (CP) children poses a challenge for parents, caregivers, neurologists, and pediatric rehabilitation specialists despite its status as the primary cause of chronic disability in this demographic. Currently, no reliable prognostic tool exists for predicting ambulation in these children, making it imperative to anticipate their ambulatory potential.

Methodology: Research indicates that a child's gross motor skill development, such as achieving neck control by nine months, independent sitting by two years, crawling, and meeting other developmental milestones by thirty months, in addition to factors like postural reactions, cognitive abilities, infantile reflexes, and auditory and visual functions, serve as predictive indicators of ambulation. Moreover, even favorable upper limb functions in CP contribute to prognosis of ambulation. The primary cause of chronic disability in children population is cerebral palsy, and it can be challenging for pediatric rehabilitation specialists, neurologists, and parents to predict a child's prognosis for walking. The ambulation chart is available, which is developed by A Thai, provides guidance on this matter. It is yet unknown how valid and reliable this tool is to serve as a predictor of ambulation in patients with cerebral palsy. To develop a suitable method for predicting ambulation in cerebral palsy that takes into account all the variables except those listed above, more research in this area is required. The present review will provide a basic pathological background of cerebral palsy and prediction of ambulation.. Moreover, the major factors underlying ambulation are summarized.

Keywords - Cerebral palsy, ambulation prediction, prognostic factors.

Gait Improvements in Individuals with SCI through virtual reality treadmill Training: Insights from Five Case Studies

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Introduction: Spinal cord injuries (SCI) often result in significant motor function impairments, including gait dysfunction, which negatively impacts quality of life. Virtual Reality Treadmill Training (VRTT) has emerged as a promising rehabilitation tool for neurological conditions.

Aim: The aim of this study is to evaluate the impact of virtual reality treadmill training on gait functionality in individuals with SCI.

Methods: Five individuals with SCI participated in 15 sessions of VR-assisted treadmill training using the Technobody Walker View treadmill. The first five sessions involved providing visual and auditory feedback via a virtual screen, while the subsequent sessions included exposure to virtual environments, such as park and city views. The speed of the treadmill was kept at 0.2 km/hr, which was increased as per individual basis. Each session lasted for 20 minutes. Gait parameters, including step length, average cycle time, joint range of motion, and load symmetry, were assessed.

Results: Two out of five individuals were of non-traumatic SCI, and three were of traumatic SCI. Participants showed improvements in gait parameters, including increased step length, enhanced hip and knee joint range of motion, load symmetry, and vertical displacement of COG, indicating better coordination during walking. Two of the participants were also able to perform a treadmill with 1% anterior inclination and reduced support.

Conclusion: The findings from this case study indicate that VR treadmill training can effectively improve key gait parameters in individuals. However, the exact changes can only be concluded after the randomized controlled trial.

Key Words: Innovation, Gait Training, Gait Rehabilitation, Motor Recovery, Gait Parameters

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Physical Therapy Induced Adult Neurogenesis and Synaptogenesis in Cognitive Function among neurological conditions- A scoping review

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Adult neurogenesis, the process of generating new neurons in the adult brain and synaptogenesis, the formation of synaptic connections, has emerged as a promising area in cognitive neuroscience, especially in understanding cognitive recovery within neurological conditions. Physical therapy, a widely used intervention for neurological rehabilitation, is believed to facilitate neurogenesis and support cognitive function. This scoping review explores the impact of physical therapy on adult neurogenesis and synaptogenesis has its role in enhancing cognitive function among individuals with neurological conditions such as stroke, traumatic brain injury, Parkinson's disease, and multiple sclerosis.

The review synthesizes findings from experimental and clinical studies examining physical therapy techniques, including aerobic exercise, resistance training, and task-specific motor exercises, known to influence brain plasticity, neuronal survival, differentiation, and synaptic plasticity. By mapping evidence across various methodologies, the review highlights the mechanisms by which physical activity stimulates neurogenesis and synaptogenesis in the hippocampus and other brain areas associated with cognitive processes. The impact on memory, executive functions, and learning is examined alongside factors such as therapy duration, intensity, and individual patient characteristics that affect outcomes.

Findings indicate that physical therapy may enhance neurogenesis through neurotrophic factors, improved cerebral blood flow, and decreased inflammation, which collectively support cognitive improvement. However, the review identifies gaps in knowledge regarding the optimal types and intensities of physical therapy required to achieve significant cognitive benefits. Further research is necessary to establish evidence-based physical therapy protocols for maximizing neurogenesis, synaptogenesis and cognitive recovery in patients with neurological impairments. This scoping review provides foundational insights for developing targeted rehabilitation strategies aimed at cognitive enhancement through neurogenesis.

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Extracting the Potency of Ankle PNF Techniques on Balance and Gait Parameters in Patients with Stroke: A Randomized Controlled Trial

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Background: Stroke is the leading cause of death and disability in India. According to estimates, 20-30% of stroke survivors manifests themselves with a lack of control over the ankle dorsiflexors which impedes with the normal gait pattern and the ability to maintain balance.

Methods: The study included 42 participants of either gender with an age group ranging from 40 years-65 years who were diagnosed with Stroke and a grade of 1 or 1+ on Modified Ashworth Scale. The 42 participants were randomly allocated to the experimental group and control group. The experimental group received Ankle PNF techniques like Rhythmic Initiation, Rhythmic Stabilization and Slow Reversals for 30 minutes, 5 days per week for 4 weeks with a static stretch for the ankle plantar-flexors for 60 seconds, 5 days per week for 4 weeks, while the control group received a static stretch for the ankle plantar-flexors for the same duration. The baseline and post treatment findings were recorded through the Berg Balance Scale and Gait Parameters like Stride length and Cadence.

Results: The results of the study demonstrated a fruitful effect of Ankle PNF techniques in the experimental group over the static stretching of the plantar-flexors in the control group.

Discussion: Numerous studies were taken and included from 2013-2022 which were aligning with the current study.

Conclusion: Ankle PNF is a fruitful intervention strategy in optimizing the dorsiflexor control, balance and gait parameters in stroke patients.

Keywords: Stroke, Balance, Gait, Proprioceptive Neuromuscular Facilitation

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The Evolution of Technology: A Review of Device-Based Physical Activity Measurement in Stroke Research

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BACKGROUND: Physical activity has been proven to have a wide range of beneficial effects on stroke. Clinical guidelines for stroke management include recommendations for Physical activity with dosage. To decrease the bias in assessment, device-based recording of PA is gaining popularity in research. Hence, selecting an appropriate tool to measure physical activity is important. The selection criteria need to consider accuracy and feasibility.

AIM: This review aims to comment on the applicability, accuracy, and feasibility of different device-based physical activity monitoring in stroke survivors.

METHOD: Studies targeting device-based physical activity measurement among the stroke population between 2000 and 2024 have been included in this review to comment on the evolution of technology in physical activity measurement in stroke research and the accuracy and feasibility associated with various devices.

RESULT: Step activity monitors, Pedometers, and accelerometers are commonly used for PA measurement in stroke research. Each device has pros and cons, ranging from placement to data extraction, and no device has been reported superior for capturing all physical activity parameters under different circumstances. Accelerometers are considered superior for the accuracy of various physical activity parameters. However, feasibility is linked to cost and skill, and applicability is mainly linked to the study objective.

CONCLUSION: Device-based physical activity measurement allows continuous monitoring of a person for a prolonged duration, making it more suitable for capturing routine activities. The measurement tool needs to be chosen based on the study's purpose and feasibility regarding availability, handling skill, acceptance, etc.

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Additional Effect of Alpha Music Rhythm on Cognition and Upper Limb Motor Recovery in Individuals with Chronic Stroke: An Experimental Study

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Background: Besides motor impairment, cognitive decline is often present in stroke survivors. The alpha rhythm is the longest-studied brain oscillation and has been theorized to play a key role in cognition. Cognitive evaluation is important to better address the rehabilitation treatment since the cognitive impairment can negatively influence the upper limb motor performance. Improvement induced by music therapy in stroke individuals is due to the combined effects of intensive repetitive practice and musical stimulation but the evidence to support these propositions has been unavailable as a form of passive music listening through particular alpha music rhythm.

Purpose: To examine the additional effect of Alpha music rhythm on cognition and upper limb motor recovery in individuals with chronic stroke.

Methodology: 32 individuals with chronic stroke were conveniently selected and randomly divided into two groups (n=16). Experimental group received alpha music rhythm along with conventional therapy and control group received conventional therapy alone for 5 days per week for 4 weeks. Montreal Cognitive Assessment Scale (MOCA) and Fugl-Meyer Assessment for Upper Extremity (FMA-UE) were used to assess changes between baseline and post intervention.

Result: Additional effect of alpha music rhythm along with conventional therapy was showing significantly greater change in cognition and upper limb motor performance than only conventional therapy intervention. The average improvement between group I and group II for MOCA is 3.875. The average improvement between group I and group II for FMA is 8. In experimental group, significant changes in cognition and upper extremity recovery ($p<0.05$) with 95% confidence interval was found.

Conclusion: Additional effect alpha music rhythm along with conventional therapy enhanced cognition and also improved upper limb motor recovery in individuals with chronic stroke.

Key words: Stroke, Music Therapy, Alpha Rhythm, Cognition, Montreal Cognitive Assessment Scale (MOCA) and Fugl-Meyer Assessment for Upper Extremity (FMA-UE)

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Impact of smartphone-based virtual reality programmes on balance in patients with chronic hemiplegia

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Background and objectives: Impairments in hemiplegic patients increase the risk of falls among stroke patients. Virtual reality (VR) as a novel technology is rapidly becoming a popular intervention for improving balance. VR can visualize computer-generated environments with a full field of view through Head-mounted displays (HMD-VR). This study was conducted to assess and investigate the effect of balance exercises with smartphone-based virtual reality programs on balance in stroke patients.

Methods:30 subjects were selected randomly and met the inclusion criteria and were enrolled, assigned, and received intervention. Subjects were given balance exercises with smartphone-based virtual reality along with conventional physiotherapy. The intervention protocol was for 4 days/ week for 4 weeks period.

Results: Following 4 weeks of intervention showed improvement in postural control and balance which was assessed using BBS and BESTest. Paired t-test was used to differentiate the mean significance. The mean pre- to post-intervention difference is 12.6 with a p - value< 0.05. The mean BESTest pre- to post-intervention difference is 11.467 with a p - value < 0.05. The result of this study showed a significant difference in pre- and post-treatment.

Conclusion: The study concluded that balance exercises with smartphone-based virtual reality program is effective in improving balance in chronic stroke patients along with conventional interventions.

Systematic Review: The Effectiveness of Transcranial Direct Current Stimulation (tDCS) Paradigms as Treatment Options for Recovery of Language Deficits in Chronic Post-Stroke Aphasia

Rahul Sharma (CRC, Physiotherapist, AIIMS, New Delhi)

Chronic post-stroke aphasia (PSA) significantly impacts communication abilities and quality of life. Transcranial Direct Current Stimulation (tDCS) has emerged as a non-invasive neuromodulatory technique with potential to enhance language recovery in PSA patients. This systematic review evaluates the effectiveness of tDCS paradigms in improving language deficits in individuals with chronic PSA, with a focus on stimulation parameters, treatment outcomes, and underlying mechanisms. Findings indicate moderate evidence for the efficacy of tDCS in specific language domains, but variability in outcomes highlights the need for standardized protocols and further exploration of individual differences.

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Effect of Virtual Reality in improving physical function of stroke patients

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Background: Stroke survivor has a poor quality of life and large dependent on their activities of daily living (ADL). Rehabilitation of motor function is a prerequisite for enhancing quality of life in stroke patients. A more novel approach to the rehabilitation which is gaining attention in recent times is virtual reality (VR) training.

Aim of the study: To find out the effectiveness of VR training on improving the Physical function (PF) of stroke patients.

Methodology: Study Design: Randomized Controlled Trial – parallel group design with an allocation ratio of 1:1. Study Setting: Department of Bethany Navajeevan College of Physiotherapy, Thiruvananthapuram. Sixty stroke patients were selected for the study. Eleven patient got discontinued from the training. Out of 49 patients 24 patients were randomly assigned to a VR training experimental group (Group A) and 25 patients were assigned to a Motor Relearning Program, control group (Group B). The intervention was provided for 1 hour in a session, 5 days in a week. The training was given for a total of six weeks. The training dosimetry was similar to both the groups. Assessment was taken before the beginning and after 6 weeks of intervention. Fugl Meyer Assessment Scale was used as the outcome measure to assess the improvement of PF.

Results: The mean difference in the improvement of FMA – UE Total motor score in group A was 11 ± 1.72, whereas it was 6.52 ± 1.12 in group B. The mean difference in the improvement of FMA – LE Total motor score in group A was 8.21 ± 1.32, whereas it was 5.56 ± 0.77 in group B. The improvement in PF after VR training was 77%, whereas in MRP it was 23%.

Conclusion: It is concluded that VR training is an effective method in improving performance based physical function evaluated by Fugl-Meyer assessment in stroke patients.

Key Words: virtual reality (VR), Fugl Meyer Assessment (FMA), Upper extremity (UE) Lower extremity (LE) and Motor relearning program (MRP).

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Biopsychosocial Perspective on Chronic Stroke (CS) Rehabilitation with Hemiplegic Shoulder Pain: A Case Report

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Background: In India, the stroke is the fourth most common cause of death. Stroke impairments include hemiplegia, sensory loss, dyspraxia, and hemianopsia. The chronic phase of stroke is defined as six months and beyond post-stroke. Nearly 16-84 % of stroke cases experience HSP. The purpose of this case report was to create an example of rehabilitation using integrated use of various physiotherapeutic interventions and functional approach for a patient with CS impairments suffering with HSP.

Case Description: A 38-year-old male, with right- sided dominancy, a driver by occupation had stroke. Complex medical history included large subacute infarct in left MCA territory and significant midline shift.

Intervention and Results: The comprehensive and integrated approach was used focusing on Biopsychosocial Model to help patient recover fully. A blend of Kinesio Taping, Electrotherapy, Gait Training, Techniques of PNF and MRP, Balance and Coordination training, Progressive Exercises, Cardiovascular Endurance, Manual Therapy, Mobilization; Capsular Stretches and General Selective Stretching was done. The patient showed improvement in pain parameters, function, balance, ambulation and overall well-being. HSP was resolved by the use of integrated approach.

Discussion and Conclusion: The use of KT with HSP has been shown to be beneficial in some literatures. Literature on electrotherapy has mixed reviews. We included use of NMES for 4 weeks resulted in improvement of symptoms of patient. Use of BPS model recovered case in all aspects of well-being and health. The patient showed improvements in Barthel Index Scores, SDRS and DASS scores. A functional strengthening program appears to have been beneficial for patient with multiple comorbidities.

Keywords: Stroke; Hemiplegic Shoulder Pain; Biopsychosocial Model; Rehabilitation; Kinesiotape

EFFECT OF INSPIRATORY MUSCLE TRAINING ON AUTONOMIC NERVOUS SYSTEM IN CERVICAL SPINAL CORD INJURY INDIVIDUALS

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Background: Spinal cord injury (SCI) leads to significant motor, sensory, and autonomic dysfunction, increasing the risk of cardiovascular and respiratory complications, particularly in cervical and thoracic injuries. Demonstrating a link between inspiratory muscle training (IMT) and improved cardiac autonomic control could reinforce the importance of respiratory care in rehabilitation.

Objective: This study aims to investigates the effects of IMT on cardiac autonomic regulation in patients with acute cervical SCI.

Methods: Twenty-eight patients were divided into two groups; experimental (Group-A) and control (Group-B) using convenient sampling. A 4-week IMT program was conducted, with baseline and post-intervention assessments of the tilt table test, heart rate variability (HRV), and pulmonary function tests (PFT). Statistical analysis was performed using SPSS version 22, employing paired t-tests and independent t-tests for normally distributed data and Wilcoxon signed-rank and Mann-Whitney U tests for non-normal data.

Results: The mean ages of participants were 31.41 and 39.84 years in the two groups. Significant improvements were observed in tilt table test results and PFT parameters, including maximal inspiratory pressure (MIP), maximal expiratory pressure (MEP), and forced expiratory volume in 1 second (FEV1). Clinically meaningful changes were also noted in HRV findings, highlighting enhanced autonomic regulation.

Conclusion: IMT led to improved cardiac autonomic regulation and pulmonary function in patients with cervical SCI. These findings underscore the value of respiratory care in reducing cardiovascular risks and enhancing quality of life in SCI rehabilitation.

Keywords: Inspiratory muscle training, autonomic dysfunction, HRV, spinal cord injury

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Effect of Massage Therapy on Sleep Quality in patients with Coronary Artery Bypass Graft Surgery: A Systematic Review

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Introduction: The prevalence of cardiovascular diseases (CVDs) in India is rising due to urbanization, sedentary lifestyles, and an aging population, accounting for over 25% of national mortality. This increase has led to greater demand for cardiac surgeries with common post-operative challenges on sleep quality. Massage therapy is a promising non-pharmacological intervention to improve sleep quality and overall health of the patient. This systematic review evaluates the efficacy of Massage therapy compared to standard post- operative care practices.

Objective: The present review aims to evaluate the effect of Massage therapy on Sleep Quality in patients recovering from CABG.

Methods: A systematic search was conducted across PubMed-Medline, ScienceDirect, Google Scholar, Web of Science, and the Cochrane Library for studies published between 2019 and 2024. Out of 10,418 articles, five met the eligibility criteria, demonstrating positive effects of massage therapy on sleep quality in post-operative CABG patients. Included studies were randomized controlled trials and quasi-experimental designs in English language, focusing on adults (>18 years) who underwent CABG, were hemodynamically stable, had LVEF greater than or equal to 35%, intubation less than or equal to 24 hours.

Risk of Bias Assessment: The Pedro risk of bias assessment tool was used.

Results: Massage therapy showed beneficial effects on post-operative Sleep Quality in patients with Coronary Artery Bypass Graft Surgery.

Conclusion: Massage therapy demonstrated significant positive effects on sleep quality in patients recovering from Coronary Artery Bypass Graft (CABG) surgery, showing promise as a non-pharmacological intervention to improve post-operative patient recovery and well-being.

Keywords – Massage therapy, Sleep quality, Cardiac Surgery, Coronary artery bypass

IMPACT OF AEROBIC EXERCISE VS RESISTED EXERCISE PROGRAM AMONG MIDDLE AGED MEN WITH CARDIOVASCULAR RELATED RISK FACTORS

Narendiran B (MPT Student, SBV, Pondicherry)

Background: Cardiovascular diseases (CVDs) pose a significant health burden globally, particularly affecting middle-aged men. Lifestyle interventions, including aerobic and resistance exercise, have shown promise in mitigating CVD risk factors. However, comparative studies on the efficacy of these exercise modalities in middle aged men with CVD risk factors are limited. Method: A quasi-experimental study was conducted involving 50 middle-aged men with documented CVD risk factors, who were randomly assigned to either a moderate intensity aerobic exercise group or a high-intensity resistance exercise group. Participants underwent an 8-week supervised exercise intervention, after which blood pressure and waist-to-hip ratio were measured as primary outcome measures. Result: Both aerobic and resistance exercise groups demonstrated significant reductions in blood pressure and waist circumference. However, the resistance exercise group exhibited greater reductions in systolic and diastolic blood pressure, as well as waist circumference, compared to the aerobic exercise group. Waist-to-hip ratio showed no significant change in either group. Conclusion: High-intensity resistance training appears to be more effective than moderate-intensity aerobic exercise in improving cardiovascular risk factors, including blood pressure and central adiposity, in middle-aged men with CVD risk factors. Incorporating resistance training alongside aerobic exercise may optimize cardiovascular health outcomes in this population.

Keywords: cardiovascular diseases, middle-aged men, aerobic exercise, resistance exercise, blood pressure, waist-to-hip ratio

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ASSOCIATION OF BODY COMPOSITION WITH CARDIOVASCULAR FITNESS, ENDURANCE, FLEXIBILITY AND STRENGTH AMONG COLLEGIATES

Smriti Singh (BPT), Savita Tamaria (Asst Prof, DPSRU, New Delhi)

INTRODUCTION- The importance of physical fitness is widely acknowledged for its role in overall well-being, yet many students today lead sedentary lifestyles, compromising their physical health. This study aimed to explore the relationship between various components of physical fitness such as flexibility, strength, cardiovascular fitness, muscular endurance and body composition.

METHOD- A cross-sectional study was conducted with 125 participants, selected through convenience sampling based on predefined inclusion and exclusion criteria. Each participant provided demographic information and medical history to ensure their suitability for the fitness assessments. The tests included body composition analysis using a bioelectrical impedance analyzer, muscular strength assessed via planks, flexibility measured with the sit-and-reach box, endurance evaluated with partial curl-ups, and cardiovascular fitness tested using a cycle ergonometer (YMCA protocol). Data analysis was performed using SPSS software, versions 24 and 26.

RESULT- The study found a significant correlation between body composition and physical fitness components. BMI showed no correlation with endurance, flexibility, or strength, but a negative correlation with VO2 max. Body fat percentage negatively correlated with endurance, strength, and VO2 max, but not flexibility. Skeletal muscle mass positively correlated with endurance, flexibility, and strength, and negatively with VO2 max.

CONCLUSION- Results of the study showed a correlation between body composition and the physical fitness component.

Keywords- BMI, Body fat percentage, skeletal muscles mass, waist hip ratio, Muscular strength, Muscular endurance, flexibility, VO2 max

Correlation between Sub maximal Aerobic Capacity, Sleep Quality And Wheelchair skills in SCI individuals maneuvering manual wheelchair - A Pilot study

Rimsha Siddiqui (Asst Prof, ISIC, Delhi), Shagun Thakur (MPT Student)

Background : Wheelchair skills and fitness are vital and inter-related in spinal cord injury (SCI) individuals maneuvering manual wheelchair. There is a dearth of researches focusing on the extent and nature of the relationship between them. This study aims to find the extent of the degree of relationship between Sub maximal aerobic capacity, quality of sleep and wheelchair skills of manual wheelchair users with SCI.

Methodology: This is an ongoing trial with 15 participants (n=15) included in the study, with level of injury below T1 level. Wheelchair Skills were recorded with the help of Wheelchair Skills Test Questionnaire (WST Q), Sub maximal aerobic capacity (VO2 max) was assessed with help of Six Minutes Push test and sleep quality was measured with the help of Pittsburgh sleep quality index (PSQI) .

Results: Median age of 15 participants was 39.5. Median percentage of WST Q Capacity, Confidence and performance recorded was 70.5%, 71% and 72% respectively. Pearson correlation of wheelchair skills and sub maximal oxygen consumption was highly correlated and statistically significant ($r= .862$, $p<.001$). Pearson correlation of wheelchair skills and quality of sleep was found moderately correlated and statistically significant ($r= -.486$, $p<.001$).

Conclusion: These findings indicate high positive correlation between the wheelchair skills and sub maximal oxygen capacity and moderate correlation between wheelchair skills and sleep quality. These finding suggest that both wheelchair skills training and exercise training are important during the rehabilitation of people with spinal cord injury and either of them alone is not sufficient.

Keywords: Spinal Cord Injury, Wheelchair Skills Test Questionnaire, Six minutes push test

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EFFECTIVENESS OF RESPIRATORY NEUROPHYSIOLOGICAL FACILATATORY TECHNIQUES AND WEANING PARAMETERS IN MECHANICALLY VENTILATED PATIENTS

Nathera Begum S (MPT Student, SBV, Pondicherry)

BACKGROUND: Neurophysiological Facilitatory technique (NPF) of respiration is used to improve chest wall mobility and improve chest expansion. Intercostal stretch and anterior basal lift techniques of NPF tend to improve ventilation by reflexive activation of stretch receptors in patients with Organophosphorus Poisoning.

OBJECTIVE: To study the effectiveness of Respiratory NPF on selective parameters in weaning criteria and to compare its effects with Conventional Chest Physiotherapy (CPT) in mechanically ventilated patients.

METHODOLOGY: A purposive sampling method was used to recruit 60 male patients in mechanical ventilation (SIMV/ CPAP) were included based on selection criteria from Intensive Care Unit, Mahatma Gandhi Hospital, Pondicherry. Patients were randomly allocated into two equal (n1=15; n2=15) groups. Group A received NPF techniques whereas Group B received CPT for 5 consecutive days.

CONCLUSION: Statistical analysis showed that there was significant improvement in all outcome measures after application of NPF Techniques- Tidal volume [p=0.006], Heart Rate [p=0.001], Respiratory Rate [p=0.038] were statistically significant.

KEY WORDS: Organophosphorus poisoning, Mechanical Ventilator, Weaning , Respiratory NPF

EFFECTS OF MANUAL DIAPHRAGMATIC RELEASE AND PURSED LIP BREATHING AMONG CHILDHOOD ASTHMA

Sarangan K K (MPT Student, SBV, Pondicherry)

BACKGROUND: Manual non-invasive respiratory techniques and breathing exercise have traditionally been used to treat respiratory pathologies. The aim of this study was to analyse the effects of the manual diaphragmatic release technique and pursed lip breathing in childhood asthma.

METHODS: Using a quasi-experimental design, 30 childhood asthma were allocated to undergo the diaphragmatic release technique (n-15), pursed lip breathing (n-15). FVC, FEV1, and ACT were assessed before and after 12 treatment sessions that were conducted over non-consecutive days in a 4-week program. RESULTS: After 12 treatments session, the change in the FVC, FEV1, and ACT for each group was significantly different from the other groups. Compared with the diaphragmatic release technique was associated with a significant improvement in FVC ($p<0.0001$), FEV1 ($p<0.0001$) and ACT ($p<0.0001$). The pursed lip breathing showed significant differences. CON

CONCLUSIONS : The diaphragmatic release technique and pursed lip breathing were helpful interventions that could be used to alleviate the symptoms of childhood asthma. Based on this study the diaphragmatic release technique was a potentially more effective intervention.

Key words: Asthma, diaphragmatic release technique, pursed lip breathing, FVC, FEV1

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IMMEDIATE EFFECTS OF CHEST PHYSIOTHERAPY ON CARDIORESPIRATORY PARAMETERS OF MECHANICALLY VENTILATED NEONATES

Leesha Shah (MPT student), Dhwani Chanpura (Assoc Prof, Sumandeep Vidyapeeth, Vadodara)

BACKGROUND:- In NICU, neonates who all are on mechanical ventilator, Chest physiotherapy is often utilized to manage respiratory conditions commonly seen in premature infants or those with respiratory distress syndrome (RDS), bronchopulmonary dysplasia (BPD), pneumonia, or other respiratory issues. Premature infants are particularly susceptible to respiratory problems due to underdeveloped lungs and respiratory muscles.

METHOD:- Forty neonates, who were on ventilator were taken in the study from neonatal intensive care unit (NICU), Dhiraj general hospital, Vadodara, between the period from November 2023 to august 2024. All the included neonates were given chest physiotherapy in a form of percussion, vibration, postural drainage followed by suction. All the neonates were assessed pre and post with the outcome measure of Silverman Anderson score and vitals- pulse rate, respiratory rate, oxygen saturation. After the treatment immediate effects was seen on all outcome measures at 1 minute and 5 minutes.

RESULT:- Statistically significant difference (<0.05) was found between pre- and post-intervention measurements in Pulse Rate, Respiratory Rate, Oxygen Saturation and respiratory efforts.

CONCLUSION: This study suggests that chest physiotherapy had a measurable effect on the respiratory parameters and observable improvement on respiratory distress.

KEYWORDS:- chest physiotherapy, NICU, preterm, low birth weight, Respiratory Distress Syndrome, mechanically ventilated

The Power Of Breath: Pranayma's Impact On Lung Health And Cognitive Function

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Background: Evidences show that lung function is associated with physical activity. Modern technology has made children more dependent on digital sources for study and entertainment leads to increased physical inactivity that contributes in reduced work of breathing and attention. Pranayama yogic Sessions should be implemented in schools to improve children's lung function and attention span in order to gain academic excellence.

Objective: To find out the effect of pranayama yoga on lung volumes, vital capacity and attention span in school going children.

Material and method: The participants were 65 school students between the age range of 10-15 years who were selected based on inclusion and exclusion criteria and were divided into 2 groups. The students of both groups were assembled and assessed for lung volumes and attention span. Group A (pranayama group) was trained to perform pranayama yoga 3 days a week for 4 weeks. Group B (control group) children were asked to perform daily activities. At the end of the 4 weeks post assessment of both the groups was assessed, documented and statistically analysed.

Result: Respiratory parameters (FEV 1, FVC/FEV 1 and PEFR) and Attention span of Group A were statistically significant compared to Group B with p value 0.01, 0.0002, 0.0008, 0.02 and 0.0004 respectively which was <0.05.

Conclusion: Pranayama yoga led to improvement in lung volumes, vital capacity and attention span in school going students. Hence all schools should implement this for the betterment.

Keywords: pranayama yoga, lung volumes, attention span

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EFFECT OF RESPIRATORY MUSCLE PROPRIOCEPTIVE NEUROMUSCULAR FACILITATION ON RESPIRATORY MUSCLE STRENGTH IN SPINAL CORD INJURY INDIVIDUALS-PILOT STUDY

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Background: Spinal cord injury (SCI) refers to damage to the spinal cord that results in impairments related to its function, along with some respiratory complications. Inspiratory muscle training (IMT) is the most commonly used technique to improve respiratory function in tetraplegia. Respiratory muscle proprioceptive neuromuscular facilitation (PNF) entails the application of manual stimulation to specific regions of the chest wall. Thus, this study aims to examine the combined effect of PNF and IMT in tetraplegics.

Methods: This pilot study (CTRI/2024/10/075261) involved 5 tetraplegic individuals (experimental group: n=3, control group: n=2). Baseline respiratory muscle strength was assessed, then participants were randomly assigned to receive either combined PNF and IMT (experimental group) or sham training (control group) for 4 sessions/week over 4 weeks. Post-intervention respiratory muscle strength was reassessed. The study was single-blinded, with an independent assessor for outcome measurement.

Results: The groups showed significant changes in respiratory muscle strength post intervention.

Conclusion: Combination of PNF and IMT may improve respiratory strength in SCI individuals.

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Effect of respiratory muscle training on cognitive function and social well-being of SCI patients

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Background: Spinal cord injury(SCI) is a common neurological insult with a high volume of evidence reporting substantial neuromuscular impairments along with cognitive impairments in individuals with SCI owing to psychological or somatic comorbidities, decentralized cardiovascular control, hypoxia, anoxia, autonomic dysfunction, sleep disorders such as obstructive sleep apnoea, body temperature dysregulation, alcohol abuse, and certain drugs.

Methodology: The research aims to study the effect of Respiratory Muscle Training(RMT) which consists of resisted diaphragmatic and thoracic motion, active cycle of breathing technique (ACBT) and inspiratory muscle training(IMT) for cognitive function and social wellbeing in patients using a SCI-Quality of Life (QOL) questionnaire.

Results: The study includes 84 SCI subjects within age group of 18-49, with injury level C3-C7, T1-T5. The study shows the intervention group showed statistically significant improvements: decrease in anxiety($p=<0.001$),depression($p=<0.001$) and increase in mobility($p=<0.001$),positive effect($p=<0.001$),self care($p=<0.001$),self care($p=0.019$) and wellbeing ($p=<0.001$) pre and post intervention as compared to the control group which underwent routine activities showed increase in anxiety and depression levels owing to increased dyspnoea and inability to participate in activities thus affecting their social wellbeing.

Conclusion: The study highlights the importance of RMT (ACBT,IMT, resisted thoracic expansion exercises and diaphragmatic motion) along with physical exercise regimens in SCI subjects to improve respiratory as well as cognitive function, social wellbeing. It is suggested that RMT should be included in SCI subject's rehabilitation progress.

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To assess quality of life and kinesiophobia 3 month after phase 2 cardiac rehabilitation of PTCA patients

Riya Bhanushali (MPT student, MGM, Chh Sambhajinagar)

Background: PTCA is characterized by a minimally invasive procedure to open blocked or stenosis of coronary arteries allowing unobstructed blood flow to myocardium. Assessing quality of life and kinesiophobia post-surgery and initiation of Phase II cardiac rehabilitation. Pre-treatment assessment using SF-12 Questionnaire and TAMPA scale and 3 months post-treatment assessment.

AIM: To evaluate the Quality of life and kinesiophobia after 1 week and 3 month of cardiac rehabilitation in PTCA patients.

OBJECTIVES: The purpose of the study was to find out changes in quality of life and kinesiophobia in PTCA patients after phase 2 cardiac rehabilitation at 3 months.

METHODOLOGY: Study design- Quasi Experimental study, subjects were selected based on inclusion and exclusion criteria with convenient sampling. Subjects with PTCA were taken and were assessed for SF-12 and TAMPA scale.

RESULT: Student t-test analysis was used to examine the outcome. . Here the pre-treatment mean score for PCS was 26.81 and after 3 months the mean score was 52.17. Here the pre-treatment mean score for MCS was 26.56 and post treatment mean score was 57.13. TAMPA scale at pre-treatment and 3 months post treatment using students' Paired t test. The score shows significant difference from 54.06 to 30.87.

CONCLUSION: The study concluded that there was improvement in SF-12 and TAMPA pre and post treatment at 3 month time period.

KEYWORDS: PTCA, SF-12, TAMPA, QUALITY OF LIFE, KINESIOPHOBIA.

Correlation between anthropometric parameters and pulmonary function in healthy young adults: A cross-sectional study

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Introduction: Pulmonary function testing is conducted to diagnose the presence of any airway diseases. Normative data for pulmonary function testing has been established in various studies. It is widely recognized that there is a significant relationship between pulmonary function and cardiovascular mortality.

Methods: The participants were explained the nature of the study and those who consented were made to sign an informed consent. The subjects meeting the inclusion criteria were enrolled on the basis of convenient sampling. Inclusion criteria include subject of any gender with age group of 15 to 29 years of age and having no history of smoking. Subjects having musculoskeletal, neurological, and psychological illness that can affect the outcome of the study were excluded from the study. Various anthropometric parameters and pulmonary function testing was conducted.

Results: Data was collected for 107 participants. Body Mass Index (BMI) of the subjects vary from as low as 15.04 to as high as 30.67. The age of the subjects was ranging from 17 to 29 years. The mean age of the subjects was 21.02 ±2.03. Resting Systolic Blood Pressure (RSBP) is positively correlated with weight and Body Mass Index (BMI).

Conclusion: Resting BP is closely associated with the weight, height and BMI. Body Surface Area (BSA) was highly correlated with height, weight, BMI and ratio of FEV1/FVC.

Keywords : lung function, Body mass index, forced vital capacity.

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Role of core muscle strengthening in improving dyspnoea and functional capacity in patients with Chronic Obstructive Pulmonary Disease (COPD)

Parijat Ghatak (PhD Scholar, Assam Downtown University)

Objective: This study aimed to evaluate the effectiveness of core strengthening exercises on dyspnoea and 6-minute walk distance (6MWD) in patients with chronic obstructive pulmonary disease (COPD).

Design: A pre-post experimental study design was implemented.

Participants: Thirty subjects with moderate COPD presenting with dyspnoea were randomized into experimental and control groups.

Methods: The experimental group underwent a four-week program comprising of isometric core strengthening exercises and diaphragmatic strengthening using sandbags. Participants reported to the therapist three times a week for exercise progression and follow-up. Outcome measures included dyspnoea and 6MWD. Statistical analysis involved unpaired t-tests for intergroup comparisons and paired t-tests for intragroup analysis.

Results: Post-intervention analysis demonstrated significant improvements within the experimental group. Mean 6MWD and dyspnoea showed significant improvement ($p < 0.05$).

Conclusion: Isometric core muscle strengthening effectively enhance functional capacity, as measured by 6MWD, and reduce dyspnoea in patients with COPD.

Keywords: COPD, Core Strengthening, Dyspnoea, 6-Minute Walk Distance.

EVALUATING VIRTUAL GAME-BASED BREATHING INTERVENTIONS TO ENHANCE PULMONARY FUNCTION IN INDIVIDUALS WITH COPD

Nithyasri (Asst Prof, KG College, Coimbatore), Manoj Abraham Manoharlal

BACKGROUND: Chronic Obstructive Pulmonary Disease (COPD) is a progressive respiratory condition characterized by chronic airflow limitation and reduced lung function, which often leads to decreased quality of life and increased morbidity. Virtual game-based breathing exercises represent a novel intervention, potentially increasing patient motivation and engagement in respiratory rehabilitation through interactive and enjoyable activities. This quasi-experimental study aims to evaluate the efficacy of virtual game-based breathing exercises on pulmonary function in patients with COPD.

METHODS: Thirty patients diagnosed with moderate-to-severe COPD (based on GOLD criteria) and meeting specific eligibility requirements were recruited for this study using a convenience sampling method. Participants were randomly assigned to one of two groups: Group A (n=15) received conventional breathing exercises, while Group B (n=15) participated in Virtual Game-Based Breathing Exercises. Each group received 30-minute sessions three times per week for 8 weeks. Pulmonary function was assessed using pre- and post-intervention measurements of Forced Vital Capacity (FVC), Forced Expiratory Volume in one second (FEV1), and the FEV1/FVC ratio.

RESULTS: Statistical analysis showed that the Virtual Game-Based Breathing Exercises group had significant improvements in FVC, FEV1, and FEV1/FVC ratio compared to the conventional exercises group.

CONCLUSION: The 8-week virtual game-based breathing exercises intervention resulted in significant improvements in pulmonary function among COPD patients. This intervention aligns with GOLD guidelines for respiratory rehabilitation and may serve as an engaging complement to traditional pulmonary rehabilitation programs for individuals with COPD.

Keywords: Chronic Obstructive Pulmonary Disease (COPD), Forced Vital Capacity (FVC), Forced Expiratory Volume in one second (FEV1), FEV1/FVC ratio, Pulmonary function tests (PFT)

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Reliability of AI-Based Comprehensive Knee Evaluation in Osteoarthritis Knee Patients- An Observational Study

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Background: Osteoarthritis (OA) is a prevalent degenerative joint disease that significantly impacts patients' quality of life. Traditional assessment methods often rely on subjective evaluations and can be time-consuming. Recent advancements in artificial intelligence (AI) offer the potential to enhance the accuracy and efficiency of knee evaluations. This study investigates the reliability of an AI-based comprehensive knee assessment tool- FITKNEES® specifically designed for knee assessment.

Methods: We conducted an observational study involving 50 patients diagnosed with knee OA, utilizing an AI-driven tool FITKNEES® to assess knee joint conditions based on clinical parameters and patient-reported outcomes. The tool's reliability was measured using inter- rater correlation coefficients, comparing AI-generated results conducted by three trained physiotherapist.

Results: Preliminary findings indicate high reliability for the AI-based tool, with inter-rater correlation coefficients exceeding 0.999. The significant F Tests ($p < 0.001$) further confirm the robustness of agreement across the raters. Patient feedback highlighted enhanced efficiency and ease of use in the evaluation process. The AI tool demonstrated an ability to accurately identify severity levels of OA, correlate with radiographic findings, and predict treatment outcomes.

Conclusion: The AI-based comprehensive knee evaluation tool shows promise as a reliable method for assessing knee OA, potentially enhancing diagnostic accuracy and treatment planning. Further studies are warranted to validate these findings across larger populations, various conditions of knee and diverse clinical settings.

Keywords: Artificial Intelligence, Knee Evaluation, Knee Osteoarthritis, AI- Based Knee Assessment.

PREVALENCE OF LOW BACK PAIN IN SCHOOL CHILDREN: AN OBSERVATIONAL STUDY

Chayanika Changkakoti (BPT Student, Chandigarh University)

Background: Low back pain (LBP) is acknowledged by the World Health Organisation as a major health issue, impacting individuals of all ages, including a growing at-risk demographic— school-aged children. Low back pain (LBP) can hinder mobility, diminish quality of life, and affect mental health. Notably, the non-specific variant of LBP, which does not have a clear structural origin, accounts for about 90% of all cases. This study examines the prevalence, pain intensity, and limitations in daily activities associated with non-specific low back pain among schoolchildren.

Methodology: This observational study was conducted in Northern India and involved a cohort of schoolchildren aged 11 to 16 years, all of whom had a normal BMI and no documented history of musculoskeletal or systemic conditions. A comprehensive pain assessment was conducted utilising the Numerical Pain Rating Scale, alongside the Hanover Functional Ability Questionnaire to assess the effects on daily functioning. Before initiating data collection, ethical approval and informed consent were secured to maintain the integrity of the research.

Results: Among the participants surveyed, 200 students (13.33%) indicated that they have experienced low back pain (LBP), with a gender breakdown of 82 boys and 118 girls. Pain intensity scores varied from 1 to 5, indicating moderate discomfort as measured by the Numerical Pain Rating Scale. Functional ability assessments indicated no significant correlation between pain severity and general activity limitations. However, specific tasks, such as reaching down or lifting, were more affected than routine activities, such as getting up from bed.

Conclusion: This study identifies a significant occurrence of non-specific low back pain (LBP) in school-aged children, which has a mild to moderate effect on their functional activities. The findings highlight the increasing need for early interventions within educational environments to avert the development of low back pain (LBP) and to enhance spinal health among young individuals. Considering the possibility of LBP continuing into adulthood, implementing targeted preventative measures may provide significant long-term advantages for this demographic.

Keywords: Low back pain, prevalence, school-aged children, pain intensity, functional activities, non-specific back pain, early intervention.

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Effects of mulligan mobilization for increasing range of motion and reducing pain in frozen shoulder

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Background: Frozen shoulder, medically known as adhesive capsulitis, is a debilitating condition characterized by pain, stiffness, and restricted range of motion in the shoulder joint. The Mulligan approach involves the application of sustained mobilization techniques while the patient performs specific shoulder movements. This approach aims to mobilize the restricted joint structures and restore normal biomechanics, thereby enhancing range of motion and reducing pain.

Methods: The cohort of 30 patients, diagnosed with frozen shoulder was recruited for the intervention study. Taken the pre assessment of pain and range of motion in effected shoulder joint and then three sessions of mobilization were given by the therapist to individual patients in a week and then post assessment was taken.

Results: The primary outcome measure will be the change in shoulder range of motion, assessed using goniometry, before and after the intervention period. Secondary outcome measures will include pain intensity measured on a numeric pain rating scale (NPRS), functional disability assessed using the Shoulder Pain and Disability Index (SPADI).

Conclusion: In conclusion, the Mulligan approach offers a highly effective, patient-centered, and non-invasive alternative for managing frozen shoulder. It significantly improves range of motion and reduces pain, often outperforming traditional treatment modalities such as passive stretching, corticosteroid injections, and medications.

Keywords: Frozen shoulder, Mulligan Mobilization, reducing pain, increasing range of motion.

Musculoskeletal disorders in clinical laboratory technicians – A review

Rina Sharma (MPT Student, Sumandeep Vidyapeeth College)

Background - Workplace musculoskeletal diseases (MSDs) are becoming an increasingly significant health concern. These disorders are significant concern for a number of reasons, including the social costs, decreased productivity at work, and health issues that result in worker disabilities. Laboratory workers run the danger of becoming hurt since they spend so much of their day sitting rigidly at a microscope and repeatedly rotating knobs to shift the stage and objectives while screening slides. People who are uncomfortable with their posture when looking through microscope eyepieces tend to lean forward and away from the chair's back, which causes their head, upper back, and lower back to tilt more than is healthy and can cause neck and back pain.

Objective - To evaluate the highest prevalence, risk factors, and impact of musculoskeletal disorders particular region in clinical laboratory technicians.

Method - Online databases such as Google scholar, pub Med, open Med and EBSCO, science direct, Europe PMC are systematically searched.

Result - The searching strategy uncovered 20 reports of which total 15 studies were included. 5 of them could not be reviewed as Full text.

Conclusion - Out of all the available literature it has been found that the most of the musculoskeletal disorders are prevalent in the neck/cervical & lower back region of the body.

Keywords - WRMSD, Laboratory technicians, Pathological lab technician, postural deviation in Back/Upper back /Neck in lab technician.

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To see the effect of a physiotherapeutic approach in the management of fabella syndrome.

Pooja Chaurasia (MPT Student, MGM School of PT, Chh Shambhajinagar)

Relevance: The fabella is a tiny, bean-shaped sesamoid bone that occurs in 8.5% of people, close to the lateral gastrocnemius muscles proximally. Patient presents with posterolateral knee pain worsens with extension and with pressure on the fabella site. Temporary and immediate fix can be manual treatment. Also Taping, PEMF, cross education has showed promise in treating disorders involving bone and cartilage.

Case Description: We presented three cases of fabella syndrome who came to our outpatient department. All the three patients was having pain on the posterolateral aspect of knee radiating to lower leg and no improvement on medications.

Methodology: Intervention aimed at reducing pain, increasing mobility and strength. It included the evidence based physiotherapeutic approach including pulsed electromagnetic field therapy, Fabella and soft tissue mobilization, taping, core strengthening, cross education effect. The protocol was delivered for 4 weeks daily.

Analysis: VAS for measuring the pain intensity, KOS for disability, LEFS for functional status. All measurements were taken pre and post treatment.

Results and Implication: The newly designed evidence based protocol is an effective applied and proofed treatment and it will help people to manage their pain in short term and long term and will reduce the pain and disability.

Conclusion: The physiotherapeutic approach is an effective treatment in the management of fabella syndrome.

Keywords: Fabella syndrome, PEMF, Physiotherapeutic approach.

A Case Study on Physiotherapy Guidelines post Decompression Surgery of Lumbar Spine

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Spinal fixation surgery is a method in which the sections of the spine are surgically settled in a steady position utilizing equipment such as plates, screws, cages, bars and more. A negligibly intrusive spinal obsession strategy employs a littler cut than an ordinary surgery for the same result. The spinal column is made of numerous bones known as vertebrae, that stack on each other. Age-related changes, injury or restorative conditions and may cause your vertebra to move from their typical position and influence the encompassing nerves, muscles and tendons, causing serious torment and distress. Here, we display a case report of a 55-year-old female, who came from Iraq to India for Spinal Fixation in an upscale neuro-rehabilitation setup at Gurugram, Haryana. The patient came with complaint of numbness in both leg and dull aching pain in lower back. The MRI and Xray revealed decompression surgery at D10-S1 vertebra with symptomatic paraparesis. The subsequent rehabilitation procedure considerably improved the Gait and Balance of the patient. This case details the decompression surgery of lumbar spine with complication of paraparesis and subsequent rehabilitation plan to manage functional disabilities and psychomotor dysfunction. Motor stimulation of agonist and antagonist muscles of tibialis anterior and gastrocsoleus muscle helped the patient regain their motor function considerably faster than the traditional rehabilitation plan.

Keyword: - Spinal fixation surgery, rehabilitation, physical therapy, Laminectomy, Pedicle Screw Fixation, Paresis, Scoliosis (acquired).

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EFFECT OF POSTURAL CORRECTION EXERCISES FOR FORWARD HEAD POSTURE IN SMARTPHONE USERS : A LITERATURE REVIEW

Rani C Reji (MPT Student, NITTE, Mangalore)

BACKGROUND: Forward head posture is referred as excessive anterior positioning of head in relation to vertical line. Impairment in the biomechanical changes in the muscles and ligaments of the neck are the causes of forward head posture. Forward head posture is referred as excessive anterior positioning of head in relation to vertical line. This condition is surveyed in people with forward bending of the cervical vertebrae and excessive extension of upper cervical vertebrae. Frequently observed in individuals using smartphones for prolonged periods cause cervical deviation or abnormal alignment of head and neck resulting in FHP. Physiotherapists use variety of techniques to prevent FHP. In which 1st line treatment is postural correction exercises.

OBJECTIVE: The purpose of this study is to identify the effect of postural correction exercises for FHP in smartphone users.

METHODS: An extensive-literature search was done from 2015-2023 using databases-PubMed, google scholar, web of science, and science direct.

RESULTS: A total of 95 articles were found through the search, and 23 articles were chosen through the bibliography search since they were pertinent and contained the keywords. 12 articles that met the criteria are examined.

CONCLUSIONS: We draw the conclusion from the literature review that the posture correction exercise is a successful method of lowering FHP.

KEYWORDS: Forward head posture, postural correction, smartphone

Effects of Shock Wave Therapy on Pain and Performance in High Jumpers with Plantar Fasciitis- An Experimental Study

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OBJECTIVES : Plantar fasciitis affects athletic population such as runners, jumpers and also middle-aged women who are overweight. The condition is characterized by pain and inflammation at the heel and medial arch of the foot. Usually, plantar fasciitis is treated with conservative methods like stretching, joint and soft tissue mobilization, ultrasound, but it takes prolonged recovery time. Thus, for a faster recovery an experiment is done by providing a non-invasive procedure through therapeutic modality like shock wave therapy.

METHOD : The study included 29 High jumpers according to inclusion criteria after that shock wave therapy was given, afterwards pre- and post- intervention were documented on the day 1 and the 20th day of the treatment.

RESULT : Study shows significant results where p value is < .00001. Also, there is substantial improvement in the vertical jump test performance and an improvement in pain modulation after 20 days of shock wave treatment on alternate days.

CONCLUSION : The present study demonstrates that shock wave therapy is effective in improving jumping performance and reducing the intensity of pain in High Jumping Athletes. Our study highlights that shock wave therapy is better intervention for plantar fasciitis if conservative measures fails and for those who are reluctant to the surgery.

KEY WORDS : Shock Wave Therapy, Plantar Fasciitis, High Jumpers, Pain Management.

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Title: Employee well-being - A hollistic approach in treating the CVA angle of prolonged computer usage: A case study

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Background and Purpose: With the widespread use of electronic devices, particularly computers and smartphones, issues like Forward Head Posture (FHP) have become common. FHP is linked to muscle imbalances and postural strain, often leading to neck pain, headaches, and reduced functional capacity. The purpose of this study was to assess whether the addition of work-posture management exercises to a conventional exercise regime could improve cranio-vertebral angle (CVA) and reduce neck pain in a chronic computer user with FHP.

Study Design: This was a single-case study involving one participant. A musculoskeletal assessment was performed before the intervention. The participant completed a combination of strengthening and stretching exercises four times per week. Exercises were progressed as the participant achieved correct form in 12 repetitions per set.

Methods: CVA and Neck Disability Index (NDI) were used to measure the participant's condition before and after the intervention. The exercises aimed to improve posture, alleviate pain, and enhance functional capacity.

Results: Post-intervention assessments showed significant improvements. The NDI indicated reduced functional limitations, and the CVA measurement, using "Kinovea" software, showed a noticeable increase in the cranio-vertebral angle.

Conclusion: The addition of work-posture management exercises to a conventional exercise program effectively increased CVA, reduced neck pain, and improved functional activity in a chronic computer user with FHP.

KEYWORDS: Forward Head Posture, Work Posture Management Exercise, Neck Disability Index, Craniovertebral angle.

A STUDY TO COMPARE EFFECTIVENESS OF MUSCLE ENERGY TECHNIQUE AND MYOFASCIAL RELEASE TECHNIQUE AMONG SUBJECTS WITH PIRIFORMIS TIGHTNESS IN STUDENTS OF UKA TARSADIA UNIVERSITY

Vishami Prajapti (MPT Student, SS Agrawal Institute of PT)

Introduction: Muscle Energy Technique (MET) and Myofascial Release (MFR) are effective manual therapy interventions that can help reduce piriformis muscle tightness, which often limits hip range of motion (ROM).

Aim: This study aimed to evaluate and compare the effectiveness of MET and MFR in treating piriformis tightness in students from Uka Tarsadia University.

Materials and Methods: Sixty subjects, aged 18-25 years, with piriformis tightness, were included in this study. Participants were assessed using the Piriformis Stretch Test and evaluated for hip rotational ROM (internal rotation [IR] and external rotation [ER]). The subjects were randomly assigned to two treatment groups: Group A received MET, and Group B received MFR. Assessments were conducted pre- and post-treatment to compare changes in ROM.

Results: Both interventions showed significant improvements in hip ROM. However, MFR produced superior results, particularly in increasing both IR and ER compared to MET. Statistical analysis demonstrated more pronounced improvements in ROM for Group B (MFR) than for Group A (MET).

Conclusion: The study concluded that both MET and MFR are effective in improving hip ROM and reducing piriformis muscle tightness. However, MFR demonstrated superior outcomes in enhancing hip rotational mobility. Given its greater effectiveness, MFR may be considered a more suitable treatment modality for addressing piriformis tightness and improving hip ROM in clinical practice.

Keywords: Muscle Energy Technique, Myofascial Release, Piriformis Tightness, Hip Range of Motion, Internal Rotation, External Rotation.

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"IMPACT OF SCAPULAR PROPRIOCEPTIVE NEUROMUSCULAR FACILITATION ON IMPROVING PAIN, STRENGTH AND DYNAMIC STABILITY IN SHOULDER IMPINGEMENT."

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Background : Shoulder impingement syndrome, characterized by compression of the rotator cuff tendons beneath the acromion, is often exacerbated by scapular dyskinesis and altered kinematics. Scapular Proprioceptive Neuromuscular Facilitation (PNF) has emerged as a vital rehabilitative strategy by anatomically reducing rotator cuff compression and to clinically re-educate muscle activation patterns,enhance neuromuscular control, target scapular stability, mobility, and proprioception to alleviate impingement and its associated pain.

Objective : To evaluate the impact of Scapular Proprioceptive Neuromuscular Facilitation on improving pain, strength and dynamic stability in shoulder impingement.

Methods : Full text articles from Pubmed, Google scholar and Science direct were screened. 5 articles based on PICO format consisting of five randomized control trials were retrieved and found eligible for this review.

ANALYSIS: Articles quality is analysed through Pedro scale and the articles with score above six were taken into consideration.

Results : The literature review stated that incorporating scapular PNF as a treatment intervention has a positive impact on overall pain, strength and dynamic stability in shoulder impingement.

Conclusion : A significant improvement was observed in pain ,scapular muscle strength and overall dynamic stability following the intervention, which concludes that including Scapular PNF has a potential effect on Shoulder impingement.

Keywords : Scapular PNF, Proprioceptive neuromuscular facilitation, Shoulder impingement, Subacromial impingement.

TITLE: "Investigating the Various Graft Options Available for Anterior Cruciate Ligament Reconstruction Surgery: A Literature Review"

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1 Postgraduate student 2 Associate professor, PhD Nitte Institute of Physiotherapy

PURPOSE: The incidence of anterior cruciate ligament (ACL) injuries in India is around 86% and return to sports after an anterior cruciate ligament (ACL) reconstruction is between 40%-86%. Risk factors for ACL reconstruction graft failure include younger age, increased activity level, nonanatomic tunnel placement, and the use of graft choice. Among these, the most easily modifiable risk factor is graft choice. This review aims to investigate various grafts available for ACL-R and which one has a better functional outcome post-surgery.

METHOD: Full-text articles in English dated from 2015-2024 were screened across multiple databases such as Google Scholar and PubMed that investigated the comparison of various grafts used for ACL-R surgery on functional outcomes.

ANALYSIS: All the Studies reviewed have taken knee strength, Patient-reported outcome measures (PROMs eg. IKDC), and functional tests in patients undergoing ACL-R.

RESULT: Five studies were included three studies showed no graft selection impacts knee functional level after 24 months of post-surgery, and two studies have shown better results for hamstring tendon grafts.

CONCLUSION: The persistent isokinetic strength deficits IS related to the location of graft harvest—quadriceps strength deficits more in the Quadriceps tendon graft (QTG) which persisted for 12 months, hamstring strength deficits were greater in the Hamstring tendon graft (HTG) persisted for 24 months. Functional capacity was lower for QTG but favors the HTG and PROMs were unaffected by graft type but impaired compared to healthy controls.

KEYWORDS: Anterior cruciate ligament reconstruction, graft choice, graft failure, return to sports.

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PHYSIOTHERAPY APPROACHES IN PATIENTS WITH FLATFOOT –A REVIEW

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BACKGROUND-Flatfoot is a prevalent foot ailment that impacts a significant portion of the adult population, ranging from 2% to 23%. This condition is marked by the partial or complete collapse of the medial longitudinal arch, accompanied by rearfoot eversion and forefoot abduction. Primarily, this condition can be dealt by doing changes in the foot-ware as adding insoles and/or any other alterations. Exercises and symptoms relieving drugs also plays important role in subsiding the symptoms. Therapies include activity adjustment, suitable footwear and orthotics, exercises, medication. Different exercises like toe towel curls, "short-foot exercise (SFE)" are utilized to prevention purpose and to increase the power of soft tissue. Physiotherapy treatment approaches can be effective in patients with flatfoot to decrease pain, improve foot function index.

OBJECTIVE- To appraise all the scientific literature to find clinical applicability and efficacy of treatment in flatfoot.

METHOD- Online databases such as Pubmed, Google Scholar, PEDRO were systematically searched with the keywords "Flatfoot", "Pes Planus", "Physiotherapy Management", "non-surgical management".

RESULTS- 60 studies were initially identified out of which 50 records were screened with the inclusion criteria. Full text assessed for eligibility were 40 whereas total 30 articles were excluded after the analysis of titles/abstracts.

CONCLUSION- The findings of the review reveal that short foot exercise alone, short foot exercise combined with neuromuscular electrical stimulation and taping techniques, putting additional insoles were found to be as an effective treatment strategies in patients with flatfoot

Keywords- Flatfoot,Pes planus, Physiotherapy management.

Assessing the Benefits of Kinesio Taping on Pain and Balance in Grade III Knee Osteoarthritis: A Randomized Controlled Study

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Background: Knee osteoarthritis (OA) is a chronic knee joint condition marked by discomfort, crepitus, limited motion, and impairment. According to Kellgren-Lawrence Classification, Grade III OA features multiple osteophytes, joint space narrowing, sclerosis, and possible deformity in X-ray. Kinesio tape helps to reduce discomfort, correct joint positioning, enhance proprioception, and support tissue repair. Therefore, the purpose of the study was to assess the benefits of Kinesio Taping in patients with Grade III Knee Osteoarthritis.

Methods: In this single-blinded study, 14 patients were randomly distributed into two groups. Group A (n=7) received Kinesio Taping, and Group B (n=7) received Sham Taping for 4 sessions over 2 weeks. Supervised exercise program was given in both groups for 10 sessions (5 sessions per week). Patients were evaluated for pain intensity by Numerical Pain Rating Scale (NPRS), and Balance by Timed Up and Go (TUG) Score at baseline, and end of the 10th session.

Result: Within-group analysis on NPRS and TUG Score showed significant improvement ($p<0.05$) in Group A and non-significant improvement ($p>0.05$) in Group B. Between-group comparisons showed significant difference in NPRS with mean difference of 3.14±0.89 ($p<0.05$) and non-significant difference with mean difference of 2.98±1.45 seconds ($p>0.05$) in TUG Score.

Conclusion: The study suggests that Kinesio Taping effectively benefits in improving pain, and balance in Grade III Knee OA.

Keywords: Knee Osteoarthritis, Kinesio Taping, Sham Taping, NPRS, TUG

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EFFECT OF THORACIC MOBILIZATION ON PAIN, RANGE OF MOTION AND FUNCTIONS IN PATIENTS WITH LUMBAR RADICULOPATHY: AN EXPERIMENTAL TRIAL

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Background: Lumbar radiculopathy is defined as burning, or sharp electric pain in low back that radiates down the legs. Due to excessive movement of the lumbar spine there is compensatory motion reduction of the thoracic segments. Reduction in thoracolumbar mobility is highly correlated in low back pain than mobility of the lumbar spine. As per literature, mobilization of adjacent segments can benefit such patients with thoracolumbar hypomobility. Therefore, Thoracic Mobilization may also effectively help in stabilization of lumbar spine.

Methods: Total seven (2 males and 5 females) lumbar radiculopathy patients, conformed as per inclusion and exclusion criteria were included. Thoracic Mobilization along with Moist Hot Pack and Supervised Exercises were given for 10 sessions, 5 sessions per week for 2 weeks.

Outcome measures: Pain by Visual Analogue Scale, Lumbar Range of Motion (ROM) by Modified Modified Schober Test and Function by Oswestry Disability Index.

Results: Paired Sample t-test on Pre and Post intervention analysis showed significant ($p \leq 0.05$) improvement on Pain (4.88 ± 1.33cm), Lumbar flexion (1.00 ± 0.63cm) and extension ROM (4.84 ± 0.53cm) and Function (40.42 ± 11.01%) on completion of intervention protocol.

Conclusion: This pilot trial concludes that Thoracic Mobilization is effective in decreasing Pain, increasing lumbar ROM and Function in patients with lumbar radiculopathy.

Keywords: Lumbar Radiculopathy, Thoracic Mobilization, Pain, Range of Motion, Function

Efficacy Of Culturally Sensitive Prehabilitation In Improving Post Operative Pain And Fear Of Movement In Individuals With Lumbar Degenerative Disc Disease – An Experimental Study

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Background: Lumbar degenerative disc disease (LDDD) causes chronic pain and limited mobility. Culturally sensitive prehabilitation respects diverse backgrounds, beliefs, and healthcare practices, enhancing treatment readiness and outcomes. Integrating this approach can improve patient engagement, adherence, and overall success in managing LDDD.

Aim: Evaluate the efficacy of culturally sensitive prehabilitation protocol in individuals who will undergo surgical intervention for LDDD

Objective : To analyze impact of culturally sensitive prehabilitation protocol in individuals on pain and fear of movement who will undergo surgery for LDDD

Methodology : This experimental study has 41 subjects were selected based on the inclusion and exclusion criteria using purposive sampling technique. Subjects with LDDD were selected. NPRS and TAMPA scale of kinesiophobia were used to assess pre and post measures for pain and fear of movement respectively.

Result : The intervention significantly reduced pain (NPRS: $p < 0.0001$) and fear of movement (TSK: $p < 0.0001$), indicating its effectiveness in addressing both pain and kinesiophobia. These findings have important implications for improving clinical outcomes and patient rehabilitation.

Conclusion: Culturally sensitive prehabilitation for LDDD promotes inclusive care, ensuring tailored support that respects diverse backgrounds and enhances patient outcomes. By integrating cultural awareness into treatment strategies, healthcare providers can foster trust and improve rehabilitation adherence among all patient populations.

Keywords: Lumbar Degenerative Disc Disease, pain, fear of movement, culturally sensitive prehabilitation.

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A Role of Neurodynamic Nerve Gliding in Enhancing Musculoskeletal Performance: A Narrative Review

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Background: Neurodynamic nerve gliding techniques are recognized for enhancing musculoskeletal function by improving nerve mobility, reducing neural tension, and modulating motor function through controlled movements. This review examines how these techniques address restricted neural mobility and increased sensitivity often found in nerve entrapment syndromes and radiculopathies.

Objective: To discuss neurodynamic nerve gliding's potential in relieving neural dysfunction symptoms, enhancing musculoskeletal performance, and its applications in rehabilitation and athletic settings.

Methodology: This narrative review analyzes human studies on neurodynamic interventions, including systematic reviews, randomized controlled trials, and narrative reviews, to evaluate their impact on neural mobility and musculoskeletal health. A thorough literature search was conducted across databases like PubMed, EMBASE, and MEDLINE, with additional hand searches to ensure a comprehensive review.

Results: Neurodynamic nerve gliding techniques show promise in enhancing nerve mobility, reducing tension, and managing symptoms associated with nerve entrapment and radiculopathies. Evidence suggests these techniques improve motor control, coordination, and proprioception, critical for efficient movement patterns and athletic performance in varied populations.

Conclusion: Neurodynamic nerve gliding techniques have significant potential for optimizing musculoskeletal care. This review emphasizes their therapeutic benefits, suggesting their integration in rehabilitation protocols to enhance patient outcomes in clinical and sports settings. Further research may expand their application and effectiveness in musculoskeletal health.

Keywords: Neurodynamic interventions, Neural mobility, Musculoskeletal health, Nerve gliding, Sliders, Tensioners, Randomized controlled trial, Comparative analysis, Intervention effectiveness, Range of motion, Pain levels, Outcome measures.

Activation Of Gluteus Maximus Muscle by Kneading Technique in College Students- An Experimental Study

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Introduction: The gluteus maximus muscle is a large, powerful muscle that plays a crucial role in allowing us to maintain an upright and erect posture. Specifically, it is located in the buttocks and essential for everyday movements, athletic performance, and stabilizing key joints, particularly the hip and lower back. However, the GM is prone to weakness and inhibition, which can lead to chronic pain and poor athletic performance and its dysfunction may be significant risk factor for injury or even a consequence of it. Therefore, to improve the stability and reducing the injury, their activation and strengthening is essential.

Methodology: In this study, 20 subjects were including with the age of 15-30 years and divided into two groups. Group A received gluteus maximus activation through a kneading technique combined with exercises, while Group B received activation through exercises alone. Subjects were assessed and selected based on specific inclusion criteria. Pre and post treatment strength measurements of the gluteus maximus were taken by using a dynamometer to assess the changes in muscle activation. The final scores were calculated to evaluate the effectiveness of the kneading technique in enhancing the gluteus maximus activation.

Results: There was statistically significant difference seen in values as the P value is less than 0.0001.

Conclusion: This study concluded that with kneading technique, there was muscle activation of the gluteus maximus seen in group A.

Keywords: Kneading technique, Gluteus maximus muscle, Muscle Activation Technique, Dynamometer and Activation exercises.

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Effect of Mulligan Manual Therapy of Cervical and Thoracic Spine on Forward Head Posture and Sleep Quality in individual with Mechanical Neck Pain: A Single Arm Randomised Controlled Trial

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BACKGROUND AND PURPOSE: Forward Head Posture (FHP) is one of the most common poor head postures seen in patients with neck disorders. Prevalence of Neck pain is reported to range from 43% to 66.7%, which increases along with aging. In Asia, the prevalence of forward neck posture is 66%. Manual Therapy (MT) is another form of conservative treatment for FHP. Sleep quality is a very important parameter that affects almost all physiological functions. Sleep disturbances are quite common in individuals with neck pain.

METHODOLOGY: 20 participants with neck pain participated in this single arm randomised controlled trial carried out in Department of Physiotherapy, JNU Hospital, Jaipur. The study was conducted between July 2024 and October 2024. After receiving informed consent and thorough explanation of the study methodology, subject were chosen for the study based on the screening criteria. The participants underwent Mulligan SNAG for cervical & thoracic spine. Forward Head posture was measured using Craniovertebral angle and sleep quality was measured using Pittsburg Sleep Quality Index (PSQI) at Day 0 and Day 21.

RESULT and CONCLUSION: The study shows subsequent positive effect on craniovertebral angle and sleep quality in individual with FHP. The ratio based data within the group was analysed using paired t-test where a statistically significant ‘p’ value was defined as less than 0.05.

KEYWORDS: forward head posture, Manual therapy, sleep quality

EFFECTIVENESS OF ULTRASOUND VERSUS NERVE AND TENDON GLIDING EXERCISE ON PAIN AND FUNCTIONS DISABILITY AMONG WITH CARPAL TUNNEL SYNDROME

Dhannush NK (MPT Student, SBV, Pondicherry)

INTRODUCTION: Carpal Tunnel Syndrome (CTS) is a common condition caused by median nerve compression within the carpal tunnel, resulting in pain, numbness, and functional disability. Effective management is essential to enhance quality of life. This study evaluates the effectiveness of ultrasound therapy versus nerve and tendon gliding exercises in reducing pain and functional disability in CTS patients.

OBJECTIVE: To compare the effects of ultrasound therapy and nerve and tendon gliding exercises on pain and functional disability in CTS patients.

METHOD: 60 participants with mild to moderate CTS were randomly assigned to two groups: Group A (ultrasound therapy) and Group B (nerve and tendon gliding exercises). Both interventions were conducted over 4 weeks, thrice weekly. Pain was assessed using the Visual Analog Scale (VAS), and functional disability was evaluated with the Disability of Arm, Shoulder, and Hand (DASH) score. Handgrip strength was measured using a dynamometer.

RESULTS: Group A demonstrated significant improvement in VAS and DASH scores compared to Group B, indicating greater effectiveness in reducing pain and improving functional outcomes. However, no significant improvement in handgrip strength was observed in either group.

CONCLUSION: Ultrasound therapy is more effective than nerve and tendon gliding exercises in alleviating pain and functional disability in CTS patients. While both interventions offer benefits, ultrasound may be preferred for comprehensive symptom management.

KEYWORDS: Carpal Tunnel Syndrome, Ultrasound Therapy, Nerve Gliding, Tendon Gliding, Pain, Functional Disability

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COMPARISON OF EFFECTIVENESS OF IASTM WITH CRYOTHERAPY AND MFR WITH CRYOTHERAPY IN THE MANAGEMENT OF PATIENTS WITH TENSION NECK SYNDROME

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Background: Tension Neck Syndrome (TNS) is a prevalent musculoskeletal disorder characterized by neck pain, stiffness, and limited range of motion, significantly affecting the quality of life, especially in sedentary workers. Traditional treatments often yield inconsistent outcomes, underscoring the need for effective interventions. This study compares the effectiveness of Myofascial Release (MFR) with cryotherapy versus Instrument-Assisted Soft Tissue Mobilization (IASTM) with cryotherapy in managing TNS.

Methods: In this randomized controlled trial, one hundred TNS patients were divided into two equal groups. Group A received IASTM, while Group B received MFR combined with cryotherapy. For all treatments, which were administered over a two- to three-week period, pain intensity, range of motion (ROM), and functional outcomes were measured at baseline, post-intervention, and follow-up using the Neck Disability Index (NDI), universal goniometer, and Numeric Pain Rating Scale (NPRS).

Results: Following the session, both groups achieved notable advancements. Both at rest and during activity, the IASTM group's NPRS scores were significantly lower ($p < 0.05$) than those of the MFR group, indicating greater pain relief. The IASTM group also shown superior ROM increases in a number of areas. While both groups' NDI ratings showed improvements in functional outcomes, the IASTM group's performance was significantly better ($p < 0.05$).

Conclusions: Both IASTM and MFR with cryotherapy are effective for managing Tension Neck Syndrome. However, IASTM demonstrated superior outcomes in pain relief, range of motion, and functional improvements, making it a more effective therapeutic option for clinical practice

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EFFECTS OF ECCENTRIC TRAINING ON FLEXIBILITY AND STRENGTH OF HAMSTRING MUSCLE

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Background- Hamstring flexibility and strength are essential for functional movements and injury prevention, with eccentric training shown to improve both by increasing muscle fiber length and reducing stiffness. Eccentric training, also known as negative training which occurs when a muscle is subjected to a force greater than it can generate, causing it to lengthen as it absorbs mechanical energy. It is characterized by significant force generation and has a notable impact on concentric torque. It enhances motor performance by increasing muscle excursion range and eccentric torque, which lowers the risk of joint damage.

Aim- The aim of this study is to investigate the effects of eccentric training on both flexibility and strength of the hamstring muscles.

Method- The study was conducted over 12 months period on 72 healthy adults aged 18-25. Participants having inclusion criteria of 20° knee-extension deficit in the Active Knee Extension (AKE) test were given eccentric training using black theraband for 6 repetition with 5 sec hold for 4 weeks , 5 days in a week. Data analysed through statistical tests to determine the result's significance. Ethical considerations ensure informed consent and participant's confidentiality.

Result- The result showed that eccentric training was useful in improving both hamstring strength and flexibility.The overall p value for strength is 0.00 and for flexibility for right side it is 0.04 and for left is 0.00.

Conclusion- The study concluded that eccentric training can be used for improving both strength and flexibility of hamstring muscle.

Keywords- Hamstring,Active knee extension test,eccentric training

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TITLE: FROM INNOVATION TO IMPLEMENTATION OF EXERCISE ADHERENCE IN PHYSIOTHERAPY - WHAT IS THE SCOPE? – A SCOPING REVIEW

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BACKGROUND: Exercise adherence is a cornerstone of successful physiotherapy, essential for maximizing the therapeutic effects of rehabilitation, managing chronic conditions, and preventing future injuries. Despite its importance, achieving consistent exercise adherence among patients remains a substantial challenge. Factors influencing adherence include patient motivation, access to resources, the complexity of exercise routines, and perceived benefits of therapy. Over the years, innovations in physiotherapy—such as digital health tools, telerehabilitation, wearable technology, and behaviour-change techniques—have been developed to support adherence. However, a significant gap remains between these innovative solutions and their widespread implementation in clinical practice.

AIM AND OBJECTIVES: The aim of the study is to explore the scope of innovations aimed at promoting exercise adherence in physiotherapy and to examine the factors influencing their successful implementation into clinical practice. The objective is to assess the effectiveness of different adherence-promoting interventions, including digital tools, wearable devices, and behaviour-change techniques.

METHODS: First, we conducted a preliminary search and gathered the keywords and MeSH terms for the secondary search. The search was conducted in the Cochrane and Pub Med databases. The inclusion and exclusion criteria were devised.

RESULTS: The preliminary search resulted in 10 articles. Following a primary review, 8 articles were excluded, as 2 didn't meet the criteria. Now the study is put forward for the secondary review and data analysis. The results will be published at the time of the presentation.

KEY TERMS: Exercise adherence, rehabilitation, physiotherapy, innovation

EFFECT OF ECCENTRIC VS. STATIC STRETCH OF HAMSTRING MUSCLE ON ACCELERATION TIME IN YOUNG ADULTS

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Introduction: Situated within the posterior compartment of the thigh, the hamstring muscles are considered two-joint muscles that perform the actions of hip extension and knee flexion. Hamstring tightness is highly prevalent among college students of age group 18-25. In certain sports, performance is greatly influenced by flexibility, technical skill, endurance, and the ability to repeatedly sprint and reduce acceleration time in sprinting. The aim of the study is to evaluate the effect of eccentric vs. static stretch of hamstring muscle on acceleration time.

Methodology: In this interventional study 90 participants were randomly assigned to one of the 3 groups-eccentric stretch group, static stretch group and control group. Popliteal angle and acceleration time of all the subjects were recorded by using PKET and timing gates respectively before and after 6-8 weeks of stretching protocol.

Results: Statistically significant difference was seen within the experimental groups for reduction in acceleration time ($p<0.05$) however there was no statistically significant difference seen in the Acceleration time between the two experimental groups ($p>0.05$). Control group did not demonstrate any improvement in the Acceleration time. There was within group reduction in the popliteal angle in both the experimental groups ($p<0.01$) but that was not seen in the Control Group.

Conclusions: This study concludes that both (eccentric and the static) stretches are equally effective for improving popliteal angle and acceleration time.

Key words: Eccentric stretch, Static stretch, Hamstring muscle, Acceleration time.

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Effect of Incline Treadmill Walking on Lower Extremity Joint Angles in Healthy Individuals: A Literature Review

Aayushi Gupta [1], Chitra Kataria [2], Meena Makhija [3], Ankita Sharma [4]

Background: Incline treadmill walking is a common mode of exercise that significantly alters the biomechanics of the lower extremities. Changes in joint angles at the hip, knee, and ankle during inclined walking can influence muscle activation patterns, joint loading, and overall gait dynamics.

Objective: This literature review aims to explore the effects of incline gradients on lower extremity kinematics in relation to joint angles in healthy individuals.

Method: A comprehensive search of electronic databases was conducted to identify relevant studies published from 2000 to 2024. Inclusion criteria include randomized control trials that examined the effects of incline treadmill walking on lower extremity joint angles in healthy individuals.

Results: The review identified 5 studies that met the inclusion criteria. Findings consistently indicated that incline treadmill walking significantly improves ankle dorsiflexion, knee flexion, and hip flexion angle as an altered postural strategy. Out of 5 studies, only one showed no significant effect on knee flexion angle.

Conclusion: This literature review highlights the beneficial effects of inclined treadmill walking on hip and knee flexion and ankle dorsiflexion, which in turn play a significant role in lower limb kinematics. These adaptations may enhance overall fitness, mobility, and functional performance. The studies advocate that incline treadmill walking can serve as an effective rehabilitation tool in lower limb musculoskeletal pathologies.

Keywords: inclined treadmill; graded treadmill; lower extremity joint angle

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"WORK-RELATED MUSCULOSKELETAL DISORDERS AND ERGONOMIC RISKS AMONG TAILORS"- A SURVEY

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BACKGROUND: Work-related musculoskeletal disorders (WMSDs) are a major concern in the tailoring profession. The repetitive nature of tasks and poor ergonomic practices lead to discomfort and pain, which may develop into long-term health issues. The Rapid Entire Body Assessment (REBA) tool is commonly employed to assess the ergonomic risks linked to different work postures.

OBJECTIVE: This study aims to assess the prevalence of WMSDs among tailors. The study also examines the association of WMSDs and ergonomic risk factors in tailors.

METHODOLOGY: A priori sample size calculation of 160 was done for the study. A total of 70 responses were obtained out of 160 questionnaires administered to the tailors aged 41.86±7.11 years. The Nordic Musculoskeletal Questionnaire (NMQ) identified WMSDs symptoms, while the REBA tool evaluated the ergonomic risks. Descriptive statistics was used for documenting the symptoms of WMSDs. Pearson Correlation was used for evaluating the association of WMSDs with REBA scores.

RESULT: Low back pain was reported by 47% of tailors, followed by knee pain (41%) and ankle pain (32%). The REBA assessment revealed that 75% of tailors are at medium risk of developing WMSDs. There is a relation between the REBA score and pain score.

CONCLUSION: This study found a high prevalence of low back pain, followed by knee and ankle pain. The REBA assessment effectively highlighted the urgent need for ergonomic interventions in tailoring practices to reduce WMSDs.

KEY WORDS: Work-related Musculoskeletal Disorders, Ergonomics risks, REBA, Tailors.

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THE EFFICACY OF GLOBAL POSTURAL RE-EDUCATION EXERCISE IN WORK RELATED TO MUSCULOSKELETAL DISORDERS AMONG GOLDSMITH

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BACKGROUND: Musculoskeletal disorders impact society and the economy. Physical therapy helps reduce disability burden. GPR treats spondylitis, neck pain with gentle movements. Avoid poor posture and actively engage in positions. Many goldsmiths work in a seated position for long periods. Improving posture at workstations for better health. GPR focuses on treating posture to prevent musculoskeletal disorders in goldsmiths.

OBJECTIVE**:** The objective of this study is to find the efficacy of the global postural re-education exercise work related to musculoskeletal disorders among goldsmith.

METHODOLOGY: This study included 30 subjects from gold workshop, Pondicherry. Subjects aged 30-65 with musculoskeletal disorders were selected. The procedure was explained to the subjects. They were treated with GPR and data was collected before and after treatment. Scoliotic angle, neck pain, and low back pain were measured using specific scales. Postural education was provided for 10 weeks.

CONCULSION: The mean values of Cobb's Angle were compared between the Pretest (29.23 ± 3.42) and Post test (22.30 ± 3.30) in the GPR Exercises group. There was a highly significant difference between the Pre-test and Post-test mean values at $p<0.001$, showing improvement in the Post test values.

KEYWORDS: Musculoskeletal Disorders, Global Postural Re-Education

IDENTIFICATION OF LOWER CROSSED SYNDROME AMONG IT PROFESSIONALS

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INTRODUCTION: IT professionals spend almost two-thirds of their working hours in a sitting position and their sitting session lasts for at least 30 minutes. The excessive use of computers with poor ergonomics has its drawbacks as it increases the tendency for musculoskeletal problems. Lower crossed syndrome is S shaped lower back posture with tight hip flexors and lower back muscles as well as weak abdomen and gluteal muscles. This places excessive stress on the lower back structures and it is considered as one of the threatening combinations of the biomechanical imbalance.

OBJECTIVES: To determine the presence of LCS among the IT professionals.

METHODOLOGY: 120 subjects fulfilling inclusion criteria were included in the study. Length of bilateral Iliopsoas muscle was measured by Modified Thomas test using Universal Goniometer. Length of spinal extensor muscle was checked by nonelastic measuring tape. Strength of Abdominal muscle and bilateral Gluteus maximus Muscle was evaluated as per MRC grading of manual muscle testing.

RESULTS: The subjects presented with shortening of iliopsoas muscle length were 62.5% of right leg and 68% on left leg. 74% subjects presented with shortening of the spinal muscle length. 62% subjects were found with weak abdominal muscle strength and 18% were found with weak gluteal muscle strength on the right side and 24% on the left side.

CONCLUSION: The 15% subjects were determined with the presence of Lower crossed syndrome. Among them male were more in number as compared to the females.

KEYWORDS: Lower crossed syndrome, Iliopsoas muscle length, spinal muscle length, abdominals and gluteal muscle.

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Effect of neuromuscular exercise and specific muscle training on knee flexion angle, gait speed & physical function in patients with unilateral knee OA

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BACKGROUND: Knee Osteoarthritis (OA) changes the normal structure of the cartilage, that causes abnormal knee function, resulting in reduced quality of life. Exercise is an efficient treatment to reduce knee pain and improve function and QoL in patients with knee OA. It helps to prevent and reduce the progression of the structural damage of the articular cartilage.

AIM: To find out and compare the effect of neuromuscular exercise and specific muscle training on knee flexion angle, gait speed and physical function in patients with unilateral knee OA.

METHODOLOGY: A pre test and post test experimental study was conducted with 30 patients with unilateral knee osteoarthritis. Participants were divided into two groups: Group A received neuromuscular exercise, and Group B performed specific muscle training, for 8 weeks duration. Knee flexion angle and gait speed were assessed by using Kinovea software and physical function evaluated by WOMAC index.

RESULTS: In post-test analysis, Group A, the knee flexion angle increased to 60.50° and gait speed 0.93 m/s. In Group B, the knee flexion angle increased to 56.60° and gait speed 0.80 m/s. And the physical function with post-test value of 28.0 in Group A and 46.07 in Group B.

CONCLUSION: Both groups shown significant improvement on knee flexion angle, gait speed and physical function. However, neuromuscular exercise shown more improvement than specific muscle training.

KEYWORDS: Knee Osteoarthritis, Neuromuscular exercise, Specific Muscle Training, Knee Flexion Angle, Gait Speed, Physical function.

Comparing the effects of Dry Cupping to Manual Therapy for Plantarfasciitis: A randomised controlled trial

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Purpose: The purpose of this study was to determine the effects of dry cupping (DC) on the pain and function of patients with plantar fasciitis.

Subjects and Methods: Thirty subjects (age 20 to 40 years old, 19 females and 11 males), randomly assigned into the two groups (Manual therapy (MT) and dry cupping with manual therapy groups), participated in this study. The research design was a randomized controlled trial (RCT). Treatments were provided to the subjects thrice a week for 3 weeks. Outcome measurements included the Visual Analogue Pain Scale (VAS), the Foot and Ankle Ability Measure (FAAM), the Lower Extremity Functional Scale (LEFS).

Results: The data indicated that both MT and DC with MT could reduce pain and increase function significantly in the population tested. Clinical outcomes at baseline and 3 weeks were compared in both groups utilizing Paired Sample t-test. The results suggest that for all the outcomes – VAS (MT = 2.13; DC+MT = 2.80), FAAM (MT = -13.93; DC+MT = -17.40), and LEFS (MT = -15.93; DC+MT = -17.87), the difference was statistically significant across both the groups ($p < 0.05$). There was no significant difference between the MT group and dry cupping with manual therapy groups outcome measurements when assessed by independent t-test.

Conclusion: These results support that DC therapy combined with traditional MT could reduce pain and increase function in the population tested as compared to treating the patient with MT only.

Keywords: Planter fasciitis, Dry cupping, Traditional Manual therapy

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Effectiveness of McKenzie method of evaluation and treatment for mechanical disorders of knee

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BACKGROUND: McKenzie method utilizes an assessment process using simple joint movement which aims to identify subgroups of patient with specific treatment guidelines. McKenzie applied this thought process to axial joints primarily and recommends similar process as MDT for peripheral joints. Less research was conducted in this perspective and the aim of this study is to explore this process.

OBJECTIVES: To find out whether mechanical disorders of knee could be categorized into three syndromes and know the effectiveness of Mechanical Diagnosis and Therapy (MDT) treatment recommendations.

METHODOLOGY: Participants with mechanical disorders of knee were randomized into 2 groups (control and experimental) after getting consent. The participants in experimental group were subgrouped and received interventions based on MDT and control group participants received standard physiotherapy care. Baseline evaluation about knee ROM, muscle power and disability using knee injury and osteoarthritis outcome scale(KOOS) were taken prior and following 3 weeks (3 sessions/week) of intervention.

RESULTS: Data was analysed using SPSS version 23.0. Between group analysis showed improvement in both groups, Subjects in experimental group had clinically significance with greater improvement when compared with control group and the same was seen in within groups pre and post value analysis.

CONCLUSION: McKenzie method of evaluation and treatment had greater improvement in pain, ROM, muscle power and functional ability following treatment for patients with Mechanical disorders of knee.

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Online survey among Indian PTs on awareness and rehabilitation of proprioception impairment in NSLBP

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Introduction: Proprioception, which is the ability of the body to recognize movement and position, is usually impaired in the sufferers of Non-Specific Low Back Pain (NSLBP). Poor proprioception can, therefore, significantly contribute to the recurrence of back pain. This is the first systematic attempt in India to assess the knowledge, attitude, and practice of Indian physiotherapists regarding awareness of and rehabilitation of proprioceptive impairment in patients with non-specific low back pain (NSLBP).

Methodology: The survey has been carefully constructed and validated with the opinion of experts in the field. This study was conducted in June 2024. The questionnaire was circulated throughout India using an online Google form.

Results and Discussion: There was a notable lack of knowledge regarding the role of proprioception in NSLBP, and most respondents did not routinely evaluate proprioceptive function in their patients. Many physiotherapists were uninformed about the available tools and methods for assessing proprioception, and the majority expressed a concern that current rehabilitation models do not adequately address proprioceptive deficits. Regarding treatment, as many as 26.5% of the physiotherapists mentioned proprioceptive deficiencies as a priority for their treatment protocol. In comparison, almost half 49.3% did not regard this aspect as an essential consideration, and 24.2% remained in the grey area.

Conclusion: The findings underscore the need to focus educational pursuits on improving the diagnosis and treatment of NSLBP by better understanding impairments in proprioception. Enhanced training and progress in standardised testing would enhance patient care.

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TO STUDY THE EFFECT OF ULTRASOUND AND VMO STRENGTHENING EXERCISES IN PATELLOFEMORAL OSTEOARTHRITIS

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Background: Traditional management of patellofemoral OA (PFOA) includes pain-relief modalities and strengthening exercises, with ultrasound therapy (US) and vastus medialis oblique (VMO) strengthening exercises gaining attention for their potential combined benefits. However, the specific effects of ultrasound and VMO-focused strengthening exercises on PFOA have not been fully elucidated.

Objective: This study aimed to evaluate the effectiveness of US combined with VMO strengthening exercises on pain reduction, functional performance, and knee joint stability in PFOA.

Methods: A total of 60 participants diagnosed with PFOA were randomly divided into two groups. The experimental group received US and VMO strengthening exercises, while the control group received standard care including general knee strengthening exercises without US. Outcome measures included pain intensity (measured by the Visual Analog Scale), functional performance (measured by the Kujala Anterior Knee Pain Scale), and knee stability. Both groups participated in a 6-week intervention program with assessments conducted pre- and post-intervention.

Results: The experimental group demonstrated significant reductions in pain intensity and improvements in functional performance compared to the control group ($p < 0.05$). Additionally, the experimental group exhibited improved knee stability, attributed to targeted VMO strengthening, which enhanced patellar tracking and reduced joint stress.

Conclusion: The combination of US therapy and VMO strengthening exercises appears to be an effective intervention for managing symptoms of PFOA. This approach may provide an alternative to traditional management strategies by improving pain, function, and stability, highlighting the importance of targeted muscle strengthening and adjunct therapies in treating PFOA.

Keywords: Patellofemoral osteoarthritis, ultrasound therapy, VMO strengthening, knee pain, functional performance

Inflammatory Biomarkers among patients with chronic nonspecific neck pain -A Literature Review

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Chronic neck pain (NP) is one of the debilitating healthcare burden to the society. Most often NP occurs without any specific cause which is termed as nonspecific NP. NP may be a feature of many disorders that occurs above the shoulder blades. There is evidence of raised inflammatory markers in the blood of patients with musculoskeletal pain including low back pain, NP, and work-related upper quadrant pain. Previous studies have demonstrated that patients with nonspecific NP showed raised systemic inflammatory markers which could represent ongoing low-grade inflammation in the context of chronic tissue stress or strain, such as in workers with neck pain exposed to prolonged, repetitive tasks and postures. Poor lifestyle factors like smoking, poor diet, low physical activity levels, sleep disturbance and obesity are also associated with systemic inflammation.

Objective of the present study was to analyse the presence of inflammatory biomarkers among patients with NP. An extensive literature search was performed from the year 2004 to 2024 to create a comprehensive narrative regarding the presence of inflammatory biomarkers among NP patients. To do this, search for key terms such as chronic nonspecific neck pain, neck pain, and inflammatory biomarkers in PubMed, MEDLINE, EMBASE, CINHAL, Ovid, and Google Scholar. Five electronic databases—MEDLINE, PubMed, CINAHL, Google Scholar, and Cochrane—were searched in order to find literature. Full-text articles published between 2004 and 2024 were included; 5 of these studies were featured in this review of the literature.

Results: Data extraction was performed by using Oxford Centre for Evidence Based Medicine for the studies selected for the review. Diversified search in various databases includes articles out of 60 articles, 5 articles were selected for the narrative review which considered presence of inflammatory biomarkers among NP patients. There was no evidence of study overlap in systematic reviews. Centre for Evidence-Based Medicine (CEBM) was used to check the articles which were selected for the level of evidence. Using the tool two studies were rated as 1a, and four studies as 1b, as per CEBM levels of indication.

Keywords: Neck pain, chronic nonspecific neck pain, inflammatory biomarkers

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Neck Pain in the Digital Age: 'Modern Era Pain' Prevalence and Impact among Health Workers

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Introduction: In today's digital age, mobile phones have become an indispensable tool for daily life. However, this convenience comes at a cost. Neck pain, a growing health concern, has emerged as a result of frequent forward neck bending while using mobile devices. This Neck pain, a repetitive strain injury, results from prolonged neck flexion associated with extensive handheld device usage, justifying its classification as 'Modern Era Pain' due to its direct correlation with modern technology.

Objectives: To determine the prevalence of neck pain among Health Workers. And to assess the effect of neck pain on daily activities, and quality of life.

Method: It is a cross-sectional study design to investigate the effects of neck pain on daily functioning among Health Workers aged 25-60 years. Outcome is measured by Neck pain and Disability scale (NPAD Scale) which is filled by self-reported data of the participants. To determine the extent to which neck pain interferes with daily life and activities.

Result and conclusion: On-going study and result will be showed at the time of presentation.

Keywords: Neck Pain, Digital Age, Modera Era Pain, Neck pain and Disability scale (NPAD Scale)

Comparative study of Isometric Exercises combined with Mobilization with Movement (MWM) VS Progressive resistance Exercises on Pain, Walking Speed and Physical Function in OA Knee

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Objectives: To investigate the efficacy of Progressive resistance Exercises on Pain, walking speed and Physical functions in Patients with OA Knee. To find out the combined effects of Isometric Exercises and Mobilization with movement on Pain, walking speed and Physical functions in Patients with OA Knee. And to compare the effects of isometric exercise in combination of Manual therapy and Progressive resistance Exercises (PRE) on Pain, walking speed and functions in subjects with OA Knee. Study design: Comparative case control study.

Methodology: Sixty subjects both male and female with age range between 50-65 years with a diagnosis of OA Knee were selected directly from Physiotherapy outpatient door of MahatmaGandhi Hospital, MGPC, Jaipur. These individuals were randomly assigned into two groups: IECM Group [Isometric Exercise combined with MWM group (n = 30)] and PRE Group (n = 30). Both the groups firstly received Pulsed ultrasound therapy (1 MHz frequency, intensity of 1watts/cm 2 for a period of 5 minutes) over tender point. Thereafter each group received specific interventions. Patients of both the group were called for treatment on daily basis. Data collection was done by using VAS scale for measurement of pain, walking speed by 20 meter walk test and Physical function measured by WOMAC index on day 1, at end of 2nd week and at the end of 4th week.

Result: Progressive resistance Exercises are effective in the treatment of OA knee and is superior as compare to Isometric exercises combined with MWM in terms of pain reduction, greater gains in walking speed and improvement in Physical function in patients with OA knee.

Conclusion: The results of this study show that Progressive resistance Exercises technique is more effective in treating OA Knee as compared to Isometric exercises combined with MWM.

Key words: OA Knee, PRE (Progressive resistance Exercises), MWM (Mulligan Mobilization with movement), IECM (Isometric exercises combined with MWM), VAS (Visual Analogue scale), WOMAC index (Western Ontario and McMaster Universities Osteoarthritis Index)

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Improving pain and disability in lower back pain with neural mobilization – A systematic review

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Background – Low back radicular pain, a commonly observed form of low back pain, manifests when one or more lumbosacral nerve roots are compressed, irritated, or affected by other underlying conditions, leading to the experience of pain. The occurrence rate of low back pain throughout a person's lifetime has been estimated to reach up to 85%. This prevalence appears to peak during the physically active phase of life, typically between the ages of 20 and 50. The purpose of this study is to examine the efficacy of core strengthening exercises and neural mobilization in the treatment of NSLBP.

Methods – Systematic review of the studies reporting separate outcomes of patients with LBP and LBP with leg pain and synthesis of available evidence. Literature search of English language peer-reviewed publication was conducted using CINAHL, MEDLINE, PubMed and Cochrane Central Register of Controlled Trials.

Results – Of the papers gained though search, 12 were included in the review which supported that Neural Mobilization is an effective method to decrease pain and improve functional ability in patients with NSLBP.

Keywords – back pain, sciatica, disability, neural mobilization

Effect Of Egoscue Exercise Versus Lumbar Stabilization Exercise On Pain And Lumbar Lordosis In Patient With Non Specific Low Back Pain

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BACKGROUND: Low back pain is a complex and diversified condition that has a significant influence on quality of life, especially when it persists. Lumbar hyperlordosis refers to an excessive inward curve of the lower back. When dealing with lower back pain with hyperlordosis, both egoscue exercises and lumbar stabilization exercises are beneficial.

OBJECTIVES: To analyse the Effect of Egoscue Exercise versus Lumbar Stabilization Exercise on Pain and Lumbar Lordosis in Patients with Non Specific Low Back Pain.

METHODOLOGY: Pre- test and Post -test Experimental study consisted of 40 patients. They were divided into two groups. Group A- received egoscue exercises and Group B received lumbar stabilization exercise. Treatment duration was one hour per session, 4days per week for 6 weeks. The outcome measures were Flexi ruler and Numerical Pain Rating Scale.

RESULTS: Using unpaired ‘t’ test comparison of post-test values of Group A and Group B of Flexi ruler showed the t value of 6.76. Post-test values of Numerical pain rating scale showed the t value of 4.29.

CONCLUSION: This study concluded that egoscue exercise shows significant improvement in flexi ruler and Numerical pain rating scale when compared to lumbar stabilization exercise.

KEYWORDS: Non Specific Low Back Pain, Lumbar Lordosis, Egoscue Exercise, Lumbar Stabilization Exercise, Flexi Ruler, Numerical Pain Rating Scale

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A Narrative Review of the Thoracolumbar Fascia and Its Role in Non-Specific Low Back Pain

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Background and Objective: The exact mechanisms by which the TLF influences LBP remain unclear. This narrative review aims to synthesize current research on the anatomy and biomechanics of the thoracolumbar fascia (TLF), its role in spinal stability, the effects of TLF dysfunction, and its implications for the clinical management of low back pain (LBP).

Methods: A comprehensive literature review was conducted to synthesize existing knowledge on the anatomy and biomechanics of the thoracolumbar fascia (TLF), its role in spinal stability, the clinical implications of TLF dysfunction in non-specific low back pain (NSLBP), and the effectiveness of therapeutic interventions aimed at restoring TLF function. Peer-reviewed articles, experimental studies, clinical trials, and review papers were sourced from major scientific databases, including PubMed, Scopus, and Google Scholar. The search strategy included relevant keywords such as thoracolumbar fascia, non-specific low back pain, spinal stability, fascia dysfunction, and myofascial therapy, among others, ensuring broad coverage of the topic. Inclusion criteria were studies focusing on the anatomical and biomechanical characteristics of the TLF, its functional role in movement and load transfer, and its involvement in NSLBP pathophysiology. Articles investigating therapeutic interventions, such as myofascial release, fascia-specific exercises, and physical therapy, were also included. Exclusion criteria were studies unrelated to TLF or NSLBP, non-English language publications, and those lacking sufficient methodological rigor. Key findings were critically analyzed and integrated, emphasizing the relationship between TLF dysfunction and NSLBP and highlighting the potential of various interventions to improve patient outcomes. This approach aimed to provide a thorough and cohesive understanding of the clinical relevance of TLF, addressing current gaps in knowledge and paving the way for future research.

Results: The thoracolumbar fascia (TLF) plays a crucial role in spinal support, linking the musculature of the trunk and pelvis. Dysfunction in the TLF, such as fibrosis, thickening, or the presence of myofascial trigger points, has been associated with both acute and chronic LBP. Clinical interventions, including myofascial release, physical therapy, and fascia-specific exercises, have shown effectiveness in improving mobility and alleviating pain by restoring normal fascial function.

Conclusion: The thoracolumbar fascia plays a significant role in both the prevention and development of low back pain. A better understanding of TLF's role in spinal biomechanics and pain mechanisms may inform more effective treatment strategies for LBP. Therapeutic approaches targeting TLF dysfunction offer potential for improving patient outcomes in LBP management. Further research is needed to explore the underlying mechanisms of TLF-related LBP and to evaluate the efficacy of fascia-focused therapies.

Keywords: TLF – Thoracolumbar fascia, NSLBP – non-specific Low back pain, spinal stability, fascia dysfunction, and myofascial therapy

Effect of multimodal physical rehabilitation protocol on standing and walking time in elderly with leg pain in low grade degenerative lumbar spondylolisthesis: a prospective case-control study

Kriti Khanna, Shikha Jain (PT, Ephysiohealth)

Purpose: The aim of this study was to investigate the effect of a multimodal physical rehabilitation protocol (MPRP) on walking and standing time in patients with leg pain with degenerative lumbar spondylolisthesis (DLS).

Methods: Prospectively collected clinical outcome data was analysed in patients with significantly reduced ST and WT of <20 minutes in patients with DLS who were treated with MPRP (study group) and compared with results in similar patients who did not undergo a MPRP treatment (control group). Clinical outcome parameters included numerical pain rating scale (NPRS) score, Oswestry disability index (ODI), ST and WT.

Results: Twenty-five patients in the study group and 15 patients in the control group with a minimum follow-up of 6 months were included in the study. In the study group, the mean pre-treatment NPRS score of 7.2±1.3 significantly reduced ($p<0.0001$) to 1.2±0; the mean pre- treatment ODI score of 59.3±9.4 significantly reduced ($p<0.0001$) to 22.5±7.8; the mean pre- treatment ST of 5±2.7 minutes significantly increased ($p<0.0001$) to 28.6±13.2 minutes; and the mean pre-treatment WT of 6±3.6 minutes significantly increased ($p<0.0001$) to 27.2±12.1 minutes at a mean follow-up of 298±71 days.

Conclusion: Encouraging results of MPRP indicate that this approach can be utilized as the primary treatment option in patients with low grade DLS with significantly reduced ST and WT who may be advised surgery.

Keywords: degenerative spondylolisthesis; low back pain; rehabilitation; physical therapy modalities; spine

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Effect of Mulligan SNAGs and Maitland Central PA in subjects with lumbar radiculopathy

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Background and Objective: Lumbar radiculopathy is a peripheral nervous system disorder affecting the activity of daily living associated with sub-acute and chronic pain and functional limitation in normal function. The objective of the study was to evaluate the effect of Mulligan SNAGs and Central PA mobilization in lumbar radiculopathy.

Material and Methods: The study was conducted among 50 subjects, including male and female symptoms of lumbar radiculopathy from the age group of 25 to 50 years. Subjects were randomly divided into 2 groups 25 subjects each group. Group A and Group B respectively. Group A was treated with Mulligan SNAGs mobilization along with electrotherapy and rehabilitation protocol. Group B was treated with Central PA mobilization and electrotherapy. Initial assessment was taken on 1 st day before the treatment and another assessment was taken on the 20th day after the treatment. Using SOAP format along with goniometer, measuring tape, and NPRS, Oswestry Low Back Pain Disability.

Result: In this study, outcomes that among the subjects of radiating pain in the lower limb have more effect in group A, similarly pain and Questionnaire Oswestry Low Back Pain Disability also more effective in reduced in group A. In the other group, B showed variable results in terms of radiating pain and ADLs along with reoccurring symptoms can also be seen.

Conclusion: The results were that Mulligan SNAGs were more effective on pain and ADL among the subjects with lumbar radiculopathy in the experimental group than another group that was treated with Central PA with electrotherapy and rehabilitation protocol.

Keywords: Lumbar radiculopathy, Mulligan SNAGs, Centra PA mobilization

Changes in Cranio-vertebral angle associated with extended Smartphone use-A literature review

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Background- Smartphones are portable gadgets used for many purposes in the current day. Long periods of smartphone use cause the neck to tilt forward. The cervical spine supports the weight of the head while doing regular tasks. Forward head posture puts more strain on the cervical spine and surrounding muscles. In order to compensate for the increased external flexion moment, forward head flexion results in an excessive external flexion force, which increases the strain on the neck extensors and surrounding connective tissues. Forward head flexion causes decrease in Craniovertebral angle causing changes in neck biomechanics and affecting surrounding structures.

METHODOLOGY- A variety of electronic databases were used to search for the literature. Source of Data: PubMed, Science Direct, CINAHL, Embase, Cochrane library and Google Scholar. Study design: Review of literature.

Result-A total of 405 full text articles publications were examined for eligibility. 32 studies were shortlisted from which 8 studies were selected on the basis of criteria given for inclusion of data. Studies included were survey, cross sectional and cohort. Studies found that there is a correlation of prolong Smartphone usage, Forward head posture and Craniovertebral angle.

Discussion-Smartphone addiction causes poor posture. With extended use the head hang forward leading to forward head posture. In relation to forward head posture the craniovertebral angle tends to change. Usually with increased head flexion forward craniovertebral angle decreases which may cause excess tension in nearby muscles. Prolong smartphone use with decreased Craniovertebral angle may cause fatigue in upper trapezius and erector spinae muscle leading to poor posture.

Key words- Cervical spine, Craniovertebral angle (CVA),Forward head posture, Neck pain

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Impact of glycaemic control and disease duration on neuromuscular dysfunction, fear of fall and fall risk in type 2 diabetes mellitus: a pilot investigation

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Background and Purpose: An understanding of the potential impact of glycaemic control and disease duration on neuromuscular parameters and fall risk could help in developing focused prevention and rehabilitation program in T2DM. Therefore, the purpose of the present study was to investigate the effect of disease duration and glycaemic control on neuromuscular dysfunction, fear of fall and fall risk in type 2 diabetes mellitus (T2DM) patients

Methods: 20 patients with T2DM under two categories i.e. glycaemic control [HbA1c <8% (n=5) and greater than or equal to 8% (n=5)] and disease duration [(<10 years (n=5) and greater than or equal to 10 years (n=5)] were recruited from OPD of SGT hospital. Patients with at least 1 year of diagnosed T2DM as per American Diabetes Association criteria between the age group of 35-59 years were enrolled. After basic demographic assessment, participant's fear of fall and risk of fall was assessed using Falls risk assessment tool (FRAT) and Falls Efficacy Scale (FES-1) questionnaire. Proprioception of their bilateral ankle joints was tested using an inclinometer. Strength assessment of ankle plantarflexors, dorsiflexors and abductor hallucis muscle was performed bilaterally using a hand held dynamometer. Various spatio-temporal parameters of gait were evaluated during a 5 minute walk on a walkway using a motion analysis system (Gait On V.19)

Results: Findings suggested significant impact of severity of glycaemic control and disease duration on various neuromuscular parameters ($p<0.05$)

Conclusion: Impaired glycemic control and longer diabetes duration seems to negatively influence neuromuscular parameters, fear of fall and fall risk in T2DM patients without diabetic peripheral neuropathy. Findings of this study could be help in developing more rigorous and focused prevention and rehabilitation strategies for T2DM patients with varied glycaemic control and disease duration.

Keywords Diabetes mellitus; Neuromuscular dysfunction; Falls

IMPACT OF INTERNET ADDICTION ON COGNITION, SLEEP AND ASSOCIATED FUNCTION IN COLLEGIATES: A CROSS-SECTIONAL STUDY

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Background and Purpose:: Internet usage has been rapidly increasing among the collegiate population and its prevalence rate is around 37% among Indian collegiate students. Through this study the aim is to find out extent of association between internet addiction and cognition, sleep and physical activity among collegiate students.

Methods: 60 collegiates having a score of >50 on Young's Internet Addiction Test (YIAT) indicating moderate to severe internet addiction, using a semistructured, pretested and validated interviewer administered questionnaire were recruited from various universities across Delhi-NCR. Participants were further assessed for cognitive functions using P300- Event Related potential, sleep quality [Pittsburgh Sleep Quality Index (PSQI)] and their physical activity levels [International Physical Activity Questionnaire (IPAQ-SV)].

Results: Bivariate correlational analysis was performed between internet addiction and cognition, sleep quality and physical activity. Results revealed a significant impact of internet addiction on cognition, sleep, and physical activity in collegiate students ($p<0.05$).

Conclusion: Findings of the present study indicates a significant impact of internet usage to important parameters such as sleep, cognition and physical activity. To further elucidate impact of internet addiction, future studies should include management of cognitive impairment using cognitive motor interventions and physical activity.

Keywords: Internet Addiction, cognition, Sleep

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A Systematic Review of Interventions for Vaginismus: Evidence from Clinical and Psychological Studies

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Background: Vaginismus is a spasm of the muscles surrounding the vagina that occurs against your will. The spasm makes the vagina very narrow and can prevent sexual activity and medical exams.

Objectives: The objective of this review is to evaluate and synthesize current evidence on the effectiveness of psychological, physical, and medical interventions for managing vaginismus, with a focus on improving treatment outcomes and guiding clinical practice.

Methods: A thorough search was conducted across databases like PubMed, Web of Science and Springer. Inclusion criteria were studies including interventions and treatment of vaginismus, women diagnosed with primary or secondary vaginismus and all the English studies. The review focuses on treatment approaches for vaginismus (e.g., psychotherapy, pelvic floor therapy, dilators, pharmacological treatments). Exclusion criteria being all the male patients and all the Non-English studies.

Results: The review covers 8 studies finding that vaginismus is linked to fear, phobic avoidance, and anxiety, with etiology including intimacy-related issues, emotional and mental health challenges, medication effects, and pelvic floor dysfunction. Treatments include CBT, MCBT, relationship-focused therapy, physical therapy, vaginal dilators and certain analgesics, alongside patient education.

Conclusion: The review highlights vaginismus is a multifaceted condition rooted in psychological, emotional, and physical factors. A multidisciplinary approach, combining behavioral therapies, physical interventions, and tailored medical treatments, is essential for effective management and improving quality of life. Pelvic floor physical therapy reduces muscle hypertonicity and facilitates penetration, while cognitive-behavioral therapy (CBT) addresses fear and avoidance through graded exposure and cognitive restructuring. Future research should focus on understanding the interplay between psychological and physical factors in vaginismus and the neurobiological mechanisms underlying vaginismus to better understand its etiology and progression.

Key words: Vaginismus, Pelvic Floor dysfunction, Pelvic floor therapy, CBT

Assessing of balance and flexibility among peri and postmenopausal women in age group of 40-55 year -An Observational study.

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Background: According to the World Health Organization (WHO), menopause is defined as the absence of menstrual periods for 12 consecutive months. Menopause is associated with a significant reduction in circulating estrogen levels, which may contribute to age-related declines in muscle strength, function, mobility, balance, VO2 max, and flexibility. This study aims to assess balance and flexibility in peri and postmenopausal women aged 40-55 years.

Methods: This was an observational study involving 68 peri and postmenopausal women aged 40-55 years, selected according to inclusion and exclusion criteria. Participants were informed about the study, and written consent was obtained. Demographic data and the Menopause Rating Scale were used to categorize participants into two groups: Group A (perimenopausal) and Group B (post-menopausal). Each participant performed balance and flexibility tests three times, and the average score was recorded.

Result: Flexibility test: Group A had a mean score of 38.29, and Group B had a mean score of 24.76. Balance test (right leg): Group A had a mean score of 39.56, and Group B had a mean score of 24.61. Balance test (left leg): Group A had a mean score of 37.05, and Group B had a mean score of 19.82.

Conclusion: The study concludes that significant differences in balance and flexibility between peri and postmenopausal women, highlighting the impact of menopausal status on physical performance.

Keywords: Menopause, Perimenopause, Post menopause, Balance, Flexibility

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A Quasi-experimental Study to Assess the Efficacy of Acupuncture on Anxiety, Sleep Quality and Sleep Duration in Patients with Primary Insomnia

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BACKGROUND: Sleep is an essential element for human life, necessary for the maintenance of homeostasis of our organism. Issues with sleep lead to insomnia. Generally defined as the difficulty initiating, maintaining or inability to return to sleep despite adequate opportunity for sleep along with frequent nighttime awakenings. Primary insomnia now classified under chronic insomnia tends to persist throughout person's life, often beginning during childhood. Insomnia is said to be highly comorbid to anxiety and has been associated with indices of elevated autonomic activity including reduced heart rate variability or elevated heart rate.

OBJECTIVES: To determine the effectiveness of Acupuncture on the mood disturbances such as anxiety and autonomic activity such as resting heart rate in patients with primary insomnia.

METHODS: In this experimental study 20 subjects with primary insomnia were recruited. After recruitment all subjects received acupuncture treatment three times a week, for 3 weeks. By the end of session, pre and post comparison was done for insomnia severity, sleep quality and anxiety, using the Insomnia severity index (ISI), Pittsburgh sleep quality index (PSQI) and Hamilton anxiety Scale (HAM-A) respectively.

STATISTICAL ANALYSIS: Data were analyzed with SPSS software using Paired t test.

RESULT: Post- intervention statistically significant improvement was found within the group with respect to sleep quality, severity of insomnia and anxiety (p-value < 0.05).

CONCLUSION: This study concluded that the Acupuncture technique significantly improved sleep quality, insomnia severity and anxiety

KEY WORDS: Acupuncture, Primary insomnia, Anxiety, Sleep quality and Sleep duration.

COMPARATIVE EFFECT OF 8-WEEK HIGH INTENSITY INTERVAL TRAINING AND CIRCUIT TRAINING PROGRAMME ON BODY COMPOSITION AND BODY IMAGE IN FEMALE STUDENTS OF UNIVERSITY

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BACKGROUND- Body composition and body image significantly impact physical health and self-perception of young adults. High-intensity interval training and circuit training are popular trainings, there is limited research comparing their effect on body composition and body image. This study aimed to evaluate the effectiveness of these training programs and develop targeted interventions to improve psychological and physical health in this demographic.

METHOD- A comparative experimental study was conducted with 30 female university students (aged 18-25), randomly assigned (ratio 1:1:1) to an 8-week HIIT program (n=10), Circuit Training (n=10), or a control group (n=10). Body composition parameters (weight, BMI, body fat percentage, skeletal muscle mass, and waist-hip ratio) were measured using a Body Impedance analyser. Body image was assessed using a Body Image questionnaire, and self-esteem was evaluated on a 5-point Likert scale. Data was collected at baseline, at the end of 4th week and 8th week, and analysed using SPSS software version 26.

RESULT- Both HIIT and Circuit training significantly improved body composition and body image compared to the control group. HIIT had a stronger impact on key physical measures such as weight, BMI, BF%, and WHR, as well as body image. Neither training regimen produced substantial changes in SMM, and gains in self-esteem were apparent but not statistically significant.

CONCLUSION- Both HIIT and Circuit training were effective in improving body composition and body image. For practical application, program selection can be based on individual preferences and specific fitness goals.

Keywords- High-Intensity Interval Training, Circuit-Based exercise, Body Composition, Body Image

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TO COMPARE THE EFFECT OF UTERUS MANUAL THERAPY AND SACRAL RELEASE TECHNIQUE IN WOMEN WITH DYSMENORRHEA- AN EXPERIMENTAL STUDY

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Background and Purpose: Dysmenorrhea, marked by cyclic menstrual pain, impacts women's health by causing absenteeism and lowering quality of life. Manipulation of soft tissues contributes to improved mechanical, circulatory, and neurological responses. Manual therapy affects fascia around the sacral region, which decreases tension on the broad ligament of the uterus and pelvic nerve roots, may alleviate menstrual pain. In conclusion, the sacrum was chosen as the area of treatment for this research because of the possible impact that joint dysfunction of the sacrum may have on uterine function. This study seeks to compare the efficacy of uterine manual therapy (UMT) and sacral release technique (SRT) in mitigating dysmenorrhea-related pain and symptoms.

Subjects and Methods: A total of 30 women aged 18-30 with dysmenorrhea were randomly split into two groups. One group received UMT, the other SRT. Each treatment lasted 15-20 minutes daily for one week, starting two days before menstruation, over two consecutive cycles.

Outcome Measures: Pre- and Post-intervention Numeric Pain Rating Scale (NPRS) scores for pain and Menstrual Distress Questionnaire (MEDI-Q).

Results: Both UMT and SRT demonstrated significant reductions in NPRS and MEDI-Q scores. Comparative analysis revealed the effectiveness of both therapies, with no significant variance in terms of pain and symptoms.

Conclusion: UMT and SRT provide significant pain relief and improve the quality of life for women suffering from menstrual pain.

Keywords: Dysmenorrhea, menstrual pain, uterus manual therapy, sacral release.

Structured Art Therapy in Enhancing Sleep Quality Among Young Adults- An Experimental Study

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Background: Mandalas, originating from Tibetan Buddhism and popularized in psychotherapy by Carl Jung, are used in art therapy to express emotions and promote self-awareness. Mandalas, with their symmetrical, repetitive patterns, help individuals replace negative thoughts with positive ones, fostering emotional balance. Coloring complex mandala designs can lead to a meditative state, helping to reduce anxiety by engaging individuals in a therapeutic activity that shifts focus away from distressing thoughts.

Objective: This study aimed to evaluate the effect of Structured Art Therapy using mandala coloring on the sleep quality of young adults.

Methodology: Seventy-eight participants colored printed mandala designs over a seven-day period. The complexity of the designs gradually increased. Participants completed pre- and post-treatment assessments using the Pittsburgh Sleep Quality Index (PSQI) to measure sleep quality before and after the intervention.

Results: The pre-treatment PSQI mean score was 10.53 (SD = 2.51), and the post-treatment mean score was 3.83 (SD = 1.82). The difference was statistically significant ($p < 0.0001$). Participants showed improvements in sleep latency, sleep duration, sleep efficiency, and daytime dysfunction.

Conclusion: Coloring complex mandala designs for seven days significantly improved sleep quality in young adults. The structured art therapy protocol effectively enhanced sleep patterns, suggesting mandala coloring as a beneficial tool for improving sleep and emotional well-being.

Keywords: Pittsburgh Sleep Quality Index, Mandala Coloring, Structured Art Therapy.

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Title: Efficacy Of Transcutaneous Electrical Nerve Stimulation on Pain In Primary Dysmenorrhea: An Interventional Study

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INTRODUCTION: Primary Dysmenorrhea (PD) is defined as spasmodic and painful cramps in the lower abdomen that begin shortly before or at the onset of menses in the absence of any pelvic pathology Transcutaneous electrical nerve stimulation (TENS) is a used to reduce pain related to primary dysmenorrhea. TENS is non-invasive, safe and easy to use

AIM: Study aimed to see effectiveness of TENS on pain in females with primary dysmenorrhea.

METHOD: An interventional study was carried out on females with primary dysmenorrhea aged 18-25 at our university. Females with PCOS and secondary dysmenorrhea were excluded. TENS was given for 3 consecutive menstrual cycles on first three days of menstruation. TENS parameters: Frequency 50-120 Hz, intensity as tolerated, pulse width 100 μs, time: 30 minutes. One pair of electrodes were placed at suprapubic region above the pubic symphysis and one pair at the para-spinal area of the lumbar region. VAS and Menstrual distress questionnaire were taken pre-treatment and 3rd day post treatment for all three menstrual cycles.

RESULTS: Fifteen females mean age was 22 ± 1.38 years, mean BMI 23.8 ± 1.35. The pain intensity decreased significantly baseline data was 5.6 ± 0.61 to 0 .87 ± 0.62 4.4 ± 0.88 to 0.4 ± 0.49 was significant (p value : <0.001)

Menstrual Distress Questionnaire scores showed no significant change (pre: 1.93 ± 0.25, post: 1.97 ± 0.18).

CONCLUSION: The study revealed that TENS was effective in relieving pain in primary dysmenorrhea.

KEYWORDS: Primary dysmenorrhea, transcutaneous electrical nerve stimulation, Visual analog scale

Title: The widespread web of sleep apnea: beyond snoring linked with various health problems

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Background: Obstructive sleep apnea (OSA) is a prevalent condition linked to severe health consequences such as hypertension, obesity, and cardiovascular diseases. Despite research indicating gender differences in OSA prevalence and risk factors, comprehensive data on the Indian population remains limited.

Aim: This study aims to determine the prevalence of individuals at risk for OSA in a sample of the Indian population using the Berlin Questionnaire and characterize the high-risk group regarding sleep-related symptoms and comorbidities.

Methodology: A cross-sectional study was conducted with 100 participants (36 males and 64 females) aged 20-60 years in Pune, India. Participants provided informed consent and completed demographic questionnaires along with the Berlin Questionnaire and Neck Disability Index. Data were analyzed statistically**.**

Results: The analysis revealed that 21% of males and 18% of females were at high risk for OSA. Notably, 25% of individuals with hypertension were also categorized as high risk. Obesity was a significant factor, with 37% of obese individuals (BMI >25) showing high-risk scores. Additionally, 45% of participants with neck disabilities were identified as high risk, highlighting a correlation between neck pain and OSA.

Conclusion: The findings underscore the importance of screening for OSA risk factors in primary care, particularly among individuals with hypertension and obesity. Increased awareness and early intervention may mitigate the health risks associated with OSA, particularly in the context of rising obesity rates.

Keywords: Obstructive sleep apnea, Berlin Questionnaire, hypertension, obesity, neck pain, Indian population, cardiovascular diseases.

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"Reliability of a New Smartphone Application for Measuring Cranio-cervical Posture in Healthy Individuals."

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Background: Forward Head Posture is one of the commonly recognized types of poor head posture in sagittal plane in patients with cervical pain. Forward head posture can be assessed by various angles like craniovertebral angle, sagittal head tilt angle and head shoulder angle. among various instruments Smartphone are user friendly instruments and if proven to be reliable, clinicians can use them for a variety of tasks including posture assessment.

Objectives: The purposes of this study were to determine the intra-rater and inter-rater reliability of the PhysioMaster application in measuring cranio-cervical posture in a sagittal view in healthy individuals.

Methods: Two raters measured cranio-cervical posture using an android device for intra-rater and inter-rater reliability. With an interval time of 24 hrs after first session, measurements were repeated by one of the rater once to measure inter-rater reliability.

Results: ICC values of more than 0.77 and 0.80 demonstrated Good to excellent intra-rater and inter-rater reliability

Conclusion: PhysioMaster appears to be a reliable application for measuring cranio-cervical posture in sagittal view in healthy individuals.

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"Assessing Risk of Bias and Clinical Applicability of Machine Learning Models for Detecting Manual Wheelchair Propulsion in Individuals with Spinal Cord Injury: A Systematic Review"

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Background and Purpose - Advances in multi-sensor devices and population-specific Artificial-Intelligence (AI) algorithms offer promising improvements in analysing wheelchair propulsion. Understanding these dynamics is essential for enhancing mobility, functional independence and quality of life (QoL) for individuals with spinal cord injury (SCI). The purpose of this review was to assess the risk of bias (RoB) and clinical applicability of Machine learning models for detecting manual wheelchair propulsion in individuals with SCI.

Methods - Following the PRISMA guidelines, a systematic search in Scopus and PubMed databases was performed; Included keywords were: "spinal cord injury," "artificial intelligence," "machine learning," "deep learning," "neural network," "wheelchair propulsion" and "wheelchair mobility". We identified 192 studies out of which three met our eligibility criteria. After data extraction, this study assesses prediction model quality, risk of bias, and applicability using the Transparent Reporting of Multivariable Prediction Model for Individual Prognosis or Diagnosis (TRIPOD) and Prediction model Risk Of Bias Assessment Tool (PROBAST) checklists.

Results - Overall quality of the prediction models was considered acceptable, with most studies demonstrating an adherence rate greater than 60% to TRIPOD. However, these studies were generally rated as having a high RoB in the data analysis domain according to PROBAST.

Conclusion - The algorithms developed have the potential to accurately detect wheelchair propulsion. However, their clinical applicability remains uncertain due to a significant RoB and the limited number of studies available. TRIPOD and PROBAST's standardized framework promote a better and more comprehensive reporting of systematic reviews of prediction models.

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TELEREHABILITATION VS CLINIC-BASED REHABILITATION FOR PATIENTS WITH PLANTAR FASCITIS: A COMPARATIVE STUDY

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Background : Plantar fasciitis, a common cause of heel pain, affects mobility and quality of life. While clinic-based rehabilitation is the standard treatment, telerehabilitation has emerged as a convenient alternative. This study compares the effectiveness of these two approaches.

Objective : To evaluate the outcomes of telerehabilitation versus clinic-based rehabilitation in reducing pain and improving function in plantar fasciitis patients over 4 weeks.

Methods : Twenty patients (13 females, 7 males) with plantar fasciitis were randomly assigned to telerehabilitation (n=10) or clinic-based rehabilitation (n=10). Both groups completed a structured 4-week program. Pain intensity (VAS) and functional outcomes (FFI) were measured pre- and post-intervention. Paired t-tests assessed within-group changes, while independent t-tests compared outcomes between groups. Patient satisfaction and adherence were also evaluated.

Results : Both groups showed significant improvements in VAS and FFI scores ($p < 0.01$). However, clinic-based rehabilitation resulted in greater improvements in VAS (6.8 ± 1.0 to 2.5 ± 0.9) and FFI scores (64.8 ± 6.0 to 30.2 ± 5.1) compared to telerehabilitation (VAS: 6.5 ± 1.2 to 4.0 ± 1.0; FFI: 65.2 ± 5.4 to 42.5 ± 4.8, $p < 0.05$). Patient satisfaction was higher for clinic-based rehabilitation (85% vs. 75%, $p = 0.03$), while adherence rates were similar.

Conclusion : Clinic-based rehabilitation was more effective than telerehabilitation in improving pain and function in plantar fasciitis patients. Telerehabilitation remains a viable alternative, particularly for those unable to access in-person care.

Keywords: Plantar Fasciitis , Telerehabilitation

Activity, Pain, and Productivity: A Study of How Lifestyle Choices Shape Academic Success in Different Student Groups

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INTRODUCTION: University students frequently face a combination of physical and mental stressors, with musculoskeletal pain (MSP) and physical inactivity being particularly prevalent. The sedentary lifestyle often adopted by students due to extended study hours and limited physical activity can exacerbate musculoskeletal discomfort, which in turn impacts academic performance and productivity. This study investigates the relationship between physical activity, musculoskeletal pain, and academic productivity in university students, comparing students from physiotherapy and social science disciplines. The aim is to explore how lifestyle choices related to physical activity influence pain levels and cognitive function, and how this, in turn, affects academic success.

OBJECTIVE: To examine the impact of physical activity on musculoskeletal pain and academic productivity among university students from two distinct academic disciplines—physiotherapy and social sciences—and to determine how lifestyle choices shape their academic success.

METHOD: The study involved 200 university students, with 100 students each from physiotherapy and social sciences programs. Physical activity levels were assessed using self-reported surveys, while musculoskeletal pain was measured using the Visual Analog Scale (VAS). Academic productivity was evaluated through self-reported GPA scores and a productivity questionnaire. Pain-related productivity loss was also assessed through a subjective measure of cognitive performance. The results were compared between students in the two academic disciplines to analyze the effects of physical activity and pain on academic performance.

RESULTS: Physiotherapy students reported significantly higher levels of physical activity and lower levels of musculoskeletal pain compared to social science students. Physiotherapy students exhibited a lower pain score on the VAS (mean pain score = 3.1) compared to their counterparts in social sciences (mean pain score = 5.2). Additionally, physiotherapy students demonstrated higher productivity and academic performance, with a mean GPA of 3.8, compared to 3.2 in social science students. The study found that physical activity was positively correlated with academic productivity, while musculoskeletal pain was negatively correlated with GPA and productivity.

CONCLUSION: Higher levels of physical activity are associated with reduced musculoskeletal pain and better academic outcomes in university students. Physiotherapy students, who engage in more physical activity, experience less pain and higher academic performance than social science students. This study suggests that promoting physical activity among students, particularly through exercise programs and ergonomic education, can significantly improve both physical health and academic success.

KEYWORDS: Physical Activity, Musculoskeletal Pain, Academic Productivity, Physiotherapy Students, Social Science Students, Cognitive Function, Sedentary Lifestyle

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FEASIBILITY OF FOUR WEEK EXERCISE TRAINING IN ELDERLY: A PILOT STUDY

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Background - Ageing is a natural and inevitable process. A decline in many bodily processes are associated with aging. It's accompanied by physiological changes in the muscles, bones, and joints that impact movement and is seen to decrease physical fitness and exercise capacity which causes difficulty in carrying out activities of daily living and compromises independence. Regular exercising is one of the best ways to prevent age related health issues. Exercise training helps elderly to maintain strength, balance and flexibility.

Objective - The aim of this study is to evaluate the feasibility of supervised exercise training on strength and exercise capacity in elderly individuals using 6 minute walk test (6MWT) and 30 seconds (30s) chair stand test.

Methods - A total of 15 individuals with mean age 70, 50.33% females and 46.67% males who were able to walk independently and could understand instructions, and who were not suffering from any severe neurological, musculoskeletal and cardiopulmonary disease were given a 45 minute supervised exercise program for 4 weeks. A total of 20 sessions were given with 5 sessions per week. Each session comprised of strength, mobility, flexibility and breathing exercises. The subject were assessed using 6MWT and 30s Chair Stand Test at baseline and at the end of the intervention.

Results - Statistical analysis was performed using paired t-test. The results showed significant improvement in the scores of both 6MWT ($p<0.05$) and 30s chair stand test ($p <0.05$) when compared between pre and post intervention.

Conclusion -Strength and exercise capacity were considerably increased by a supervised exercise plan. The foundation of active aging is physical exercise.

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"IMPACT: Investigating the Role of Digitalization in Shaping the Physiotherapy Profession: A Survey"

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BACKGROUND: The global rise of digitalization has introduced various gadgets, tools and applications into the field of rehabilitation. Despite these advancements, limited information is available regarding physiotherapists' perspectives and attitudes toward digitalization and the extent to which these technologies are integrated into their daily practice. The previous researches have shown a positive influence of digitalization in physiotherapy, especially in younger physiotherapists.

OBJECTIVE: The study aims to find the impact of digitalisation in physiotherapy specifically among Indian physiotherapists.

METHODOLOGY: The sample size of 75 was calculated. The participants were asked to either complete the survey online using Google Forms or using hard copies. Participation in the survey was voluntary. The questionnaire consisted of 12 questions, aimed to assess the attitude and the use of digital tools amongst physiotherapists. By answering the questionnaire, participants gave consent to the use of the data that they had provided. Descriptive statistics was used to analyse the results. The Cronbach alpha of the questionnaire was found to be is 0.81.

RESULT: The findings of the survey showed that 48% of the physiotherapists were actively involved in digitalization of physiotherapy and around 50% had a positive opinion on using digitalisation in patient care.

CONCLUSION: The majority of participants saw high potential for digitalization in long-distance rehabilitation and communication with the patients as well as colleagues. The facilitation of work such as organization of procedures and processes was also a major advantage. Hence, digitalization can play a pivotal role in shaping physiotherapy profession,

KEY WORDS: Digitalization, Physiotherapy, Survey

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"AI-Enhanced Facial Expression Recognition in Bell's Palsy Management"

Presenter: Dr. Purusotham Chippala
Purusotham Chippala (Professor, NITTE Institute, Mangalore)

Introduction: Bell's palsy causes sudden weakness on one side of the face, leading to physical and emotional impacts. Diagnosis is often delayed due to the need for in-person assessments, especially in rural areas. This study proposes an AI-based approach to detect and monitor Bell's palsy through accessible, at-home solutions.

Aim: To create an AI-powered tool that detects and tracks Bell's palsy symptoms through facial selfies.

Objectives: Develop an AI model to detect facial paralysis and assess its severity.

Methods: - Data Collection: Gather facial images from public datasets and partner clinics.

- Model Development: Use facial recognition AI to detect and grade facial asymmetry.

- Telemedicine Integration: Implement a mobile app allowing patients to upload selfies and track recovery, offering telehealth support as needed.

Expected Results: - Tool Accuracy: Reliable detection and classification of Bell's palsy symptoms, comparable to in-person assessments.

- Enhanced Access: Patients in remote areas can easily access screening and monitoring through the app.

- Patient Engagement: The app enables self-monitoring, encouraging adherence to recovery protocols.

Summary: This AI-based tool will address limitations in traditional diagnostic methods by offering a scalable, remote solution for Bell's palsy detection and monitoring, especially in underserved areas.

Discussion: The proposed tool promises to reduce diagnostic delays, improve patient accessibility, and support continuous monitoring. With a user-friendly app, this study aims to empower patients and alleviate burdens on healthcare providers, setting a precedent for AI applications in facial paralysis management.

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Comparison between Epley and Gans Repositioning Maneuvers for Posterior Canal BPPV: A Randomized Controlled Trial

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Objectives: Benign paroxysmal positional vertigo (BPPV) is a condition in which a patient gets severe vertigo on moving his head from one position to another. This study aims at comparing the traditional maneuver Epley repositioning maneuver (ERM) and the newly emerged maneuver Gans Repositioning maneuver (GRM).

Methods: Study is a randomized controlled trial on Posterior canal BPPV patients. Two hundred and thirty four patients with BPPV (PC BPPV) of the posterior canal, diagnosed using the Dix hallpike test (DH test), were recruited for the study as per random allocation. Two groups were divided by the random allocation method. One group was treated with the Epley maneuver and the other with Gans maneuver by two separate physiotherapists.

Main Outcome Measures: DH test negativity (absence of vertigo and nystagmus), Vertigo Analogue Scale (VAS), and Dizziness Handicap Inventory (DHI). Twenty four hours post treatment assessments and data analysis were conducted by another (third) therapist. A one month follow up subjective assessment was performed.

Results: Results of one variable Chi square tests revealed significant improvement (P<.0001) in maximum (95%) patients of both groups whether subjects were given GRM or ERM. Also, objective improvement (DH test) was found in the Epley group (n=118, 82.20%) and the Gans group (n=116, 78.44%). Patients in both groups improved significantly with no dizziness on the VVAS scale (n=118, 82.20%) in the Epley group and (n=116, 78.44%) in the Gans group.

Conclusion: GRM is as easy, effective, and safe maneuver as the ERM with the absence of recurrence for the treatment of posterior canal BPPV.

Trial Registration: Clinical Trials Registry (CTRI/2019/10/021681).

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Preliminary validation of an innovative functional dual-task mobility assessment for gait evaluation in elderly with Type 2 diabetes mellitus

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Background: Type 2 diabetes mellitus (T2DM) has been linked with alterations in cognition and gait in the elderly population. Existing clinical measures of dual-task gait lack the inclusion of constructs close to real-life environments and evaluation of contextual factors influencing mobility among the elderly with T2DM.

Purpose: To test the structural validity and concurrent validity of an innovative functional dual task mobility assesment for gait evaluation in real life environment for elderly with T2DM.

Methods: Hundred elderly individuals with T2DM were recruited from the community settings. Dual task mobility assesment included walking and talking on phone, crossing traffic signal, walking and remembering list of fruits, walking and counting grocery bill and navigating directions on stairs. The concurrent validity evaluation was done by comparing the scores of the taxonomy with Dynamic gait index(DGI).

Results: The contents of the taxonomy demonstrated good internal consistency with Cronbach's alpha score of 0.86. All the contents had factor loadings between 0.6 to 0.8. Concurrent validity evaluation with dynamic gait index demonstrated a strong positive correlation with a correlation coefficient of 0.8.

Conclusion: The taxonomy of cognitive-motor tasks has good internal consistency, structural validity, and a good positive correlation with DGI.

Implication: It has the potential to differentiate the elderly with T2DM who have mild, moderate, and severe CMI and to identify the elderly with T2DM without CMI. Further validity and reliability evaluation on a large sample of elderly with T2DM is required for the generalizability of the findings.

Keywords: Cognitive-motor interference, Dual-task, Elderly, Type 2 diabetes mellitus, Aging

Resistance Exercises Interventions in Optimizing Glycemic Control and Quality of Life in Type 2 Diabetes- A Systematic Review.

Yuthika Rao (PhD Scholar, Associate Prof, Mahatma Gandhi College, MGUMST, Jaipur)

Background: Type 2 diabetes (T2D) is a chronic metabolic disorder characterized by insulin resistance and poor glycemic control. Managing glycemic levels and improving quality of life (QoL) are key goals in T2D care. Resistance exercise (RE) is increasingly recognized as an effective intervention for improving insulin sensitivity and metabolic health in T2D.

Aims This systematic review aims to evaluate the effects of resistance exercise on glycemic control and QoL in individuals with T2D. The review focuses on determining whether RE can optimize metabolic outcomes and enhance overall health and well-being.

Methods A comprehensive search was conducted across several databases, including Cochrane Library, PubMed, and Scopus, to identify relevant randomized controlled trials (RCTs) and clinical studies published from year 2020 to 2024. Eligible studies were those that investigated resistance exercise interventions in T2D populations and reported outcomes on glycemic control and QoL. Data extraction and analysis were performed to summarize the findings across the included studies.

Results The findings indicate that resistance exercise significantly improves glycemic control, with reductions in HbA1c and fasting blood glucose. RE also contributes to enhanced muscle strength, physical fitness, and overall QoL. These effects were particularly noticeable with regular, moderate-intensity exercise routines.

Conclusion Resistance exercise is an effective intervention for optimizing glycemic control and enhancing QoL in individuals with T2D. Standardizing RT protocols and evaluating the long-term effects of RT on glycemic control and related complications in T2DM are areas for future research.

Keywords- Resistance Exercises, Type 2 Diabetes, Glycaemic Control, Quality of Life

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"CHALLENGES AND OPPORTUNITIES IN INTEGRATING EXERCISE INTO MENTAL HEALTH TREATMENT: A CLINICIAN'S PERSPECTIVE"

Vidhi Gupta (Asst Prof, Mahatma Gandhi College, MGUMST, Jaipur)

Background: Interventions involving exercise have shown efficacy in alleviating depressive and anxiety symptoms and offer significant benefits without the adverse effects and financial implications associated with antidepressants and psychotherapy. The Australian Physiotherapy Association (APA) emphasizes the expertise of physiotherapists in addressing musculoskeletal and cardiorespiratory concerns in patients with severe mental health conditions. This study aims to identify the challenges faced in connecting physiotherapists and mental health clinicians while proposing potential solutions.

Materials & Methods: A descriptive exploratory research design was employed, involving interviews with 15 mental health clinicians with experience treating patients with mental health issues. The objective was to investigate the clinicians' perspectives regarding (i) the role of exercise in the treatment of mental health conditions, (ii) their practices in advising or referring patients for exercise treatment, and (iii) the challenges encountered in either referring patients or integrating exercise into mental health treatment protocols.

Statistical Analysis: Thematic analysis was utilized to explore the perceptions of mental health clinicians regarding integrating exercise into mental health treatment frameworks.

Results: The findings underscore the clinicians' understanding of the significance of exercise in addressing mental health concerns such as stress, depression, and anxiety. Additionally, developing a multidisciplinary mental health team is recommended to advocate for including exercise as an adjunct to standard care treatments, thereby promoting improved clinical outcomes. Enhanced training for staff and improved inter-departmental communication are vital for developing referral policies and integrating exercise as a fundamental component of treatment.

Keywords: Exercise, Stress, Anxiety and Depression, Mental Health Clinician,

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Virtual Reality- the 3D simulated digital playground for older adults in improving the quality of life – A scoping review

Ruchita Narsia (Asst Prof, NITTE Institute, Mangalore)

Background : In today's era, technology profoundly influences various aspects of individual lives, making services more accessible, feasible, and cost-effective. Physiotherapists play a vital role in assessing, educating, and rehabilitating older adults, thereby enhancing their quality of life through the Biopsychosocial approach. The integration of emerging technologies, such as Virtual Reality, into the healthcare sector is transforming traditional practices. From its inception to implementation, Virtual Reality has consistently demonstrated promise by providing realistic scenarios along with immediate real-time feedback.

Rationale of study : In the recovery phase, certain necessary muscle actions and joint movements can become challenging to execute with traditional approaches, potentially hindering essential activities of daily living and resulting in decreased motivation. Therefore, incorporating rehabilitation with virtual reality has the potential to yield superior outcomes and enhance patient engagement in their treatment.

Methodology : The scoping review was conducted following the Arksey and O'Malley framework.We searched various electronic databases from the year 2017 to 2024. Two independent reviewers screened the articles.

Results : Following a thorough review of 51 articles, only 10 articles met our inclusion criteria, focusing on Virtual reality being an educational as well as assessment tool while few others focused on improving the outcomes by promoting advancements in their physical and cognitive health.

Conclusion : Virtual reality presents valuable opportunities to Physiotherapists by delivering education, assessment as well as rehabilitation an engaging alternative to traditional methods.

Key Words : Virtual reality, Oculus Quest 2, ADL, Rehabilitation, Older adults,Quality of life

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The Comparative Analysis of Cranial Electrical Stimulation & Cranio Sacral Therapy in Conjunction with Brain Gym Exercises on Anxiety & Stress Symptoms: A Randomized Clinical Trial

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Background: Anxiety & Stress disorders are among the most prevalent mental disorders and are usually treated with medications and psychotherapy. The role of physiotherapy is limited. We used a randomized clinical trial to evaluate the efficacy of cranial electrical stimulation & Cranio sacral therapy in conjunction with brain gym exercises to treat the same by using outcome measures like the salivary cortisol test as a biomarker & DASS-21 questionnaire.

Purpose: This study aims to evaluate and compare the effectiveness of Cranial Electrical Stimulation & Cranio Sacral Therapy and brain gym exercises on Stress & Anxiety.

Methodology: We conducted a randomized clinical trial with 15 participants in each group. Group A received Cranial electrical stimulation and brain gym exercises, while Group B received Craniosacral therapy and brain gym exercises over 46 days. Each session lasted up to 45 minutes on alternate days. We conducted salivary cortisol test, and DASS-21 questionnaires, and used the PEDro scale before and after the intervention, obtaining consent from every participant.

Result: T-tests were used for intra-group comparisons, while paired T-tests were utilized for inter-group comparisons, where the results of group A showed statistical significance compared to group B.

Conclusion: Group A showed a significant reduction in salivary cortisol levels, indicating a decrease in stress and anxiety. While craniosacral therapy improved scores on the DASS-21 it did not have a noticeable effect on cortisol levels. Conversely, CES notably improved symptoms of stress and anxiety.

Keywords: cranial electrical stimulation, anxiety, stress, Salivary cortisol

"PREVALENCE OF BURNOUT SYNDROME AND MUSCULOSKELETAL DISORDERS AMONGST CLINICAL PHYSIOTHERAPISTS AND ACADEMICIANS IN SOUTH GUJARAT – A SURVEY"

Neha V Vaidya (Asst Prof, MB Gohil Institute of Medical Science, Navsari, Gujarat)

Background: Burnout Syndrome (BOS) is a psychological condition related to work stress, often affecting individuals without prior mental health issues. Musculoskeletal disorders (MSDs), common among healthcare workers like physiotherapists, can lead to chronic injuries. This study examines the prevalence of BOS and MSDs among clinical physiotherapists and academicians in South Gujarat.

Methodology: A survey was conducted with 267 participants—161 clinical physiotherapists and 89 academicians. BOS was assessed using the Maslach Burnout Inventory, and MSDs were evaluated with the Nordic Musculoskeletal Questionnaire. A correlation analysis explored the relationship between BOS and MSDs.

Results: Among physiotherapists, 70% reported low emotional exhaustion (EE), 47% low depersonalization (DP), and 39% low personal accomplishment (PA). The neck region had the highest MSD prevalence (41.61%). Mean BOS and MSD scores were 14.25±8.88 and 1.68±1.81, respectively. A weak positive correlation ($r = 0.35$) between BOS and MSDs was found ($p > 0.5$). For academicians, 73% had low EE, 58% low DP, and 66% low PA, with MSD prevalence at 59.55%, primarily affecting the neck (33%). Mean BOS and MSD scores were 28.51±1.03 and 10.60±1.11, respectively, with a weak positive correlation ($r = 0.30$) ($p > 0.5$).

Conclusion: The study reveals high BOS prevalence with low dimensions and significant neck MSDs in both groups. Weak correlations suggest BOS and MSDs are associated but not directly dependent.

Keywords: Burnout Syndrome, Musculoskeletal Disorders, Clinical Physiotherapists, Academicians, Prevalence.

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End user experiences in using mobile application for rehabilitation after knee replacement- Findings from a pilot study

Purnima Shrivastava[1], Siaa Girotra[1], Sabhya Pritwani[1], Ajit Kumar[2], Arun M Swamy[2], Sahil Batra[2], Neetu Sharma[2],Renu John[1], Praveen D[1], Sridevi Gara[1], Rajesh Malhotra[3], Niveditha Devasenapathy[1]

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Background Physical rehabilitation is an integral part of recovery following knee replacement. There is a gap in continuum-of-care after patients are discharged to home. To address this, we designed an mHealth intervention to facilitate rehabilitation by educating patients about recovery, providing tailor-made exercise videos for self-management, monitoring progress, conducting remote consultation to modify exercises. The goal was to improve exercise adherence and achieve better functional outcomes. Here we are sharing expectations and experiences of end-users who participated in the pilot study

Methods Consecutive thirty consenting adult participants scheduled for knee arthroplasty were enrolled from AIIMS, New Delhi if they or their caregivers had an android smartphone irrespective of their digital literacy. We maintained notes of all observations made during enrolment and periodic check-in calls. After at least one month of app usage, 13 willing participants with varying levels of app usage were interviewed via telephone using a semi-structured interview guide. Feedback was obtained from physiotherapists who pilot tested. Two researchers independently coded the transcribed and translated transcripts using inductive-deductive approach for a thematic analysis.

Results Users valued the app-based support (exercise videos and video consultations) as it reduced clinic visits and gave better opportunity to connect with physiotherapists. However, several patients (n=11) did not use the app, the common reasons being having a private physiotherapist or a full-time attendant to help with their exercises or inability to navigate the smartphone independently (n=7). Pain and fear of doing exercise on their own were common reason for seeking external physiotherapist. Physiotherapists found app helpful for providing continuum-of-care and strongly felt patient tech literacy was crucial for better uptake. End-users feedback was used to update the app and the intervention package.

Conclusion mHealth interventions are suitable only to a subset of individuals with a smartphone. Learnings from the pilot phase helped us to refine the intervention.

Keywords : mHealth intervention, knee replacement, rehabilitation, experiences, end-users (CTRI registration: CTRI/2024/06/068838)

Effectiveness of proposed Information Education & Communication (IEC) Intervention &Epidemiological study on Tuberculosis & respiratory diseases patients visiting a tertiary care Institute: systematic review

Priyanka Sharmaa, Dr Mohd. Shannwazb, Prof.(Dr.) Khalid Umer Khayyamc
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b Associate Professor, Amity Institute of Public Health & Hospital Administration, Amity University, NOIDA
c Consultant, Epidemiology & Public Health, National Institute of Tuberculosis & Respiratory Diseases

Objective To review the literature on health literacy levels and explore their relationship with tuberculosis treatment adherence and outcomes.

Methods Author independently searched PubMed®, Embase, CINAHL, PsycINFO, Scopus, LILACS, Global Health Medicus, and ScienceDirect for articles published between January 2000 and September 2023 that addressed health literacy and tuberculosis. Limited health literacy was defined as an individual's inability to comprehend, process, or make decisions based on health- related information. The methodological quality and risk of bias were assessed using the JBI critical appraisal tools. A random effects model was used to evaluate the pooled proportion of limited health literacy, its association with treatment adherence, and its impact on tuberculosis-related knowledge.

Findings Out of 5813 records reviewed, 22 studies met the inclusion criteria. The meta-analysis found that 51.2% (95% confidence interval [CI]: 48.0–54.3) of tuberculosis patients had limited health literacy. In four studies, patients with lower health literacy were less likely to adhere to tuberculosis treatment regimens (pooled odds ratio: 1.95; 95% CI: 1.37–2.78). Three studies indicated a significant association between lower health literacy and insufficient knowledge of tuberculosis (pooled correlation coefficient: 0.79; 95% CI: 0.32–0.94).

Conclusion : Health literacy is closely linked to tuberculosis treatment adherence and outcomes. Lower health literacy can impede patients' ability to follow treatment protocols effectively. Enhancing health literacy is critical for improving treatment outcomes and is a vital strategy in combating tuberculosis.

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PREVALENCE OF BENIGN PAROXYSMAL POSITIONAL VERTIGO IN AN ELDERLY PEOPLE- A CROSS-SECTIONAL STUDY"

Dr Ekta Mehta[1] Assistant Professor, P P Savani University, Surat, Gujarat

Background: Dizziness is a prevalent complaint among the elderly, significantly contributing to fall risks, morbidity, and mortality. Approximately 85% of individuals over 65 years experience dizziness, often linked to inner ear disorders, with benign paroxysmal positional vertigo (BPPV) being the most common. This study aimed to estimate the prevalence and incidence of BPPV in an elderly population.

Methods: A cross-sectional study was conducted on 234 participants aged 65 and above, selected randomly. Data collection included administering the Dizziness Handicap Inventory (DHI) questionnaire, followed by the Dix-Hallpike maneuver and Head Roll test by a blinded therapist to confirm BPPV. Patients were referred for ENT consultation and pure tone audiometry. Cervical screening and Wallenberg tests were performed to rule out contraindications like vertebrobasilar insufficiency.

Results: The prevalence of BPPV was 27.36%, with significantly higher cases in females (78.13%) compared to males (21.87%). Posterior semicircular canal (SCC) involvement (45 cases) was more frequent than anterior SCC (11 cases) or horizontal SCC (8 cases). Right-side BPPV was predominant (53.13%), followed by left-side (40.63%) and bilateral cases (6.25%). A strong correlation ($r = 0.712$) between DHI scores and BPPV was identified, indicating that higher DHI scores increased the likelihood of positive BPPV diagnosis.

Conclusion: BPPV is common in elderly individuals with vertigo and fall history, particularly in females. Posterior canal involvement is most prevalent. The significant correlation between DHI scores and BPPV underscores its role in assessment. Early detection and referral for ENT services are crucial for effective management.

Keywords: BPPV, Elderly, Dizziness, Vertigo, DHI

AN INTEGRATIVE REVIEW OF CRANIAL ELECTRICAL STIMULATION APPROACH TO THE TREATMENT OF ADULTS WITH ANXIETY

Ashutosh Sharma[1], Madhusudan Tiwari[2], Atul Singh[3]
1. PhD scholar, Department of Physiotherapy, Mahatma Gandhi Medical College, Jaipur & Associate professor , Department of Physiotherapy, Jaipur National University;
2. Dean & Principle, College of Physiotherapy, Mahatma Gandhi Medical College, Jaipur
3. Assistant Director & HoD, Department of Physiotherapy, Jaipur National University, Jaipur

BACKGROUND: Generalized Anxiety disorders (GAD) are the most prevalent psychosomatic disorder that can negatively impact an individual's health and ability to function in daily life. Pharmacological and psychological therapy are among the evidence-based treatments for these illnesses that have demonstrated little success, but they do lessen the intensity of some of the accompanying symptoms. This review aims to examine the long-term effects of cranial electrical stimulation (CES) on individuals with GAD, as the lack of evidence makes it difficult to determine its long-term effectiveness due to the absence of evidence.

Methods : An integrative literature review was conducted to examine the long-term effects of craniosacral electrical stimulation (CES) on adult individuals with anxiety disorders. Quantitative, qualitative and conceptual data were identified from PubMed, Ebsco, CINHAL, PEDro findings were appraised and synthesised using thematic analysis strategies, the Mixed Methods Appraisal Tool (MMAT) and the Critical Appraisal Skill Program (CASP).

Results : Total 23 studies were included in the review. Major findings were despite improvements in emotional control, sleep quality, and mental health, the integrative review finds limited data which support long-term advantages of cranial electrical stimulation in lowering the symptoms of anxiety disorders. Studies were qualitatively analysed based upon the criteria of SNARA and PeDro.

Conclusion : Patients with Generalized Anxiety disorders can benefit from CES's somewhat effective reduction of anxiety symptoms. Additionally, CES was accepted and well-tolerated.

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ROLE OF BIOPSYCHOSOCIAL APPROACH AND THERAPEUTIC ALLIANCE IN THE MANAGEMENT OF CHRONIC LOW BACK PAIN – A NARRATIVE REVIEW

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Low back pain (LBP) is a prevalent and complex condition that significantly impacts individuals' quality of life and functioning. The biopsychosocial model offers a comprehensive framework for understanding and managing LBP by considering the interplay between biological, psychological, and social factors. Despite the theoretical endorsement of the biopsychosocial model, there is evidence suggesting that physiotherapists often emphasize biomechanical and physical aspects in their treatment approaches. This may lead to inadequate addressing of psychological and social factors that are crucial for recovery. Developing a positive therapeutic alliance is crucial for improving outcomes in low back pain management. By focusing on building trust, providing patient-centered care, setting realistic goals, offering- education and support, and ensuring continuity and consistency, practitioners can create a strong therapeutic relationship with their patients. This, in turn, can lead to better adherence to treatment plans, enhanced patient satisfaction, and improved clinical outcomes.

Keywords: Therapeutic alliance; Biopsychosocial approach; Chronic Low Back Pain

"Effectiveness of Acupuncture in Managing Tinnitus: A 6-Week Single-Subject Study Using Tinnitus Severity Index and Visual Analog Scale"

Ashish Mathur, Professor, PP Savani University, Surat

METHODS: A 40-year-old female with Right ear tinnitus of 2-year duration underwent weekly acupuncture sessions for 6 weeks, with each session lasting 40 minutes.

Following Acupuncture points (GB20, SJ17, SJ21, SI19,GB2, KI3, KI7, SJ5, DU20, PC6, Anmian I , Anmian II and LI4) along with Ear Acupuncture points were used in the treatment protocol. Outcomes were measured using the Tinnitus Severity Index (TSI, range 0-48) and Tinnitus Visual Analog Scale (T-VAS, range 0-10), with assessments conducted at baseline, weekly during treatment, and at the conclusion of the intervention.

RESULTS: The patient demonstrated significant improvement in tinnitus symptoms over the treatment period. TSI scores showed a 50% reduction from baseline, while T-VAS scores decreased by 62.5%. The most substantial improvements were observed during weeks 2-4 of treatment. No adverse effects were reported throughout the intervention period, and the treatment was well-tolerated by the patient.

CONCLUSION: This single case study suggests that acupuncture may be an effective intervention for managing tinnitus symptoms, as evidenced by significant reductions in both TSI and T-VAS scores. The findings indicate potential therapeutic benefits of acupuncture for tinnitus management, though further research involving larger sample sizes and controlled conditions is necessary to validate these results and establish clinical guidelines for treatment protocols.

Keywords: Tinnitus, Acupuncture, Tinnitus Severity Index, Visual Analog Scale

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Clinical outcomes of TECAR therapy in rehabilitation medicine: A comprehensive Systematic review and Meta-analysis

Mehnoor Khatoon (Clinical therapist at Sharda Charitable Clinic, Hauz Khas Delhi-110014)

Aim: Tecar therapy, or Transfer of Energy Capacitive and Resistive, has emerged as apromising modality in physical rehabilitation, particularly in musculoskeletal and neurological conditions. Its purported benefits include pain reduction, enhanced tissue healing, and improved functional outcomes. However, the evidence supporting its efficacy across various clinical settings remains inconclusive.

Objective: This systematic review and meta-analysis aim to evaluate the effectiveness of Tecar therapy in managing musculoskeletal and neurological conditions, focusing on pain relief and disability.

Methods: Database searches were conducted for full-texted randomized trials investigating the effect of INIT on different musculoskeletal conditions till 10 November 2024. Quality was assessed using the Risk of Bais 2, Pedro, and grading of recommendation, assessment, development, and evaluation approach GRADE approach. Wherever possible, studies were pooled for meta-analysis or subgroup metanalysis, with pain, and disability.

Result: Thirty eight included Studies covered both musculoskeletal and neurological conditions: Knee Pathologies (N=8, Including Osteoarthritis, Patellofemoral Pain, ACl\ Reconstruction) , Lower Back Pain(N=11), Neck Pain (N=3), 1 Shoulder Impingement(N=1), Diabetes (N=3), Ankle Sprain (N=1), Pelvic Pathologies (N=4), 6 Muscle Flexibility (N=6), Dom's (N=1), Stroke(N=1) And Carpal tunnel syndrome(N=1). Results revealed Low to moderate-quality evidence suggesting TECAR improves pain (SMD=-0.72)(CI=-1.29—0.15) when compared to conventional treatment, other interventions, or no treatment in individuals suffering from back pain. Moreover, Meta-analysis performed on limited studies for neck pain and muscle flexibility also demonstrated significant improvement in pain and improvement in flexibility.

Conclusion: Low to moderate-quality evidence indicates TECAR therapy is more clinically effective than conventional, other treatments and no treatment in reducing disability, alleviating and could be recommended for individuals suffering from lower back pain. However, further research is needed on other conditions to get greater insight into effect of TECAR on other musculoskeletal and neurological condition.

Keywords: TECAR therapy, Shortwave diathermy, Electrotherapy, Meta analysis

The Effect of Anxiety on Forward Head Posture in the Elderly Population

Huma Zahoor Ahmed Siddiqui 1, Amit Saraf 2, Meenakshi Singh 3
1 PhD Scholar, Teerthanker Mahaveer University, Moradabad, 2 Head, Department of Orthopedics, Teerthanker Mahaveer University, 3 Professor, Institute of Applied Medicines and Research, Ghaziabad.

Background: Forward head posture (FHP) is a common postural abnormality in the elderly that contributes to neck pain, impaired balance, and reduced quality of life. Emerging evidence suggests a significant role of psychological factors, particularly anxiety, in exacerbating FHP. Despite these indications, the relationship between anxiety and FHP remains underexplored in elderly populations.

Objective: The primary aim of this study was to evaluate the association between anxiety levels and FHP severity in the elderly, using the Hamilton Anxiety Rating Scale (HAM-A) for anxiety assessment and the craniovertebral angle (CVA) for posture measurement. A secondary objective was to explore the influence of physical activity levels and demographic factors on this relationship.

Methods: This cross-sectional study included 100 participants aged 65 years and above, recruited from community centers and outpatient clinics. FHP was assessed by measuring the CVA from lateral-view photographs, and anxiety was evaluated using the HAM-A. Statistical analysis involved Pearson's correlation and multiple regression to assess the relationship between CVA and anxiety, while controlling for confounders such as age, gender, and physical activity levels.

Results: The mean age of participants was 72.4 years (SD = 5.6), with females comprising 60% of the sample. The average CVA was 48.3 degrees (SD = 5.2), and the mean HAM-A score was 18.7 (SD = 7.4). A significant negative correlation was observed between HAM-A scores and CVA ($r = -0.45$, $p < 0.01$), indicating that higher anxiety levels were associated with more pronounced FHP. Participants engaging in regular physical activity exhibited better posture and lower anxiety levels.

Conclusion: This study highlights a significant association between anxiety and FHP severity in the elderly. Anxiety may contribute to FHP through increased muscle tension and impaired postural control. These findings underscore the need for integrated interventions addressing both psychological and physical aspects of health to improve posture and enhance quality of life in aging populations. Future research should explore longitudinal effects and evaluate the efficacy of combined therapeutic approaches.

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Effect of Vagal Stimulation on Skin Hydration and Heart Rate in Prehypertensive Individuals

Monika Sharma(PhD Scholar, SBS University), Maneesh Arora (Professor, SBS University, Dehradun), Shagun Agrawal (Dean, Galgotias University)

Background: Prehypertension is a global health concern that, regardless of whether it develops into overt hypertension, doubles a person's risk of cardiovascular disease which may result in mortality. Its prevalence rate, which ranges from 21.9% to 52%, differs significantly between nations. It's an alarming situation and special attention is required to hault its progression to hypertentension on part of health care professionals. Vagal stimulation is frequently employed by therapists, along with various therapeutic exercises, to treat or manage Heart Rate (HR) and BP in prehypertensive individuals. The vagus nerve plays a vital role in maintaining homeostasis, which includes reflex pathways that regulate cardiac function. Epidermis hydration measurement is also an important tool to assess sympathetic balance. Skin hydrometer is a portable device that measures moisture and oil levels of skin through impedance method, it is cheap and has small dimensions, but this equipment has not yet been cited in the scientific literature. The purpose of this study was to examine the effect of Vagal Stimulation on Skin Hydration (SH) and HR in Prehypertensive individuals. 30 individuals (mean age 40.4± 7.84 years) were assessed to determine SH and HR.

Materials and Methods: 30 subjects had skin hydration and Heart Rate measurement on forehead before the intervention. Initially a disinfection of the auricular pavilion was performed with a cotton dab with 70% alcohol. Then electrical auricular neuromodulation of the vagus nerve was performed using a TENS device. The electrodes were placed on the tragus (cathode) and the ear lobe (anode) with a pulse width of 120 ms and pulse frequency of 25 Hz. The intensity was controlled to comfortable range. The stimulus was continuously applied for 30 minutes for 4 weeks, 5 days in a week. Post intervention measurement was done after 4 weeks.

Results: The mean ± S.D. values of HR is shown as 97.00 ± 1.7 during before treatment, while after treatment shows as 84.00 ± 1.7, which shows the t-value as 15.231 with the p-value of < 0.001. The mean ± S.D. values of SH in males is shown as 35.13 ± 1.98 during before treatment, while after treatment score is manifested as 34.13 ± 2.57, which shows the t-value as 14.157 with the significant p-value as .001.

Conclusion: The conclusion of the study is that Vagal Stimulation is effective in improving SH and HR in Prehypertensive individuals.

Keywords: capacitance, impedance, skin hydration, stratum corneum

Epidural Stimulation and Tyromotion in Restoring Balance and Motor Function After Spinal Cord Injury- A Review

Surbhi Kaura[1], Shahiduz Zafar[1], Pritam Majumdar[2] Nidhi Arora[3] [1]Galgotias University, Greater Noida UP India [2] Neuraxis K.M Trade Tower, Vaishali, India [3] Serensa Health Gurgaon India

Spinal cord injuries (SCIs) severely compromise motor abilities and balance, significantly affecting the quality of life for those impacted. Recent developments in rehabilitation technologies, notably epidural stimulation (ES) and Tyromotion, have emerged as promising avenues for improving recovery outcomes. SCIs often lead to pronounced deficits in gait and balance due to disrupted neural pathways. Research indicates that epidural stimulation can activate previously inactive spinal pathways, enhancing voluntary movement and overall motor function. Additionally, when neuromodulation is paired with robotic-assisted training, it can lead to significant improvements in functional recovery.

This review focuses on the integration of ES and Tyromotion, emphasizing their combined effects on restoring motor function and enhancing balance post-SCI, ultimately contributing to a better quality of life. The review delves into the mechanisms that underpin epidural stimulation, which aids in neural circuit reorganization and promotes voluntary movement, alongside the innovative balance training provided by Tyromotion's robotic-assisted therapy. Clinical findings suggest that the combination of these interventions results in substantial improvements in functional mobility and overall rehabilitation effectiveness.

Furthermore, this review addresses the challenges related to implementation, patient selection, and the necessity for personalized treatment protocols. The goal is to present a comprehensive overview of how integrating epidural stimulation with Tyromotion represents a revolutionary approach to spinal cord injury rehabilitation, laying the groundwork for future research and clinical practices.

Keywords: Epidural stimulation, Tyromotion, spinal cord injury, rehabilitation, motor function, balance.

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SCHEDULE
OF
PAPER PRESENTATION

HALL	DATE 14/12/2024 2 PM TO 5 PM	DATE 15/12/2024 9:30 AM TO 1 :30 PM
LT 1	SENIOR ORTHO - 15	JUNIOR ORTHO = 20
LT 2	SENIOR MISC - 16	JUNIOR ORTHO = 7 JUNIOR MISC = 14 TOTAL = 21
LT 3	SENIOR ORTHO = 3 SENIOR SPORTS = 5 JUNIOR SPORTS = 7 TOTAL = 15	JUNIOR CARDIO = 12 JUNIOR SPORTS = 4 TOTAL = 16
CMET	SENIOR CARDIO = 3 SENIOR NEURO = 11	JUNIOR NEURO = 18

Note: The name of the Faculty Incharge/Co-ordinator shall be displayed on the venue on the day of presentation

DATE 14/12/2024

SATURDAY 2 PM TO 5 PM

VENUE – LT 1 – **SENIOR ORTHO - 15**

S NO	NAME	TITLE
1	PRAGNA SATISH MALDIKAR	Identification of lower-crossed syndrome among IT professionals
2	VIMAL CB	Effect of NM exercise and specific muscle training on knee flexion angle, gait speed & physical function in patients with unilateral knee OA
3	JIBRAN AHMED KHAN	Comparing the effects of Dry Cupping to the manual therapy for plantar fasciitis: A randomised controlled trial
4	SINDHUJA	Effectiveness of Mckenzie method of evaluation and treatment for mechanical disorders of knee
5	KRISHNA PRASAD K M	Online survey among Indian PTs on awareness and rehabilitation of proprioception impairment in NSLBP
6	NAMRATA SRIVASTAVA	To study the effect of ultrasound and VMO strengthening exercises in PF OA pain -A Literature Review
7	LOPA DAS	Inflammatory Biomarkers among patients with chronic nonspecific neck
8	ARCHANA VERMA	Neck Pain in the Digital Age - Modern Era Pain; Prevalence and Impact among Health Workers
9	MADHUSUDAN TIWARI	“Comparative study of Isometric Exercises combined with Mobilization with Movement (MWM) VS Progressive resistance Exercises on Pain, Walking Speed and Physical Function in OA Knee”
10	DEVENDRA SINGH SHEKHAWAT	Improving pain and disability in lower back pain with neural mobilization – A systematic review
11	M.SRI SHANKAR	Effect Of Egoscue Exercise Versus Lumbar Stabilization Exercise On Pain And Lumbar Lordosis In Patient With Nslbp
12	SHRUTI SHARMA	A Narrative Review of the Thoracolumbar Fascia and Its Role in Non-Specific Low Back Pain
13	KRITI KHANNA	Effect of multimodal physical rehabilitation protocol on standing and walking time in elderly with leg pain in low grade degenerative lumbar spondylolisthesis: a prospective case-control study
14	SALEEM AKHTAR NAQVI	Effect of Mulligan SNAGs and Maitland Central PA in subjects with lumbar radiculopathy
15	PALLABI GOSWAMI	Changes in Cranio-vertebral angle associated with extended Smartphone use-A literature review

VENUE – LT 2 - **SENIOR MISCELLANEOUS** - 16

S. NO	NAME	Title
1	PURUSOTHAM CHIPPALA	Ai-Enhanced Facial Expression Recognition In Bell's Palsy Management
2	RUCHITA NARSIA	Virtual Reality- The 3d Simulated Digital Playground For Older Adults In Improving The Quality Of Life
3	NEETU RANI DHIMAN	Comparison Between Epley And Gans Repositioning Maneuvers For Posterior Canal Bppv: A Randomized Controlled Trial
4	SUMAM SUNNY	Preliminary Validation Of An Innovative Functional Dual-Task Mobility Assessment For Gait Evaluation In Elderly With Type 2 Diabetes Mellitus
5	YUTHIKA RAO	Resistance Exercises Interventions In Optimizing Glycemic Control And Quality Of Life In Type 2 Diabetes- A Systematic Review
6	VIDHI GUPTA	"Challenges And Opportunities In Integrating Exercise Into Mental Health Treatment: A Clinicians Perspective"
7	TANZILA MULLA	The Comparative Analysis Of Cranial Electrical Stimulation &Amp; Cranio Sacral Therapy In Conjunction With Brain Gym Exercises On Anxiety &Amp; Stress Symptoms: A Randomized Clinical Trial
8	NEHA VIJAYKUMAR VAIDYA	"Prevalence Of Burnout Syndrome And Musculoskeletal Disorders Amongst Clinical Physiotherapists And Academicians In South Gujarat – A Survey"
9	PURNIMA SHRIVASTAVA	End User Experiences In Using Mobile Application For Rehabilitation After Knee Replacement- Findings From A Pilot Study
10	PRIYANKA SHARMA	Effectiveness Of Proposed Information Education & Communication (Iec) Intervention &Epidemiological Study On Tuberculosis & Respiratory Diseases Patients Visiting A Tertiary Care Institute: Systematic Review"
11	ASHUTOSH SHARMA	An Integrative Review Of Cranial Electrical Stimulation Approach To The Treatment Of Adults With Anxiety
12	EKTA MEHTA	Prevalence Of Bppv In Elderly People- A Cross-Sectional Study
13	SHAZIA MATTU	ROLE OF BIOPSYCHOSOCIAL APPROACH AND THERAPEUTIC ALLIANCE IN THE MANAGEMENT OF CHRONIC LOW BACK PAIN- A Narrative Review
14	ASHISH MATHUR	Effectiveness Of Acupuncture In Managing Tinnitus: A 6-Week Single-Subject Study Using Tinnitus Severity Index And Visual Analog Scale
15	MONIKA SHARMA	Effect Of Vagal Stimulation On Skin Hydration And Heart Rate In Prehypertensive Individuals
16	HUMA SIDDIQUI	The Effect Of Anxiety On Forward Head Posture In The Elderly Population

VENUE – LT 3 - SENIOR ORTHO = 3, SENIOR SPORTS = 5, JUNIOR SPORTS = 7

SENIOR ORTHO = 3 (Remaining Authors)

16	POOJA BHATI	Impact Of Glycaemic Control And Disease Duration On Neuromuscular Dysfunction, Fear Of Fall And Fall Risk In Type 2 Diabetes Mellitus: A Pilot Investigation
17	VINIKA SIWACH	Impact Of Internet Addiction On Cognition, Sleep And Associated Function In Collegiates: A Cross-Sectional Study
18	MEHNOOR KHATOON	Clinical outcomes of TECAR therapy in rehabilitation medicine: A comprehensive Systematic review and Meta-analysis

SENIOR SPORTS = 5

1	RIDHI SAINI	Effect of high and low-volume nordic hamstring exercise (nhe) training on hamstring injury risk in professional soccer players
2	NEERAJ KUMAR	Effects of exercise on speed and accuracy with their correction in sports: A systemic review
3	JAYKUMAR SONI	Level of knowledge and attitude of sports injury prevention and management in athletes and coaches: a cross sectional study
4	CHACKO. P. GEORGE	Effect of circuit training exercise on reaction time in football goalkeeper: an experimental case study
5	DEVIBALAN SIVAGNANAM	Effect of wobble board training along with plyometric training program on explosive strength, agility and dynamic balance in male basketball athletes

JUNIOR SPORTS = 7

	NAME	TITLE
1	AMRUTA CHAUK	Effect of stretch-shortening exercise on strength and stability among rifle shooters.
2	RADHIKA SONI	Effect of strengthening of gluteus maximus and gluteus medius muscle on foot posture (pronation) in athletes
3	POOJA AHUJA	Prevalence of scapular dyskinesis in badminton players in vadodara: a cross-sectional study
4	SAKSHI RAJAK	Combined effect of throwers 10 programe and ballistic 6 programe on the performance of archery and shooting players :an experimental study
5	HARI SUDHARSAN R	Effects of Anderson dip exercise to enhance vertical jump among basketball players.
6	HARIHARAN . S	To compare the effects between active physical endurance training versus active stretch training in groin pain among the hockey players.
7	BARATH KUMAR. S	To compare the effectiveness of calisthenics versus ballistic exercises for patellar tendinopathy among amateur football players.

VENUE – CMET

SENIOR CARDIO = 3, SENIOR NEURO = 11

SENIOR CARDIO

S NO	NAME	TITLE
1	HEMLATA VATS	Correlation Between Anthropometric Parameters And Pulmonary Function In Healthy Young Adults: A Cross-Sectional Study
2	NITHYASRI	Evaluating Virtual Game-Based Breathing Interventions To Enhance Pulmonary Function In Individuals With Copd
3	Parijat Ghatak	Role of core muscle strengthening in improving dyspnoea and functional capacity in patients with Chronic Obstructive Pulmonary Disease (COPD)

SENIOR NEURO

S NO	NAME	TITLE
1	SWATI GUPTA	Effectiveness of Dynamic Neuromuscular Stabilization and Neurodevelopmental Therapy on Gross Motor Function and Trunk Control in Children with spastic diplegic CP: A RCT
2	NAMRATA SAKHARE	Diverse ambulatory profiles in CP: An in-depth comparative review
3	GARIMA WADHWA	Gait Improvements in Individuals with SCI through virtual reality treadmill Training: Insights from Five Case Studies
4	HARIHARA SUDAN S	Physical Therapy Induced Adult Neurogenesis and Synaptogenesis in Cognitive Function among neurological conditions- A scoping review
5	VIKRANT SALPHALE	Extracting the Potency of Ankle PNF Techniques on Balance and Gait Parameters in Patients with Stroke: A Randomized Controlled Trial
6	MANSI SONI	The Evolution of Technology: A Review of Device-Based Physical Activity Measurement in Stroke Research
7	MOHIT J AGRAWAL	Additional Effect of Alpha Music Rhythm on Cognition and Upper Limb Motor Recovery in Individuals with Chronic Stroke: An Experimental Study
8	RAHUL SHARMA	Systematic Review: The Effectiveness of Transcranial Direct Current Stimulation (tDCS) Paradigms as Treatment Options for Recovery of Language Deficits in Chronic Post-Stroke Aphasia
9	SHIVANI KUMARI	Impact of smartphone-based virtual reality programmes on balance in patients with chronic hemiplegia
10	G VELMURUGAN	Effect of VR in improving physical function of stroke patients.
11	Rajeev Kr Singh	Biopsychosocial Perspective on Chronic Stroke Rehabilitation with Hemiplegic Shoulder Pain: A Case Report

DATE 15/12/2024

SUNDAY 9:30 AM TO 1:30 PM

VENUE – LT 1

JUNIOR ORTHO – 20

S NO	NAME	TITLE
1	AKANKSHA R HEGE	Reliability Of Ai-Based Comprehensive Knee Evaluation
2	CHAYANIKA CHANGKAKOTI	Prevalence Of Low Back Pain In School Children: An Observational Study
3	POOJA PAREEK	Effects Of Mulligan Mobilization For Increasing Range Of Motion And Reducing Pain In Frozen Shoulder
4	RINA SHARMA	Musculoskeletal Disorders In Clinical Laboratory Technicians
5	VISHAKHA BADEKAR	A Role Of Neuro Dynamic Nerve Gliding In Enhancing Musculoskeletal Performance: A Narrative Review.
6	HARSHA WADHWANI	Efficacy Of Culturally Sensitive Prehabilitation In Improving Post Operative Pain And Fear Of Movement In Individuals With Lumbar Degenerative Disc Disease – An Experimental Study
7	CHANCHAL SAH	Effect Of Thoracic Mobilization On Pain, Range Of Motion And Functions In Patients With Lumbar Radiculopathy: An Experimental Trial
8	AIDA PRIYANKA	Assessing The Benefits Of Kinesio Taping On Pain And Balance In Grade III Knee Osteoarthritis: A Randomized Controlled Study
9	SALONI S SAWANT	Physiotherapy Approaches In Patients With Flatfoot- A Review
10	LUCKY KHANDELWAL	“Investigating The Various Graft Options Available For Anterior Cruciate Ligament Reconstruction Surgery: A Literature Review”
11	JENNIFER DSOUZA	“Impact Of Scapular Proprioceptive Neuromuscular Facilitation On Improving Pain, Strength And Dynamic Stability In Shoulder Impingement.”
12	VISHAMI PRAJAPATI	A Study To Compare Effectiveness Of Muscle Energy Technique And Myofascial Release Technique Among Subjects With Piriformis Tightness In Students Of Uka Tarsadia University
13	VISHAL PARMAR	Employee Well-Being - A Hollistic Approach In Treating The CVA Angle Of Prolonged Computer Usage: A Case Study.
14	KETKI NANAVATI	Effects Of Shock Wave Therapy On Pain And Performance In High Jumpers With Plantar Fasciitis- An Experimental Study
15	RANI C REJI	Effect Of Postural Correction Exercises For Forward Head Posture In Smartphone Users:A Literature Review
16	SHRUTI KUMARI	A Case Study On Physiotherapy Guidelines Post Decompression Surgery Of Lumbar Spine
17	POOJA CHAURASIA	A Physiotherapeutic Approach In The Management Of Fabella Syndrome: A Case Series
18	DHWANI LAD	Effects Of Eccentric Training On Flexibility And Strength Of Hamstring Muscle
19	GARGI ABOTI	Effect Of Mulligan Manual Therapy Of Cervical And Thoracic Spine On Forward Head Posture And Sleep Quality In Individual With Mechanical Neck Pain: A Single Arm Randomised Controlled Trial
20	ASHISH THAKURDESAI	Comparison Of Effectiveness Of Iastm With Cryotherapy And Mfr With Cryotherapy In The Management Of Patients With Tension
		Neck Syndrome.

VENUE – LT- 2

JUNIOR ORTHO – remaining 7 authors & JUNIOR Miscellaneous = 14

JUNIOR ORTHO

21	YATIKA AGARWAL	Activation Of Gluteus Maximus Muscle By Kneading Technique In College Students- An Experimental Study
22	DHANNUSH N K	Effectiveness Of Ultrasound Versus Nerve And Tendon Gliding Exercise On Pain And Functions Disability Among With Carpal Tunnel Syndrome
23	SATHYA NARAYANAN.J	The Efficacy Of Global Postural Re-Education Exercise In Work Related To Musculoskeletal Disorders Among Goldsmith
24	RITESH RAJ	Work-Related Msds And Ergonomic Risks Among Tailors- A Survey
25	AAYUSHI GUPTA	Effect Of Incline Treadmill Walking On Lower Extremity Joint Angle In Healthy Individuals
26	SHALINI MISHRA	Effect Of Eccentric VS Static Stretch Of Hamstrings Muscle On Acceleration Time In Young Adults
27	RUTUJA DESHMUKH	From Innovation To Implementation Of Exercise Adherence In PT - What Is The Scope? – A Scoping Review

JUNIOR MISCE

S NO	NAME	TITLE
1	RASIKA JADHAV	Assessing Of Balance And Flexibility Among Peri And Postmenopausal Women In Age Group Of 40-55 Year -An Observational Study.
2	SHWETA THAKAR	A Quasi-Experimental Study To Assess The Efficacy Of Acupuncture On Anxiety, Sleep Quality And Sleep Duration In Patients With Primary Insomnia
3	ISHIKA JAIN	Comparative Effect Of 8-Week High Intensity Interval Training And Circuit Training Programme On Body Composition And Body Image In Female
		Students Of University
4	AARUSHI DIHANA	To Compare The Effect Of Uterus Manual Therapy And Sacral Release Technique In Women With Dysmenorrhea- An Experimental Study
5	BORANA SIDDHI	Structured Art Therapy In Enhancing Sleep Quality Among Young Adults- An Experimental Study
6	AISHWARYA JAIN	Efficacy Of Transcutaneous Electrical Nerve Stimulation On Pain In Primary Dysmenorrhea. An Interventional Study
7	NIMISHA BOROLE	The Widespread Web Of Sleep Apnea: Beyond Snoring Linked With Various Health Problems
8	MEERA GUPTA	Reliability Of A New Smartphone Application For Measuring Cranio-Cervical Posture In Healthy Individuals
9	DEVESH MANDHYAN	“Assessing Risk Of Bias And Clinical Applicability Of Machine Learning Models For Detecting Manual Wheelchair Propulsion In Individuals With Spinal Cord Injury: A Systematic Review
10	AISHWARYA SONI	Telerehabilitation Vs Clinic-Based Rehab For Patients With Plantar Fascitis: A Comparative Study
11	ANSHIKA AGARWAL	Activity, Pain, And Productivity: A Study Of How Lifestyle Choices Shape Academic Success In Different Student Groups
12	RISHITA KAUSHIK	Feasibility Of A Four Week Exercise Training In Elderly: A Pilot Study
13	ANUJA POKALE	IMPACT: Investigating The Role Of Digitalization In Shaping The Physiotherapy Profession: A Survey
14	Aditi Singh	A Systematic Review of Interventions for Vaginismus: Evidence from Clinical and Psychological Studies

VENUE – LT – 3

JUNIOR CARDIO = 12, JUNIOR SPORTS = 4 (remaining authors)

JUNIOR CARDIO

S NO	NAME	TITLE
1	AARTI BELWAL	Effect Of Inspiratory Muscle Training On Autonomic Nervous System In Cervical Spinal Cord Injury Individuals
2	AISHWARYA	Effect Of Massage Therapy On Sleep Quality In Patients With Coronary Artery Bypass Graft Surgery: A Systematic Review
3	NARENDIRAN B	IMPACT OF AEROBIC EXERCISE VS RESISTED EXERCISE PROGRAM AMONG MIDDLE AGED MEN WITH CARDIOVASCULAR RELATED RISK Factors
4	SMRITI SINGH	Association Of Body Composition With CV Fitness, Endurance, Flexibility And Strength Among Collegiates
5	SHAGUN THAKUR	Correlation Between Submaximal Exercise Capacity, Sleep Quality And Wheelchair Skills In SCI Individuals Maneuvering Manual Wheelchair- A Pilot Study
6	NATHERA BEGUM S	Effectiveness Of Respiratory Neurophysiological Facilitatory Techniques And Weaning Parameters In Mechanically Ventilated Patients
7	SARANGAN K K	Effects Of Manual Diaphragmatic Release And Pursed Lip Breathing Among Childhood Asthma
8	LEESHA SHAH	Immediate Effects Of Chest PT On Cardiorespiratory Parameters Of Mechanically Ventilated Neonates
9	KOMAL PREET KAUR	Power Of Breath: Pranayama's Impact On Lung Health And Cognitive Function
10	MANSI NEGI	Effect Of Respiratory Muscle PNF On Respiratory Muscle Strength In SCI Individuals-A Pilot Study
11	DISHA BHATTACHARYA	Effect Of Respiratory Muscle Training On Cognitive Function And Social Well-Being Of SCI Patients
12	RIYA BHANUSHALI	To Assess Quality Of Life And Kinesiophobia 3 Month After Phase 2 Cardiac Rehabilitation Of PTCA Patients

JUNIOR SPORTS

8	RAMANAN.M	Effects of eccentric oriented strength training versus blood flow restriction training on return to sports after anterior cruciate ligament reconstruction with patellar tendon autograft
9	SOUMYA SINGH	Effect of Holmich and Copenhegen Protocol on Lumbar Paraspinal Muscle Endurance and performance in Female Fast Bowlers- A Quasi Experimental Study
10	MAHIMA	Prevalence and pattern of musculoskeletal injuries among the under-19
	KAPOOR	players during the 18 th all india s.balwant singh kapur memorial hockey tournament for mata parkash kaur cup
11	SHUBHANGI AGRAWAL	To compare the efficacies of plyometrics and kinetic chain training with scapular exercises on performance, strength, and stability of shoulder in professional badminton players: A Randomized clinical trial Study

VENUE **– CMET**

JUNIOR NEURO – 18 + 1 ONLINE

S NO	NAME	TITLE
1	KRUTIKA SURANA	Taping For Mobility: Immediate Effects Of Kinesiotaping On Foot Drop To Improve Balance And Walking Ability In Guillain-Barré Syndrome.A Case Study
2	HARSHITA JAIN	Synergizing Triggered Fes And Pnf: A Novel Approach To Trunk Control In Stroke Rehabilitation - Protocol Development And A Case Study
3	AMAN KANDA	Effectiveness Of Pacing Activities Combined With Strengthening And Balance Training In Individuals With Limb-Girdle Muscular Dystrophy: A Case Report
4	RAINA MISHRA	Effect Of Virtual Reality Training Along With Conventional Therapy On Trunk Function, Standing Balance And Mobility In Stroke Patients- Acase Study
5	KIRTI BHARDWAJ	Impact Of Neural Mobilization On Grip Strength In Asymptomatic Smartphone Addicted Individuals
6	NARMADHA S	Efficacy Of Lee Silverman Voice Treatment-BIG And Nordic Pole Walking On Balance Impairment And Quality Of Life In Parkinson's Individuals
7	HARIPRATHA S	Effects Of Motor Cognitive Dual Task Training And Dynamic Neuromuscular Stabilization Training On Dynamic Stability In Individuals With Vestibular Ataxia
8	JEEVITHA D	Comparison Between Task Based Dynamic Hand Splint Exercises And Mirror Therapy Exercises For Hemiplegic Hand Function.
9	SAKSHI RUNWAL	Effectiveness Of Pelvic Proprioceptive Neuromuscular Facilitation On Balance And Gait Parameters In Children With Hemiplegic Cerebral Palsy: A Case Report
10	MOHAMED SALAHUDEEN M A	Effects Of Cognitive Training On Attention And Executive Function Among People With TBI
11	ASHWINI SHIVAJI MISTRY	Assessment Of Burden On Caregivers Of Patients With Neurological Disorders : A Cross Sectional Study.
12	SANLAP KUNDU	Boosting Functional Mobility Post Stroke: The Added Impact Of Emg Biofeedback In Bobath Therapy For Lower Limb Rehabilitation
13	HARSH KHORWAL	Impact Of Biomarker Analysis On Unveiling Neuroplasticity-Driven Rehabilitation Outcomes In Adult Stroke Population: A Systematic Review
14	***SAJA OMAR BASHARAHIL***	*Community Mobility In Patients With Multiple Sclerosis In Saudi Arabia – A Qualitative Study Analysis*
15	NIKHIL CHOWDHARY	Effect of Nintendo Wii based exergaming on sitting balance and quality of life in patients with incomplete spinal cord injury.
16	SAMPADA SHARMA	Quality Of Life In Individuals With Chronic Spinal Cord Injury Using WHOQOL-BREF
17	IFFAT NASEEM	Effect Of Application-Based Cognitive Training On Attention, Memory And Processing Speed In Individuals With Sci
18	MEENAL BANSAL	Optimizing Ankle Kinematics And Spatio-Temporal Gait Variables Through Integrated Activity-Based Mirror Therapy And
		Neuromuscular Electrical Stimulation In Individuals With Stroke

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2025

January

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INDIA
Holidays & Observances

Jan 01	New Year's Day
Jan 14	Makar Sankranti
Jan 14	Pongal
Jan 26	Republic Day
Feb 26	Maha Shivaratri
Mar 14	Holi
Mar 30	Gudi Padava/Ugadi
Mar 31	Eid al-Fitr
Apr 06	Rama Navami
Apr 10	Mahavir Jayanti
Apr 18	Good Friday
Apr 20	Easter
May 12	Buddha Purnima
Jun 07	Bakr Id/Eid ul-Adha
Jul 06	Muharram/Ashura
Aug 15	Independence Day
Aug 16	Janmashtami
Aug 27	Ganesh Chaturthi
Sep 05	Onam & Eid-e-Milad
Sep 30	Maha Ashtami
Oct 01	Maha Navami
Oct 02	Dussehra
Oct 02	Gandhi Jayanti
Oct 20	Diwali/Deepavali
Nov 05	Guru Nanak Jayanti
Dec 25	Christmas Day

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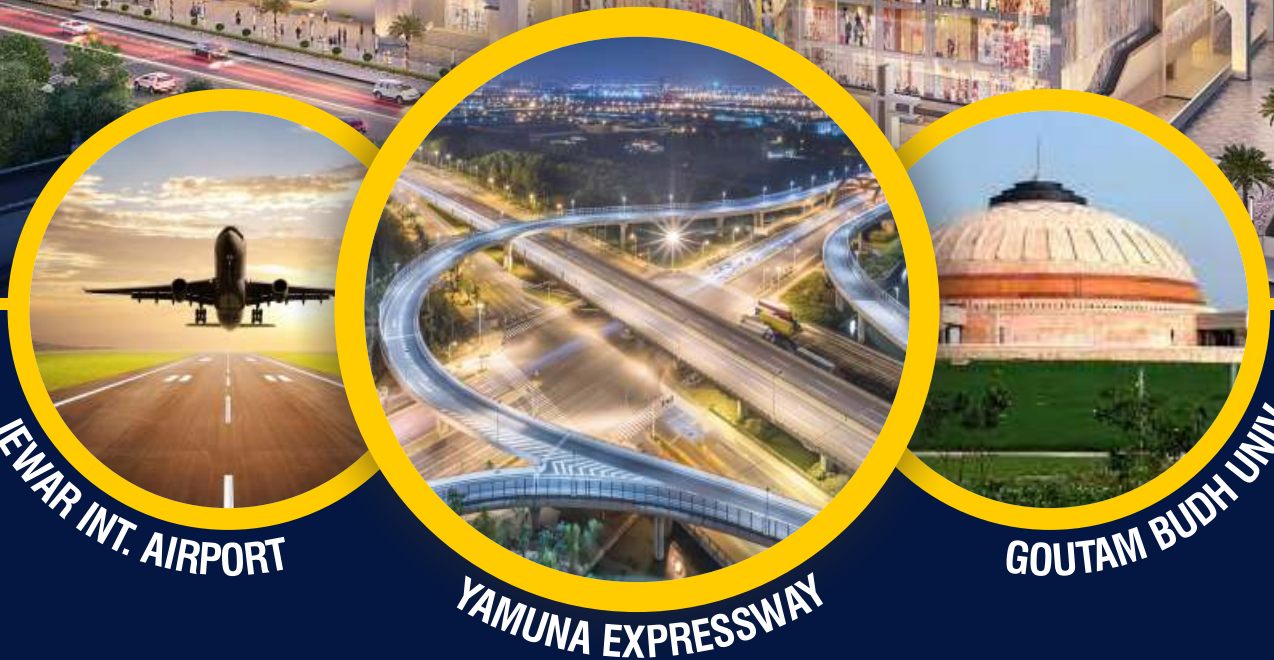

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